



**REQUEST FOR BIDS  
RE-ROOFING TRANSER & THICKENING  
BUILDINGS**

**Located at 601 N. Eastern Blvd., Fayetteville N.C. 28301**

**AND**

**WATER RESOURCES & ELECTRIC VEHICLE  
SHEDS**

**Located at 955 Old Wilmington Road, Fayetteville, N.C. 28301**

**PWC2122035**

**FAYETTEVILLE PUBLIC WORKS COMMISSION  
955 OLD WILINGTON ROAD  
FAYETTEVILLE, N.C. 28301**

## **TABLE OF CONTENTS**

### **DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 11 00	Advertisement for Bids
	Bidder’s Signature Page
00 21 00	Instructions to Bidders
00 30 00	Bid Form and Bidder’s Qualifications Form
00 31 00	Bidder Information Form
00 40 00	Agreement
00 41 00	Notices
00 50 00	Contract Supplemental Forms
00 55 00	SDBE Forms
00 65 00	Closeout Forms
00 71 00	Definitions and Terminology
00 72 00	General Conditions
00 75 00	COVID-19
00 80 00	Revisions, Clarifications, and Modification

Architectural Drawings & Technical Specifications

## 00 11 00 | ADVERTISEMENT FOR BIDS

### FAYETTEVILLE PUBLIC WORKS COMMISSION

#### PROJECT: Re-Roofing Transfer & Thickening Buildings and Water Resources & Electric

#### Vehicle Sheds

#### SUMMARY

Pursuant to North Carolina General Statutes (NCGS) §143-129, the Fayetteville Public Works Commission (hereinafter referred to throughout the Contract Documents as “PWC” or “Public Works Commission” or “Owner”) will receive sealed Bids for the subject Project until **2:00 PM** local time, **Tuesday, April 19, 2022**, outside the entrance doors of the PWC Administration Building located at 955 Old Wilmington Rd, Fayetteville, NC 28301. Late bids will not be considered and will be returned to the bidder unopened.

The Project involves re-roofing four (4) buildings totaling approximately 37,050 square feet of roof area and other work as described in the Contract Documents.

A **Mandatory Pre-Bid meeting** will be held at the PWC Administration Building, 955 Old Wilmington Road, Skill Lab, Fayetteville, NC 28301 on **Tuesday, April 5, 2022, at 10:00 AM**. Questions will be fielded at the pre-bid meeting and all prospective bidders are encouraged to attend the meeting. Individual telephone inquiries are prohibited. PWC assumes no responsibility to fully inform absentees of clarifications not issued by addendum.

#### OBTAINING BID DOCUMENTS

Plans and specifications including Contract Documents will be available online at <https://www.faypwc.com/purchasing/>

Plans may also be found at the FSU Construction Resource Office:

<https://www.uncfsu.edu/academics/colleges-schools-and-departments/broadwell-college-of-business-and-economics/outreach-centers/construction-resource-office>.

In collaboration with the North Carolina Institute of Minority Economic Development, the Construction Resource Office at Fayetteville State University offers services and support to help small, minority, veteran, and women-owned businesses identify and compete for construction-related projects.

The CRO can assist contractors with the following:

- Research, view, and print project drawings to scale free of charge
- Software to prepare your bid
- Certification and pre-qualification assistance

Please email the FSU CRO to make an appointment: [tcbryant@uncfsu.edu](mailto:tcbryant@uncfsu.edu)

## PERFORMANCE AND DELIVERY SCHEDULE

The following table summarizes the procurement schedule for this Project. All times are local to PWC

<b>Deadline for Questions from Bidders</b>	<b>5:00 PM, Friday, April 8, 2022,</b> All Questions must be submitted via email <a href="mailto:shelby.lesane@faypwc.com">shelby.lesane@faypwc.com</a>
<b>Deadline for Bids and Bid Opening</b>	<b>2:00 PM, Tuesday, April 19, 2022,</b> Outside PWC Administrative Building
<b>Bid Security Requirement</b>	5% of Total Bid/Bid Bond
<b>Holding Period for Bid Acceptance</b>	120 calendar days
<b>Mandatory Pre-Bid Meeting</b>	<b>10:00 AM, Tuesday, April 5, 2022 (Skill Lab)</b>

## QUESTIONS REGARDING THIS PROJECT

Questions regarding procurement of this Project shall be submitted in writing to the attention of the Procurement Advisor, Shelby Lesane, for this Project. All questions must be submitted via email to [shelby.lesane@faypwc.com](mailto:shelby.lesane@faypwc.com) by 5:00pm on Friday, April 8, 2022.

Oral explanations and interpretations made prior to Bid opening shall not be binding. **Bidders are expressly prohibited from contacting any PWC official or employee regarding procurement of this Project, except as expressly noted above. Violation of this prohibition is grounds for the immediate disqualification of the bidder.**

PWC will provide Bidders of record with responses to questions. If the questions result in revisions to the plans and/or the Contract Documents, an addendum will be issued by the PWC Procurement Advisor.

FAYETTEVILLE PUBLIC WORKS COMMISSION

Trent Ensley

Procurement Manager



**BIDDER'S SIGNATURE PAGE**

DATE \_\_\_\_\_

NAME OF COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_ FAX NUMBER \_\_\_\_\_

E-MAIL ADDRESS \_\_\_\_\_

FEDERAL ID NUMBER \_\_\_\_\_

MINORITY OR WOMAN OWNED BUSINESS ENTERPRISE \_\_\_\_\_ YES \_\_\_\_\_ NO

BID SUBMITTED BY: \_\_\_\_\_

(NAME PRINTED OR TYPED)

\_\_\_\_\_

(AUTHORIZED SIGNATURE)

CONTACT NAME (If different from above) \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

## 00 21 00 | INSTRUCTIONS TO BIDDER

### 1. DEFINED TERMS

- 1.01 Bid Package – A sealed envelope containing the Bid Form, and all required supplemental forms and documentation as required by the Contract Documents.
- 1.02 Designer/Architect– The company hired by PWC to prepare and be responsible for, among other duties, the Technical Specifications for the Project, being Fleming & Associates, PA; 1004 Hay St., Fayetteville, NC 28305. Fleming & Associates, PA is also referred to throughout the Contract Documents as “Engineer” and “architect.”
- 1.03 PWC Procurement Advisor – The person to whom Bidder shall direct all questions or concerns regarding procurement of this Project. The PWC Procurement Advisor for this Project is Shelby Lesane.

### 2. COPIES OF BID DOCUMENTS

- 2.01 Complete sets of the Bid Documents may be obtained from PWC website at faypwc.com. The Bidder shall use complete sets of Contract Documents to prepare Bids. PWC assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.
- 2.02 PWC, in making copies of Bid Documents available, does so only for the purpose of obtaining Bids for the Project and does not authorize or confer a license for any other use.

### 3. QUALIFICATIONS OF BIDDERS

- 3.01 Bidder Qualification Form – The Bid Package shall include the completed Bidder Qualification Form and all supporting documentation.
- 3.02 Statutory Requirements – The Bidder shall comply with all federal, state, and local statutes, regulations, and codes as they relate to the Project. Failure to comply with these requirements shall be considered a breach of contract.

#### Contractor License

1. An entity or individual performing construction, removal, repair, or improvement to or upon any real property owned, controlled, or leased by the City of Fayetteville shall be licensed as a North Carolina general contractor under the provisions of the North Carolina General Statutes.

2. The contractor at a minimum must hold at least one of the General Contractor Classifications:

- General Building Contractor - Roofing

#### Verification of Work Authorization (NCGS Chapter 64 – Article 2)

3. E-Verify is the federal program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes.
-

4. In executing the Contract Agreement, Contractor certifies that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, shall, after hiring an employee to work in the United States, verify the work authorization of the employee through E-Verify.
5. In executing the Agreement, Contractor pledges, attests and warrants that Contractor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by Contractor shall comply with any and all E-Verify requirements.
6. Failure to comply with the requirements for verification of work authorization shall be considered a breach of Contract.

3.03 Small Disadvantaged Business Enterprise (SDBE) – The Bidder shall comply the City of Fayetteville’s SDBE requirements. The Bid Package shall include the appropriate SBDE qualifying businesses. The SDBE participation as submitted in the Bid Package shall be the Contract requirement if the Bidder is awarded the bid.

The following SDBE forms shall be submitted **with the bid**:

1. If **any portion** of the Work will be subcontracted, the Bidder shall submit:
  - a. SDBE Contract Provisions Form; AND
  - b. **SDBE Affidavit A** – Checklist of Good Faith Efforts made to solicit SDBE businesses; AND
  - c. Identification of SDBE Participation Form, which shall list the amount of Work that will be subcontracted to each SDBE qualifying subcontractor.
2. If **no portion** of the Work will be subcontracted, and all elements of the Work will be performed by the Bidder's own employed forces, the Bidder shall submit:
  - a. SDBE Contract Provisions Form; AND
  - b. **SDBE Affidavit B** – Intent to Perform Contract with Own Workforce; AND
  - c. Identification of SDBE Participation, which shall list no SDBE qualifying subcontractors and shall **show a total value of \$0.00** for the SDBE participation.

The following SDBE forms shall be submitted after the Bidder is selected as the apparent low Bidder:

3. If the portion of the Work that will be completed by SDBE subcontractors is **equal to or greater than 10%** of the Bidder's total contract price, the Bidder shall submit:
    - a. **Affidavit C** – Portion of Work to Be Performed by Small Disadvantaged Firms.
  4. If the portion of the Work that will be completed by SDBE subcontractors is **less than 10%**
-

of the Bidder's total contract price, the Bidder shall submit:

a. **Affidavit D** - Good Faith Efforts and supporting documentation.

3.04 The Bidder's failure to submit required qualification information could disqualify the Bidder from receiving an award of the contract.

3.05 No requirement in this Section 3 to submit information will prejudice the right of PWC to seek additional pertinent information regarding the Bidder's qualifications.

3.06 The Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

#### 4. **BIDDER'S REPRESENTATIONS**

4.01 In submitting a Bid, the Bidder represents that it has reviewed and understands the Contract Documents, including the Technical Specifications for the Project, and the Bid is submitted in accordance therewith. Bidder further represents that it understands and agrees that the Bid Specifications and Technical Specifications, along with the other Contract Documents, set forth the scope of Work and the minimum standards for any materials that are to be used, the methods of installation, and the quality of workmanship to complete the Project that must be met to complete the Project and that Bidder has the necessary workforce, equipment, and other resources to meet fully comply with the Bid Specifications, Technical Specifications, and other Contract Documents.

#### 5. **INTERPRETATIONS AND ADDENDA**

5.01 All questions about the meaning or intent of the Contract Documents shall be submitted in writing to the PWC Procurement Advisor. In order to receive consideration, questions must be received by the PWC Procurement Advisor no later than the date indicated in the Advertisement for Bids.

**5.02 Bidders are expressly prohibited from contacting any PWC employee or representative associated with this project, except as noted above. Violation of this prohibition is grounds for the immediate disqualification of the bidder. No alteration of the bid documents is acceptable and will result in rejection of bid.**

5.03 Interpretations or clarifications considered necessary by the PWC in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Contract Documents. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5.04 The Bidder shall be responsible for determining that all Addenda issued by the PWC have been acknowledged before submitting a Bid for the Work. The Bidder shall acknowledge the receipt of each Addendum on the Bid Form.

#### 6. **BID SECURITY**

6.01 Bids are to be received and opened in accordance with NCGS 143-129 (formal bidding process) and each Bid shall be accompanied by Bid security made payable to the Fayetteville Public Works Commission in an amount of five percent (5%) of Bidder's

---



maximum Bid price and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Contract Documents)

- 6.02 All bonds shall be executed by a surety company selected by the Bidder, which is legally authorized to do business in the State of North Carolina (NCGS 44A-26), and the bond shall be the same in both form as well as substance as AIA Document A310, Bid Bond. The Bidder shall require the attorney-in- fact, who executed the required bond on behalf of the surety company, to affix thereto a certified and current copy of the power of attorney. The bond premium shall be paid by the Bidder and the cost shall be included in the total Bid price.
- 6.03 The Bid security of the apparent Successful Bidder will be retained until PWC awards the Contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within the time required in the Notice of Award, PWC may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited not as a penalty, but as liquidated damages.
- 6.04 No forfeiture under a Bid security shall exceed the lesser of (a) the difference between the Bid for which the Bid security was written and the next low Bid of another Bidder, or (b) the face amount of the Bid security.
- 6.05 Any inspection of procurement transaction records shall be subject to reasonable restrictions to ensure the security and integrity of the records.

## 7. **CONTRACT TIMES**

- 7.01 The Contract Time shall be 120 Calendar Days from the applicable dates set forth hereinafter. The work for the Thickening and Transfer buildings will proceed upon execution of the contract and will be funded from the PWC FY 22 Capital Improvement Program Budget. The work for the Water Resources and Electric sheds will commence after July 1, 2022, and will be funded from the PWC FY 23 Capital Improvement Program Budget Subject to final budget approval in June 2022. All work shall be completed in 120 calendar days.

## 8. **RESERVED**

## 9. **SUBMITTAL OF BID**

- 9.01 A complete Bid package shall consist of **one original and one copy** of the properly executed Bid Form and all items listed on within the bid documents.
- 9.02 All forms shall be properly signed and dated where indicated. If the Bidder is a corporation, the Bid must be submitted in the name of the corporation, not simply the corporation's trade name. In addition, the Bidder must indicate the corporate title of the individual signing the Bid.
- 9.03 The Bidder shall acknowledge receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 9.04 The Bidder shall use the enclosed forms, or exact copies thereof, in submitting its Bid. PWC will not accept oral bids or bids received by Fax machine. The Bid Form must be completed in blue or black ink, electronically, or by typewriter. All strikethroughs, insertions, additions, or other alterations shall be signed or initialed by the Bidder.
-

- 9.05 Discrepancies between amounts shown in words and amounts shown in figures will be resolved in favor of the amounts shown in words. Discrepancies in the multiplication of units of Work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 9.06 All items included in the Bid Package shall be sealed in an envelope and marked "Attention: Shelby Lesane, Procurement Advisor." The Bidder shall annotate the lower left corner of the envelope with the Project Name, the Project Number PWC\_2122035, the Bid due date and time, the Bidder's name, and the Bidder's NC Contractor License Number and a copy of the License.**
- 9.07 If the Bid Package is to be delivered to PWC via mail or courier, the sealed Bid Package shall be enclosed in an additional mailing envelope and addressed to:  
**Fayetteville Public Works Commission  
Project Number PWC2122035  
Attention: Shelby Lesane, Procurement Advisor  
955 Old Wilmington Road  
Fayetteville, NC 28301**
- 9.08 All Bids received by the PWC Procurement Department by the deadline indicated will be kept in PWC's Procurement Department office until the time and date set for the opening of Bids.
- 9.09 Bids sent by mail or courier that are delivered to the PWC Procurement Department after the time for receipt of Bids shall not be considered as valid Bids. In such instances, the Bidders shall have no claim against PWC.
- 9.10 The date and time of the opening of Bids shall be determined by the Procurement Department. Bidders are responsible for ensuring that their Bids are received by Procurement Department personnel by the deadline indicated. All late Bids shall be returned unopened to the sender.
- 9.11 Bids containing any conditions, omissions, alterations, or items not called for in the Bid, or failure to submit any of the items listed within the bid documents may be rejected by PWC as incomplete or non-responsive.
- 9.12 Any Bidder shall provide with its Bid all submittals detailed in the Bid Specifications. Unless otherwise stated, a Bidder must submit all of the information and documentation identified in the Bid Specifications with its Bid, and failure to provide complete and full information and documentation may render a Bid non-responsive.

## **10 MODIFICATION AND WITHDRAWAL OF BID**

- 10.01 A Bid may be modified or withdrawn by the Bidder any time prior to the time and date set for the receipt of Bids. The Bidder shall notify the PWC Procurement Department in writing of intentions to withdraw the bid. Modified and withdrawn Bids may be resubmitted to the PWC Procurement Department up to the time and date set for the receipt of Bids.
- 10.02 Bids shall not be withdrawn after Bids are opened except in strict accordance with NCGS. §143- 129-1.
-

## **11 OPENING OF BIDS**

- 11.01 Bids that are to be received and opened in accordance with NCGS §143-129 will be opened and reviewed by the PWC Procurement Department shortly after the time stated in the Advertisement for Bids.
- 11.02 Any Bidder, upon request, shall be afforded the opportunity to inspect Bid records within a reasonable time after the award consistent with North Carolina law, except in the event that PWC decides not to accept any of the Bids and reopens the bidding period.
- 11.03 Any inspection of procurement transaction records shall be subject to the limitations set forth by North Carolina's public records laws.

## **12 BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 12.01 All Bids shall be held and shall remain subject to acceptance for the period stated in the Advertisement for Bids.

## **13 EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 13.01 PWC reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, or conditional Bids. PWC will reject the Bid of any Bidder that PWC finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Contract Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then PWC may reject the Bid as nonresponsive; provided that PWC also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
  - 13.02 If PWC awards the contract for the Work, such award shall be to the lowest responsive, responsible Bidder. PWC holds the right to award bid to one or more bidders for the purposes of the scope of services.
  - 13.03 To determine the apparent low Bidder, bids will be compared on the basis of the total bid price for the work specified on all four (4) buildings.
  - 13.04 In evaluating whether a Bidder is responsible, PWC will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Contract Documents and the Bidder's ability to perform under the contract, as well as whether the Bidder possesses the skill, judgment, and integrity necessary to the faithful performance of the contract, as well as sufficient resources and ability.
  - 13.05 PWC may conduct such investigations as PWC deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.
  - 13.06 After all bid packages have been reviewed, PWC will select the lowest responsive, responsible bidder and will issue correspondence to the lowest responsive, responsible bidder within ninety (90) calendar days after the Bid Opening.
  - 13.07 The lowest responsive, responsible bidder that enters into the Agreement with PWC to
-

complete the Project is referred to throughout the Contract Documents as the “Successful Bidder” or “Contractor.”

#### **14 BONDS AND INSURANCE**

14.01 Requirements pertaining to bonds and insurance are set forth in the General Conditions.

#### **15 SIGNING OF AGREEMENT**

15.01 When PWC issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement (referred to throughout the Contract Documents as the “Contract” or “Agreement”) along with the other Contract Documents as identified in the Agreement. Within 10 calendar days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to the PWC Procurement Advisor. Within ten (10) calendar days thereafter, PWC shall deliver one fully executed counterpart of the Agreement to Successful Bidder (also referred to as the “Contractor”).

#### **16 SALES AND USE TAXES**

16.01 The Successful Bidder shall pay all county, city, state and federal taxes required by laws in effect at the time Bids are received and resulting from the Work or traceable thereto, under whatever name levied.

16.02 Said taxes shall not be in addition to the contract price between PWC and the Successful Bidder. The taxes shall be an obligation of the Successful Bidder and not of PWC. PWC shall be held harmless for same by the Successful Bidder.

#### **17 Safety**

17.01 Contractor shall be sole responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. Such responsibility does not relieve Subcontractor of its responsibility for the safety of persons or property in the performance of the work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. All persons on the site or who may be affected by the work:
2. All the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.

17.02 Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safety guards for such safety and protection. Contractor shall notify owners of adjacent property and of underground facilities and other utility owners when prosecution of the work may affect them, and

---

shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- 17.03 Contractor shall comply with the applicable requirements of PWC's safety programs.
  - 17.04 Contractor shall inform PWC and architect of the specific requirements of Contractor's safety program with which Owner's and Architect's employees and representatives must comply while at the Site.
  - 17.05 All damage, injury, or loss to any property referred above caused, directly or indirectly, in whole or in part, by Contractor, its employees, agents, representatives, subcontractors and anyone for whose acts Contractor may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of drawings or specifications or to the acts or omissions of owner or architect or anyone employed by any of them, or anyone for whose acts any of them may be liable, not attributable, directly or indirectly, in whole or in part, to the fault or negligence of contractor or any subcontractors, supplier, or other individual or entity directly or indirectly employed by any of them).
  - 17.06 Contractor's duties and responsible for safety and protection of the work shall continue until such time as all the work is completed and architect has issued a notice to owner and contractor in accordance the contract documents.
  - 17.07 Safety Representative – Contractor shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
  - 17.08 Hazard Communications Programs – Contractors shall be responsible for the coordination and exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among its employees and any subcontractors at the site in accordance with the Laws and Regulations.
  - 17.09 Emergencies – In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give architect prompt written notice if contractor believes that any significant changes in the work or variations form the contract documents have been caused thereby or are required as a result thereof, If architect determines that a change in the contract documents is required because of the action taken by contractor in response to such an emergency, a work change directive or change order will be issued.
-

**BID FORM**

**PROJECT:RE-ROOFING TRANSFER & THICKENING BUILDINGS AND WATER RESOURCES & ELECTRIC VEHICLE SHEDS**

**1. BID RECIPIENT**

1.01 This Bid is submitted

To: Fayetteville Public Works Commission

By: \_\_\_\_\_ (the "Bidder")

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into the Agreement with Owner to perform all Work as specified or indicated in the Contract Documents for the prices and within the times indicated in this Bid and in accordance with all other terms, conditions, and provisions of the Contract Documents Contract Documents.

**2. BIDDER'S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 calendar days after the Bid opening, or for such longer period of time that Bidder and Owner may agree to in writing.

**3. BIDDER'S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

Bidder has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No. & Date

Authorized  
Signature

\_\_\_\_\_  
\_\_\_\_\_

Bidder has visited the Site and conducted a thorough, alert visual examination of the Site and adjacent areas, and has become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

Bidder has carefully studied and is familiar with all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that has been

identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and any Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Contract Documents.

Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

Bidder has given the PWC Project Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Contract Documents and confirms that the written resolution thereof by the PWC Project Engineer is acceptable to Bidder.

The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Contract Documents, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Contract Documents.

#### **4. BIDDER'S CERTIFICATION**

##### **4.01 Bidder certifies that:**

This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of

the Contract.

**5. TIME OF COMPLETION**

5.01 Bidder agrees that the Work will be complete within 120 calendar days from the issuance of the Notice to Proceed.

**6. ATTACHMENTS TO THIS BID**

6.01 All items listed on the Bid Submittal Checklist are submitted with and made a condition of this Bid.

**7. DEFINED TERMS**

7.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, the Construction Agreement, or the Supplementary Conditions.

**8. BID SUBMITTAL**

8.01 Communications concerning this Bid shall be addressed to:

Contact Name: \_\_\_\_\_

Address \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Bidder's NC Contractor License Number \_\_\_\_\_

Federal employer identification number (EIN): \_\_\_\_\_

Or if Bidder is a sole proprietor

Bidder's social security number (SSN): \_\_\_\_\_

This Bid submitted on \_\_\_\_\_, 20\_\_

BY: \_\_\_\_\_

(Authorized Signatory)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Title)

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_ My Commission expires \_\_\_\_\_

(Notary Public)



**BID FORM  
SCHEDULE OF UNIT PRICES FOR:**

**RE-REFOOFING AT TRANSFER & THICKENING BUILDING, WATER & ELECTRIC VEHICLE SHED**

Total Bid or Contract Price or Price: the total dollar amount all labor and materials required to complete the Project in compliance and per the Contract Documents.

\*Unit Prices shall be provided in the table below in the event that the items below are needed to complete the Project. For such items described below the PWC Project Manager will verify the quantity used and the Contractor shall be paid based on the unit price given below. Payment shall come from, and be limited to, the Contingency Allowance of \$40,000.00 as shown on the bid form. A square footage price for items No 7 and No 8 below will be utilized for any overruns on Polyiso Insulation and Walkway Pads. The square footage amount of Walkway Pads show on the plans shall be included in the base bid and the square footage of Polyiso Insulation shown on the plans, plus an additional 500 sq. ft. shall be included in the base bid. Any overruns may be paid for based on the unit price shown below based on approval in writing from PWC.

<b>Unit Price</b>	<b>Description</b>	<b>UOM</b>	<b>Quantity</b>	<b>Total</b>
<b>No 1</b>	<b>Metal roof deck repair</b>	<b>Sq.Ft.</b>	<b>0</b>	
<b>No 2</b>	<b>Metal roof deck replacement</b>	<b>Sq.Ft.</b>	<b>0</b>	
<b>No 3</b>	<b>Retrofit roof drain installation</b>	<b>Drain</b>	<b>0</b>	
<b>No 4</b>	<b>Replacement of existing 2X4</b>	<b>LF</b>	<b>0</b>	
<b>No 5</b>	<b>Replacement of existing 2X6</b>	<b>LF</b>	<b>0</b>	
<b>No 6</b>	<b>Replacement of existing 2X8</b>	<b>Sq.Ft.</b>	<b>0</b>	
<b>No 7</b>	<b>Walkway Pads</b>	<b>Sq. Ft.</b>	<b>See Plans</b>	
<b>No 8</b>	<b>Polyiso Insulation</b>	<b>Sq. Ft.</b>	<b>See Plans + 500</b>	

**Project:** Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds

**Bidder:** \_\_\_\_\_

**Owner:** The Fayetteville Public Works Commission

**Date:** \_\_\_\_\_

**NOTE: Contingency Allowance: The base bid is to include a \$40,000.00 contingency allowance**

All work at Transfer Building: Dollars (\$) \_\_\_\_\_

All work at Thickening Building: Dollars (\$) \_\_\_\_\_

All work at Water Resources Shed: Dollars (\$) \_\_\_\_\_

All work at Electric Shed: Dollars (\$) \_\_\_\_\_

Contingency Allowance: Dollars (\$) 40,000.00 \_\_\_\_\_

Total Bid: Dollars (\$) \_\_\_\_\_

**Bidder** \_\_\_\_\_

Business License Number \_\_\_\_\_

Contact Person \_\_\_\_\_

Authorized Signature \_\_\_\_\_

**Liquidated Damages:** \$500.00 per day beyond the Completion Time.

**Basic Specifications and Requirements**

Re-Roofing at (1) Transfer Building, (2) Thickening Building, (3) Water Resources Vehicle Shed, and (4) Electric Vehicle Shed, each located at either 601 N. Eastern Blvd. and 955 Old Wilmington Road, both being in Fayetteville, NC. Contractor to install roofing as shown on drawing, as described in and required by the Technical Specifications and other Contract Documents, and as indicated in Schedule of Unit Prices and specifications for a roof system. The Contractor shall furnish all implements, machinery, tools, equipment, materials, labor, and all other incidentals necessary to perform the Work as required under the terms of said Technical Specifications, drawings, and other Contract Documents.

## BIDDER QUALIFICATION FORM

**\*\*\*MUST BE COMPLETED AND INCLUDED WITH BID\*\*\***

*The Fayetteville Public Works Commission reserves the right to request information from the contractor to complete its assessment of the contractor or subcontractors' qualifications. Partially complete forms may be considered non-responsive based on the quantity and quality of information provided. Wholly incomplete forms will be considered non-responsive and will result in rejection of the bid.*

### CONTRACTOR DOCUMENTATION

(1) Name of **Prime Contractor**

Name:

and **NC License Number:**

NC License No:

a. Within the **last five (5) years**, has the contractor been involved in any judgments, claims, or arbitration with regard to renovation type projects? **If so, provide list and describe each event fully. Attach additional information, as necessary.**

- Yes  
(provide list and describe each event fully)
- No

b. Within the **last five (5) years**, has any officer or principal of the organization ever been an officer or principal of another organization when it failed to complete a renovation project? **If so, provide list and describe each event fully. Attach additional information, as necessary.**

- Yes  
(provide list and describe each event fully)
- No

(2) Provide list of other **Subcontractors** and field of specialty (electrical, mechanical, etc.), if applicable. Additional subcontractors can be attached to the qualifications form, if necessary.

a. Subcontractor Name: Specialty:

b. Subcontractor Name: Specialty:

c. Subcontractor Name: Specialty:

d. Subcontractor Name: Specialty:

**CONTRACTOR'S EXPERIENCE**

(1) The Contractor shall provide not less than **three (3)** references documenting of roof partial replacement/complete roof tear off within the last **five (5)** years. References shall be from projects within the United States. Provide the dates of the reference's projects, the client representative, name, and telephone numbers. Additional projects may be attached at the Bidder's discretion.

<b>a. Project/Location:</b>			
Superintendent:			
Start Date:		End Date:	
Client:			
Client Contact Name:		Phone:	
Scope/Additional Information:			
<b>b. Project/Location:</b>			
Superintendent:			
Start Date:		End Date:	
Client:			
Client Contact Name:		Phone:	
Scope/Additional Information:			
<b>c. Project/Location:</b>			
Superintendent:			
Start Date:		End Date:	
Client:			
Client Contact Name:		Phone:	
Scope/Additional Information:			



State of North Carolina  
Cumberland County

## AGREEMENT

**THIS AGREEMENT** (“Agreement”) is made by and between the City of Fayetteville (the “City”), by and through the Fayetteville Public Works Commission (“FPWC”), a North Carolina public authority, and \_\_\_\_\_ (“Contractor”), a \_\_\_\_\_. (each of PWC and Contractor is a “Party” and both are collectively the “Parties”) as of the date of execution last written below (the “Effective Date”). The Parties agree as follows:

1. The Construction Project. Contractor shall furnish and bear solely the entire cost of all labor and materials necessary for the construction and/or renovation of the Project (defined hereinbelow) as specified in the Contract Documents (defined hereinbelow) and complete all Work on the Project in a workmanlike manner in strict accordance with the Contract Documents, schedule delivery of the new materials, furnish and bear solely the entire cost of all supervision, contract administration, equipment, tools, and other means necessary to complete the Project, perform every obligation imposed by the Contract Documents, and be solely responsible for the clean-up and disposal of all materials and debris relating to or arising from the construction and renovation, subject to any exceptions that are specifically set forth in the Contract Documents. Contractor is solely responsible for all construction means, methods, techniques, sequences, procedures, safety precautions or programs, supervising, coordinating, and performing all the Work necessary to complete the Project; provided, however, PWC shall have the right, without incurring any liability to the Contractor, to suspend Contractor’s performance when a PWC employee, in his or her opinion, observes a safety violation involving a threat to life or imminent danger of bodily injury, and the suspension shall remain in effect until Contractor remedies the safety violation.

2. Terms. Capitalized terms used in this Agreement have the meaning specified below:

“Business Day” means each calendar day that is not a Saturday, Sunday, holiday observed by the federal government for its employees, or holiday observed by the State of North Carolina for its employees.

“Completion of the Project” means: (i) the Project is completed in accordance with this Agreement, except for punch list items; (ii) PWC has received any required temporary or final certificate of occupancy from the governmental agency with jurisdiction over the Project; and (iii) the registered architects or engineers (the “Designer(s)”) who designed portions or components of the Project have issued certificates of Completion of the Project as to those portions or components.

“Contract Documents” means the following documents that were either made available to Contractor by PWC during the bid solicitation process (including Drawings) or executed by the Parties or both, which are all incorporated by reference herein:

- a. This Agreement
- b. Advertisement for Bids
- c. Instructions to Bidders
- d. Bid Proposal Forms
- e. Bidder Qualification Form
- f. Contractor’s submitted Bid
- g. Notice of Award
- h. Acceptance of Award
- i. Notice to Proceed
- j. Bid Bond Form
- k. Performance Bond

- l. Payment Bond
- m. SDBE Instructions
- n. SDBE Forms (including all applicable completed affidavits)
- o. Contractor's General Warranty and Guaranty
- p. Definitions and Terminology
- q. General Conditions
  - a. Certificates of Insurance
  - b. Power of Attorney
  - c. Measurement and Payment
  - d. Submittals
  - e. CPM Construction Schedule
  - f. Special Provisions – Performance and Delivery
  - g. Quality Control
  - h. Technical Specifications
  - i. Drawings

The following documents may be delivered or issued on or after the Effective Date of the Agreement and may not be attached to this Agreement, but are considered Contract Documents when executed by the Parties:

- m. Notice to Proceed and Acceptance of Notice
- n. Work Change Directive(s)
- o. Change Order(s)
- p. Field Order(s)

There are no Contract Documents other than those identified in this Agreement. The Contract Documents may only be amended, modified, or supplemented as provided in this Agreement in a writing signed by the Parties.

“Fault” means a breach of contract by Contractor, negligent, reckless, or intentional act(s) or omission(s) constituting a tort under applicable statutes or common law by one or more Responsible Persons, or violation(s) of applicable statute(s) or regulation(s) by a Responsible Person.

“Project” means Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds, as more specifically set forth in the Contract Documents.

“Responsible Person” means the Contractor and each of its employees, agents, representatives, subcontractors, or other persons and entities for which Contractor may be liable or responsible as a result of any statutory, tort, or contractual duty.

The terms used in this Agreement shall have the meaning as stated herein and in the Definitions and Terminology. In the event of a conflict between the terms of this Agreement and any other component(s) of the Contract Documents, the terms of this Agreement shall govern.

2. Contract Price. PWC shall pay Contractor for completion of the Project in accordance with the Contract Documents the amount identified in the accepted Bid Form of Contractor, being in the total amount of \$                      (the “Price”). Contractor understands and acknowledges that the Price is derived from a specific appropriation of funds provided for the Project. Contractor agrees and acknowledges the Price is equal to the aggregate cost of all Work to be done on the Project, including all labor, materials, equipment, apparatus, and supplies, set in accordance with the amount specified on the Bid Form submitted by Contractor and accepted by PWC.

3. Contract Times. The Parties shall perform their obligations under this Agreement in compliance with all scheduling deadlines set forth in the Contract Documents. The Contractor shall

commence the Work to be performed under this Agreement on a date to be specified in accordance with the Notice to Proceed issued by PWC. Contractor shall achieve Completion of the Project no later than \_\_\_\_\_, plus any extensions thereof allowed in accordance with the General Conditions (the "Completion Date").

4. Payment. PWC shall pay Contractor in installment payments plus a final payment, as set forth in the Contract Documents. For each applicable installment payment, Contractor shall submit an application for payment in accordance with the Contract Documents. Applications for payment will be processed by PWC as provided in the Contract Documents. Such installment payments shall reflect the actual cost of the Work, not to exceed in total the Price, and the allocable portion of the total Price for said installment. PWC shall make payment to the Contractor, less any applicable retainage set forth in the Contract Documents; provided, however, that PWC may withhold all or a portion of a payment on account of (1) incomplete work, (2) defective or nonconforming work, (3) claims filed or a reasonable basis to believe that such claims will be filed imminently, (4) failure of the Contractor to make payments properly for labor, services, materials, equipment or subcontracts, (5) damages caused to PWC or another party by one or more Responsible Persons, or (6) failure to comply with the terms and conditions of this Agreement. In the final payment, PWC shall pay the balance of the Price, including all retained amounts, less any Liquidated Damages and other applicable damage and claim amounts, to Contractor within forty-five (45) days of Completion of the Project; provided, however, that PWC may withhold a reasonable sum from the final payment to ensure correction of any final items or condition on the Project.

5. Contractor's Representations and Warranties. In order to induce PWC to enter into this Agreement, Contractor makes the following representations and warranties to PWC:

a. Contractor is duly licensed in the State of North Carolina to complete all Work necessary for the Project, is duly organized, validly existing and in good standing and has all requisite powers, rights, and authority to execute, enter into, and perform this Agreement in accordance with the terms and conditions of this Agreement, and this Agreement constitutes a legal, valid, and binding obligation of Contractor enforceable against it in accordance with its terms.

b. Contractor has read the Contract Documents, and acknowledges and understands all data, materials, specifications, and requirements identified in the Contract Documents.

c. Contractor has visited the site for the Project, conducted a thorough, visual examination of the site and adjacent areas, and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, and performance in completing the Project.

d. Contractor is familiar with and is satisfied as to all laws and regulations that may affect cost, progress, and performance to complete the Project.

e. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the site and all drawings of physical conditions relating to existing surface or subsurface structures at the site that have been identified in the Detail Specifications and any accompanying reports and drawings, and (2) reports and drawings relating to hazardous environmental conditions, if any, at or adjacent to the site that have been identified in the Contract Documents and any accompanying reports and drawings.

f. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, if any, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and



programs.

g. Based on the information and observations referred to in subsection e. of this Section, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price commencing on the commencement date and in accordance with the other terms and conditions of the Contract.

h. Contractor is aware of the general nature of work to be performed by PWC and others at the Site that relates to the Work as indicated in the Contract Documents.

i. Contractor has given PWC's Designer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by the Designer is acceptable to Contractor.

j. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

k. Contractor's entry into this Agreement constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

l. Contractor has no business or personal relationship with any PWC Commissioner, officer, director, manager, or supervisor, and Contractor covenants to disclose immediately to PWC any such relationship that develops during the performance of Work on the Project.

6. Contractor's Payment Obligations. Contractor shall pay all of its obligations arising out of or in connection with the Project in a timely manner to all persons supplying materials in the prosecution of the Work and to all laborers and others employed thereon.

8 Contractor's Damage Repair Obligations. Contractor shall be responsible for all damages to the property of the City and of PWC that may result from the normal procedure of a Responsible Person's actions in the prosecution of the Work or that may be caused by or result from the negligence of a Responsible Person during the progress of or connected with the prosecution of the Work, whether within the limits of the Work or elsewhere. Contractor shall promptly restore all such property so damaged to a condition as good as it was immediately prior to Contractor initiating the Work on the Project.

9. Defective Work. The Project shall be subject to observation and approval by PWC, Designer, and representatives of governmental agencies with jurisdiction over the Project. PWC and Designer shall be entitled to enter at all reasonable times the premises subject to construction or renovation to inspect the Work performed by or on behalf of Contractor, provided that such entry and inspection does not materially interfere with the progress of construction. Contractor shall correct promptly, at no cost to PWC, all Work reasonably rejected by PWC or by its representatives. Should Contractor fail to correct rejected Work, PWC may, acting in its sole discretion, correct such Work, and the Contractor shall pay PWC's actual costs of correction.

10. As-Built Drawings. Contractor shall maintain during the progress of the Project as-built drawings indicating the current status of the Project as actually performed. Upon Completion of the Project, Contractor shall prepare a final version of such as-built drawings and submit them to PWC for approval.

11. Assignment. This Agreement shall be binding upon and inure to the benefit of the Parties, their legal representatives, successors, and assigns. Contractor may not assign, transfer, convey,

or encumber, whether voluntarily or by operation of law, this Agreement or any obligations, rights under, or interests in this Agreement to a third party without the prior written consent of PWC; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

12. Indemnity. Contractor shall indemnify, defend, and hold harmless PWC and its Commissioners, officers, employees, agents, and representatives and the City and its elected officials, managers, employees, agents, and representatives (collectively “Indemnitees”) from and against all claims, actions, liabilities, damages, losses, costs, and expenses (including, without limitation, injury to or death of any persons and damage to property, economic and consequential damages and attorneys’ fees) asserted by one or more third parties against one or more of the Indemnitees if the Fault of one or more Responsible Persons is a proximate cause of the loss, damage, or expense indemnified. Contractor’s obligation to indemnify, defend, and hold harmless the Indemnitees shall survive the termination of this Agreement.

13. Insurance. Contractor shall maintain during the completion of the Project and for at least three (3) years thereafter the insurance coverage set forth in the Contract Documents, which insurance shall be placed with insurance companies authorized to do business in the State of North Carolina and rated A minus VII or better by the current edition of Best’s Key Rating Guide or otherwise approved in writing by PWC. Prior to initiating any work on the Project, Contractor shall deliver certificates of insurance confirming each such coverage required by the Contract Documents, and Contractor shall direct its insurers to provide to PWC annually certificates confirming each such coverage during the coverage period. PWC shall be named as an additional insured in the comprehensive automobile and commercial liability insurance policies. Commercial general liability coverage shall be written on an “occurrence” basis. Contractor shall not reduce or allow the required insurance coverages to lapse without PWC’s prior written approval. All policies for insurance must be endorsed to contain a provision giving PWC a thirty (30) calendar day prior written notice by certified mail of any cancellation of that policy or material reduction in coverage. Should a notice of cancellation be issued for non-payment of premiums or any part thereof, or should Contractor fail to provide and maintain certificates as set forth herein, PWC shall have the right, but shall not the obligation, to pay such premium to the insurance company or to obtain such coverage and to deduct such payment from any sums that may be due or become due to Contractor, or to seek reimbursement for said payments from Contractor. Any such sums paid by PWC shall be due and payable immediately by Contractor upon notice from PWC. The insurance provisions of this Agreement shall not be construed as a limitation on Contractor’s responsibilities and liabilities pursuant to the terms and conditions of this Agreement. Contractor’s obligation to maintain insurance for three (3) years after completion of the Project shall survive the termination of this Agreement.

14. Waiver. No failure on the part of any party to exercise, and no delay in exercising, any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right hereunder preclude any other or further cumulative and not exclusive of any remedies provided by law.

15. Law. THIS AGREEMENT SHALL BE GOVERNED BY AND INTERPRETED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NORTH CAROLINA WITHOUT GIVING EFFECT TO THE CHOICE OF LAW PROVISIONS THEREOF. Contractor shall at all times comply with all applicable Federal, state, and local laws and building codes in the performance of its obligations under the Contract Documents.

16. Dispute Resolution. In the event of any dispute, controversy, or claim of any kind or nature arising under or in connection with this Agreement (a “Dispute”) and involving any two or more of PWC, Designer, Contractor or any tier subcontractor of Contractor, the party initiating the Dispute

shall serve written notice of a Dispute on the other party(ies) to the dispute, and those parties shall endeavor to settle the dispute first through direct, informal discussions between the parties' selected representatives. Any such representative(s) shall have binding authority to settle the Dispute. In the event the parties do not settle the Dispute within ten (10) days from the date of written notice of the Dispute, any party to the Dispute may, by written notice to the other party(ies), engage a mediator certified under the laws of the State of North Carolina to mediate the Dispute within thirty (30) days of such notice. The parties to the Dispute shall attend mediation in good faith. In the event mediation is unsuccessful, any party to the dispute may initiate arbitration proceedings. Any controversy or claim arising out of or relating to the Contract Documents, or the breach thereof, shall be settled by binding arbitration administered by the American Arbitration Association under its Construction Industry Arbitration Rules, and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof. All of the foregoing dispute resolution procedures shall be held in Cumberland County, North Carolina. The costs of the mediator and arbitrator in a dispute resolution process shall be divided equally among the parties to the process; provided, however, PWC shall bear at least one-third of the cost if PWC is a party to the dispute resolution and the remainder of the cost shall be divided equally among the other parties participating in the dispute resolution. PWC shall in its contractual arrangements with Designer and Contractor shall in its contracts with subcontractors and they in their contracts with lower-tier subcontractors authorize and direct such parties to participate in the dispute resolution procedures set forth in this Section. Unless otherwise directed in writing by PWC, Contractor shall continue the Project and maintain compliance with the scheduling deadlines set forth in the Contract Documents during any dispute resolution proceedings. If Contractor continues to perform, PWC shall make payments due for the continued performance in accordance with this Agreement. The provisions of this Section shall not modify any applicable statutes of limitation or repose.

17. Execution; Entire Agreement; Modification; Severability. This Agreement may be executed in counterparts with the same effect as if the signatures to each counterpart were upon a single instrument, and all such counterparts together shall be deemed an original of this Agreement. For purposes of this Agreement, a facsimile copy or scanned copy or photocopy of a party's signature shall be sufficient to bind such party. This Agreement shall be subject to execution by electronic means in accordance with Article 40 of Chapter 66 of the North Carolina General Statutes. The Contract Documents shall be conclusively considered to contain and express all the terms and conditions agreed upon by the Parties, notwithstanding any prior or contemporaneous written communication, promise, understanding or agreement. No oral communication, promise, understanding, or agreement before, contemporaneous with or after the execution of this Agreement shall affect or modify any of the terms and conditions and obligations of the Contract Documents. The Contract Documents shall be amended, modified or supplemented only by a subsequent writing signed by both Parties. Should any provision of this Agreement or any of the Contract Documents at any time be in conflict with any law, statute, rule, regulation, order or ruling and thus be unenforceable, or be unenforceable for any other reason, then the remaining provisions of this Agreement shall remain in full force and effect and the court or arbitrator shall give the offending provision the fullest meaning and effect permitted by law. The titles of the Sections throughout this Agreement are for convenience only and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this instrument.

18. Notices. Any notice which either Party is required or desires to give the other hereunder shall be deemed sufficiently given if, in writing, it is delivered personally, or sent by certified U.S. mail, return-receipt requested, postage prepaid, to the addresses listed herein below, or such other address as either Party shall give to the other Party by written notice in accordance herewith. Any notice given herein by personal delivery shall be deemed delivered when received. Any properly addressed notice given herein by certified mail shall be deemed delivered on third Business Day after the same is deposited in an official United States Post Office, postage prepaid, or if sooner upon the date when the return receipt therefore is signed, or refusal to accept the mailing by the addressee is noted thereon by the postal authorities.

To PWC:

Fayetteville Public Works Commission  
Attn: Elaina L. Ball, CEO/General  
Manager PO Box 1089  
Fayetteville, NC 28302

To Contractor:

[INSERT MAILING ADDRESS]

19. Compliance. Contractor hereby acknowledges that “E-Verify” is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Contractor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with N.C.G.S. §64-26(a). Contractor hereby pledges, attests and warrants through execution of this Agreement that Contractor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that all subcontractors currently employed by or subsequently hired by Contractor shall comply with all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement. Contractor hereby further acknowledges that the execution and delivery of this Agreement constitutes Contractor’s certification to PWC and to the North Carolina State Treasurer that, as of the date of the Effective Date of this Agreement, Contractor is not listed on (a) the Final Divestment List created and maintained by the North Carolina Department of State Treasurer pursuant to the Iran Divestment Act of 2015, Chapter 147, Article 6E of the General Statutes of North Carolina (the “Iran Divestment Act”); or (b) the list of companies that the North Carolina State Treasurer determines to be engaged in a boycott of Israel in accordance with Article 6G of Chapter 147 of the General Statutes of North Carolina. Contractor represents and warrants to Commission that Contractor, and all persons and entities owning (directly or indirectly) an ownership interest in it: (i) are not, and will not become, a person or entity with whom a party is restricted from doing business with under regulations of the Office of Foreign Asset Control (“OFAC”) of the Department of the Treasury (including, but not limited to, those named on OFAC’s Specially Designated and Blocked Persons list) or under any statute, executive order (including, but not limited to, the September 24, 2001, Executive Order 13224 Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action; and (ii) are not knowingly engaged in, and will not knowingly engage in, any dealings or transactions or be otherwise associated with such persons or entities described in clause (i) above. Contractor also shall at all times during the term of this Agreement comply with Executive Order 11246, including but not limited to the Equal Opportunity Clause requirements set forth in 41 C.F.R. § 60-1.4. Contractor shall abide by the requirements of 41 CFR 60-300.5(a) and 60-741.5(a) prohibiting discrimination against qualified individuals on the basis of protected veteran status or disability and requiring affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans and individuals with disabilities.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representatives.

The City of Fayetteville, by and through the Fayetteville Public Works Commission

[CONTRACTOR FULL LEGAL NAME]

By: \_\_\_\_\_

Elaina L. Ball, CEO/General  
Manager

By: \_\_\_\_\_

(Printed Name)  
(Title)

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act (N.C. Gen. Stat. § 159-1 et seq.).**

By: \_\_\_\_\_  
**Rhonda Haskins, Chief Financial Officer**

Approved as to form:

\_\_\_\_\_

James P. West, Chief Legal Officer

00 41 00

**NOTICE OF AWARD**

**TO:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds Contract**

The OWNER has considered the BID submitted by you for the above-described work in response to its Advertisement for Bids dated \_\_\_\_\_ and Instructions to Bidders.

You are hereby notified that your BID has been accepted for in the amount of \$ \_\_\_\_\_.

You are required by the Instructions to Bidders to execute the Agreement and furnish the required Bonds and Certificates of Insurance within ten (10) calendar days from the date of this NOTICE to you.

If you fail to execute said Agreement and to furnish said documents within ten (10) days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the OWNER's acceptance of your BID as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER. Dated this day of \_\_\_\_\_, 2022.

**OWNER: FAYETTEVILLE PUBLIC WORKS COMMISSION**

BY: \_\_\_\_\_  
Trent Ensley  
Purchasing Manager

**ACCEPTANCE OF AWARD**

**Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds Contract**

Receipt of the preceding NOTICE OF AWARD is hereby acknowledged this

the \_\_\_\_\_ day of \_\_\_\_\_, 2021.

**CONTRACTOR**

By: \_\_\_\_\_

Title: \_\_\_\_\_

**NOTICE TO PROCEED**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

**PROJECT: Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds**

You are hereby notified to commence work in accordance with the Contract dated \_\_\_\_\_, 2022 on or before \_\_\_\_\_, 2022, and you are to complete the Work within \_\_\_\_\_ consecutive calendar days thereafter. The date of completion of all work is therefore \_\_\_\_\_, 2022.

**FAYETTEVILLE PUBLIC WORKS COMMISSION**

BY: \_\_\_\_\_  
Trent K. Ensley  
Procurement Manager

***ACCEPTANCE OF NOTICE***

Receipt of the above NOTICE TO PROCEED is hereby acknowledged this the \_\_\_\_\_ day of \_\_\_\_\_, 2021.

**Contractor**

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_



**NORTH CAROLINA BID BOND**

KNOW ALL MEN BY THESE PRESENT, THAT WE \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, who is duly licensed to act as Surety in North Carolina, are held and firmly bound unto the Fayetteville Public Works Commission of, Fayetteville, North Carolina, as Obligee, in the penal sum of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_) (5% Bid Bond), lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these present.

SIGNED, Sealed and dated this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

WHEREAS, the said Principal is herewith submitting Proposal for

**Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds**

and the Principal desires to file this Bid Bond in lieu of making the cash deposit as required by GS 143-129 amended in Chapter 1104 of the Public Laws of 1951.

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION is such that if the Principal shall be awarded the Contract for which the bid is submitted and shall execute the Contract within ten (10) days after the award of same to the Principal, then this obligation shall be null and void; but if the Principal fails to so execute such Contract as required by GS 143-129, as amended by Chapter 1104 of the Public Laws of 1951, the Surety shall, upon demand, forthwith pay to the Obligee the amount set forth in the first paragraph hereof, and upon failure to forthwith make such payment, the Surety shall pay the Obligee an amount equal to double the amount of this Bid Bond as set forth in the first paragraph herein. Power of Attorney from the Surety to its Attorney-in-Fact is attached hereto.

\_\_\_\_\_  
Principal

By \_\_\_\_\_  
(SEAL)

\_\_\_\_\_  
Corporate Surety

By \_\_\_\_\_  
(SEAL)

**PERFORMANCE BOND**

Date of Contract: \_\_\_\_\_

Date of Execution: \_\_\_\_\_

Name/Address of Principal: \_\_\_\_\_  
(Contractor)

Name/Address of Surety: \_\_\_\_\_

Name of Contracting Body: Fayetteville, Public Works Commission  
Fayetteville, North Carolina

Amount of Bond (Printed): \_\_\_\_\_

**Project: Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds**

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above-named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into a certain contract with the Contracting Body, identified as shown above and hereto attached:

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**Executed in \_ counterparts.**

Witness  
:

CONTRACTOR

\_\_\_\_\_  
(Trade or Corporate Name)

\_\_\_\_\_  
(Proprietorship or Partnerships)

\_\_\_\_\_

Attest:

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Owner, Partner, or Corporate  
President or V-President,  
Only)

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Corp Secretary or Assistant Secretary Only)

**(Corporate Seal)**

Surety Company

Witness:

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Attorney in Fact)

Countersigned:

\_\_\_\_\_

\_\_\_\_\_

(N.C. Licensed Resident Agent)

**(Surety Corporate Seal)**

(Name and Address - Surety Agency)

\_\_\_\_\_

\_\_\_\_\_

(Surety Company Name and NC  
Regional or Branch Office Address)



\_\_\_\_\_  
Attest:

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Owner, Partner, or Corporate  
President or V-President,  
Only)

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Corp Secretary or Assistant Secretary Only)

**(Corporate Seal)**

Surety Company

Witness:

By: \_\_\_\_\_

Title: \_\_\_\_\_

(Attorney in Fact)

Countersigned:

\_\_\_\_\_

**(Surety Corporate Seal)**

\_\_\_\_\_

(N.C. Licensed Resident Agent)

\_\_\_\_\_

\_\_\_\_\_

(Name and Address - Surety Agency)

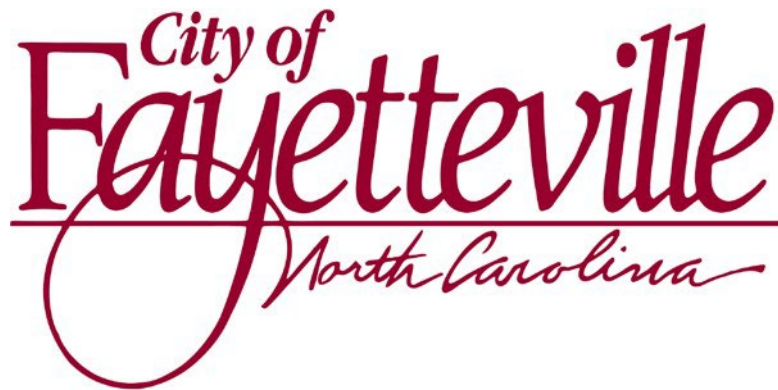
\_\_\_\_\_

\_\_\_\_\_

(Surety Company Name and NC

Regional or Branch Office Address)





**CITY OF FAYETTEVILLE**

**SMALL DISADVANTAGED BUSINESS  
ENTERPRISE PROGRAM  
FOR  
CONSTRUCTION, PROCUREMENT, AND  
PROFESSIONAL SERVICES**

**FAYETTEVILLE CITY COUNCIL  
433 HAY STREET  
FAYETTEVILLE, NORTH CAROLINA 28301**

**SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM**

**TABLE OF CONTENTS**

	<u>Page</u>
I. Applicability 1	
II. Definitions 1	
III. SDBE Program Administration.....	4
IV. Race- and Gender-Neutral Measures to Ensure Equal Opportunities For All Bidders/Participants .....	5
V. SDBE Program Eligibility.....	6
VI. SDBE Goal Setting .....	7
VII. Counting Participation of SDBEs.....	7
VIII. Procurement of Architectural, Engineering and Surveying Services .....	8
IX. Informal Construction and Repair Work.....	8
X. Formal Construction and Repair Work .....	8
XI. Contract Performance Compliance Procedures.....	10
XII. Protest Procedure .....	12
XIII. Dispute Resolution.....	12
XIV. Penalties 12	
XV. Program Review 13	



## SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

### I. Applicability.

(a) This program shall apply to all construction and repair work involving the expenditure of City funds, regardless of the sources of other funds, in the amounts set forth in G.S. 143-129 and G.S. 143-131; this program shall also apply to the procurement of architectural, engineering and surveying services as outlined in G.S. 143-64.31. This program shall not apply to contracts established by the State or any agency of the State.

(b) If any section, subsection, clause or provision of this chapter, including those groups found to be presumptively socially disadvantaged, is held to be invalid by a court of competent jurisdiction, the remainder of the chapter shall not be affected by such invalidity.

### II. Definitions.

As used in this part, the following terms shall have the following meanings:

*Affiliation* - One firm controls or has the power to control the other, or a third party or parties controls or has the power to control both, or an identity of interests exists between such firms. In determining whether firms are Affiliates, the City shall consider all appropriate factors, including common ownership, common management, and contractual relationships. Affiliates must be considered together in determining whether a firm is a Small Business Enterprise.

*Bidder/Participant* - Any person, firm, partnership, corporation, limited liability company, association or joint venture seeking to be awarded a public contract or subcontract.

*Brokering* - Filling orders by purchasing or receiving supplies from a third party supplier rather than out of existing inventory, and providing no Commercially Useful Function other than acting as a conduit between a supplier and a customer.

*City* - The awarding authority for contracts awarded by the City of Fayetteville and the City of Fayetteville Public Works Commission.

*City's Marketplace* - The geographic and procurement areas in which the City contracts on an annual basis.

*Commercially Useful Function* - Responsibility for the execution of a distinct element of the work of the contract which is carried out by actually performing, managing, and supervising the work involved, or fulfilling responsibilities as a joint venture.

*Contract* - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment or services and obligating the buyer to pay for them, not including leases or emergency procurements.

*Doing Business* - Having a physical location from which to engage in for profit activities in the scope(s) of expertise of the firm.

*Economically Disadvantaged* - An individual whose Personal Net Worth is less than the amount identified in 49 CFR Part 26

*Equipment* - Materials, supplies, commodities and apparatuses.

*Expertise* - Demonstrated skills, knowledge, or ability to perform in the field of endeavor in which certification is sought by the firm as defined by normal industry practices, including licensure where required.

*Good Faith Efforts* - Actions undertaken by a Bidder/Participant to achieve a SDBE goal which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the Program's requirements.

*Joint Venture* - An association of two or more persons, or any combination of types of business enterprises and persons numbering two or more, proposing to perform a single for profit business enterprise, in which each joint venture partner contributes property, capital, efforts, skill and knowledge, and in which the SDBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture is commensurate with its ownership interest. Joint ventures must have an agreement in writing specifying the terms and conditions of the relationships between the partners and their relationship and responsibility to the contract.

*Managers* - The City Manager.

*Manufacturer* - A firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

*Personal Net Worth* - The net value of the assets of an individual after total liabilities are deducted. An individual's Personal Net Worth does not include the individual's ownership interest in an applicant or the individual's equity in his or her primary place of residence. An individual's Personal Net Worth includes only his or her share of assets held jointly with the individual's spouse.

*Program* - The SDBE Program.

*Project Specific Goal* - The Goal established for a particular project or contract based upon the availability of SDBEs in the scopes of work of the Contract.

*Regular Dealer* - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a Regular Dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A firm may be a Regular Dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business if the firm both owns and operates distribution equipment for the products. Any supplementing of a Regular Dealer's distribution equipment shall be by a long-term lease agreement and not on an *ad hoc* or contract-by-contract basis. Packagers, manufacture representatives, or other persons who arrange or expedite transactions are not Regular Dealers.

*Schedule of Participation* - The list of SDBEs that the Bidder/Participant commits will be utilized, their scopes of the work, and dollar value or the percentage of the project they will perform.

*Socially Disadvantaged* - An individual who has been subjected to racial or ethnic prejudice or cultural bias within American society because of his or her identity as a member of a group and without regard to individual qualities. Social disadvantage must stem from circumstances beyond the individual's control. A Socially Disadvantaged individual must be a citizen or lawfully admitted permanent resident of the United States who is either:

- (a) A person whose lifelong cultural and social affiliation is with one of the following groups, which are rebuttably presumed to be Socially Disadvantaged:
  - (i) Blacks/African - Americans (persons having origins in any of the Black racial groups of Africa);
  - (ii) Hispanic - Americans (persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race);

- (iii) Native - Americans (persons having origins in the original groups of North America);
  - (iv) Asian - Americans (persons having origins in any of the original groups of the Far East, Southeast Asia, the islands of the Pacific or the Indian Subcontinent);
  - (v) Women; or
- (b) Any socially disadvantaged individual as defined by 15 U.S.C. 637.

*Small Disadvantaged Business Enterprise (SDBE)* - Means a business, including a sole proprietorship, partnership, corporation, limited liability company, joint venture or any other business or professional entity:

- (a) Which is at least 51 percent owned by one or more Socially and Economically Disadvantaged individuals, or in the case of a publicly owned business, at least 51 percent of all classes of the stock of which is owned by one or more Socially and Economically Disadvantaged individuals;
- (b) Whose management, policies, major decisions and daily business operations are independently managed and controlled by one or more such Socially and Economically Disadvantaged individuals;
- (c) Which is a Small Business Enterprise as defined by 13 CFR Part 121;
- (d) Which is Doing Business in the City's Marketplace; and
- (e) Which is certified as a SDBE by the City of Fayetteville.

*SDBE Program Coordinator* - The person designated by the Managers to administer the Program.

### **III. SDBE Program Administration.**

The Coordinator shall administer the SDBE Program, which duties shall include:

- (a) Formulating, proposing, and implementing rules and regulations for the further development, implementation, and monitoring of the Program.
- (b) Informing SDBEs of City contracting opportunities through outreach activities.
- (c) Providing information and assistance to SDBEs relating to City procurement practices and procedures, and bid specifications, requirements, and prerequisites.
- (d) Certifying businesses as SDBEs, maintaining certification records, and ensuring that all City departments have current certification listings.
- (e) Establishing Project Specific Goals.
- (f) Evaluating Bidder/Participant's achievement of Project Specific Goals or Good Faith Efforts to meet Project Specific Goals.
- (g) Working with City departments to monitor Contracts to ensure prompt payments to SDBEs, compliance with Project Specific Goals and commitments and the Program's operations and objectives.
- (h) Receiving, reviewing, and acting upon complaints and suggestions concerning the Program.

- (i) Collecting data to evaluate the Program.
- (j) Monitoring the Program and reporting to the Managers, the Mayor and the City Council on the administration and operations of the Program.

**IV. Race- and Gender-Neutral Measures to Ensure Equal Opportunities for All Bidders/Participants.**

The City shall develop and use measures to facilitate the participation of all firms in City contracting activities. These measures shall include, but are not limited to:

- (a) Arranging solicitation times for the presentations of bidding opportunities, which includes quantities, specifications and delivery schedules so as to facilitate the participation of interested firms.
- (b) Dividing requests for bids or proposals into work elements to facilitate the participation of small firms.
- (c) Providing timely information on specific contracting opportunities, contracting procedures, and bid preparation.
- (d) Holding pre-bid conferences, where appropriate, to explain the projects.
- (e) Enforcing prompt payment requirements and procedures, including requiring by contract that prime contractors promptly pay subcontractors.
- (f) Reviewing bonding and insurance requirements to eliminate unnecessary barriers to contracting with the City.
- (g) Maintaining information on all firms bidding on City prime contracts and subcontracts.

**V. SDBE Program Eligibility.**

- (a) Only businesses that meet the criteria of SDBEs may participate in the Program.
- (b) The City shall apply the certification criteria and procedures of 49 CFR Part 26 to applicants for participation in the Program.
- (c) The City shall certify the eligibility of joint ventures involving SDBEs and non-SDBEs.
- (d) In lieu of conducting its own certifications, the Coordinator may accept formal certifications by other entities as meeting the requirements of the Program, if the eligibility standards of such entities are comparable to those of the City. Certification decisions, including decertification and graduation determinations, by those other entities shall be accepted by the City in its discretion.
- (e) It is the responsibility of the SDBE to notify the Coordinator of any change in its circumstances affecting its continued eligibility for the Program. Failure to do so may result in the firm's decertification.
- (f) A SDBE may be decertified if it submitted inaccurate, false, or incomplete information to the City or failed to comply with requirements of a contract with the City or with the requirements of the Program.
- (g) A third party may challenge the eligibility of a certified firm:
  - (1) The challenge shall be made in writing under oath and shall include all information relied upon by the challenging party.

- (2) The Coordinator shall provide an opportunity to the parties for an informal hearing. The parties may appear and provide documentation or other evidence and be represented by counsel.
  - (3) The Coordinator shall render a written decision within 15 days of the hearing.
  - (4) If the Coordinator determines that the firm is not eligible, it may appeal the determination to the Manager in writing within 7 days of receipt of the written decision. The challenging party shall have no right of appeal from the Coordinator's determination.
  - (5) The Manager shall issue a written decision within 15 days of receipt of the appeal. The Manager's determination shall be final.
- (h) A firm that has been decertified may not reapply for certification for one year from the effective date of its decertification.

## **VI. SDBE Goal Setting.**

The Coordinator shall establish a Project Specific Goal for appropriate Contracts based on normal industry practice as determined in consultation with the appropriate Department, the availability of SDBEs to perform the functions of the Contracts and the City's utilization of SDBEs to date.

## **VII. Counting Participation of SDBEs.**

(a) The entire amount of that portion of a construction Contract that is performed by the SDBE's own forces shall be counted, including the cost of equipment obtained by the SDBE for the work of the Contract, and equipment purchased or leased by the SDBE (except equipment the SDBE subcontractor or Joint Venture partner purchases or leases from the prime contractor or its Affiliate).

(b) The entire amount of fees or commissions charged by a SDBE for providing a *bona fide* service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of the Contract, shall be counted, provided the fee is reasonable and not excessive as compared with fees customarily charged for similar services.

(c) When a SDBE performs as a participant in a Joint Venture, only the portion of the total dollar value of the Contract equal to the distinct, clearly defined portion of the work of the Joint Venture's Contract that the SDBE performs with its own forces and for which it is separately at risk shall be counted.

(d) Only expenditures to a SDBE that is performing a Commercially Useful Function shall be counted. To determine whether a firm is performing a Commercially Useful Function, the City will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the Contract is commensurate with the work it is actually performing and other relevant factors. To perform a Commercially Useful Function, the SDBE must be responsible, with respect to equipment used on the Contract, for negotiating price, determining quality and quantity, ordering the material, installing (where applicable) and paying for the material itself. A SDBE does not perform a Commercially Useful Function if its role is limited to that of an extra participant in the Contract through which funds are passed in order to obtain the appearance of SDBE participation. If a SDBE subcontracts a greater portion of the work of a Contract than would be expected on the basis of normal industry practice, it is presumed not to perform a Commercially Useful Function. When a SDBE is presumed not to be performing a Commercially Useful Function, the SDBE may present evidence to rebut this presumption.

(e) One hundred percent of the cost of the materials or supplies obtained from a SDBE Manufacturer or Regular Dealer shall be counted. One hundred percent of the fees or transportation charges for the delivery of materials or supplies required on a job site shall be counted only if the payment of such fees is a customary industry

practice and are commensurate with fees customarily charged for similar services. The cost of the materials and supplies shall not be counted.

(f) If a firm is decertified during performance of a Contract, the dollar value of work performed under a Contract with that firm after it has been decertified shall not be counted.

(g) In determining achievement of a Project Specific Goal, the participation of a SDBE shall not be counted until that amount has been paid to the SDBE.

#### **VIII. Procurement of Architectural, Engineering and Surveying Services (G.S. 143-64.31)**

(a) The City shall use good faith efforts to notify minority firms of the opportunity to submit qualifications for architectural, engineering, surveying and construction management at risk services.

#### **IX. Informal Construction and Repair Work (G.S. 143-131)**

(a) The City shall solicit minority participation for construction and repair projects in the amount of five thousand dollars (\$5,000) or more, but less than three hundred thousand dollars (\$300,000). The City shall maintain a record of contractors solicited and shall document efforts to recruit minority business participation in these contracts.

#### **X. Formal Construction and Repair Work (G.S. 143-129)**

(a) For all solicitations, the Bidder/Participant shall submit a Schedule of Participation detailing all subcontractors from which the Bidder/Participant solicited bids or quotations, and if a Project Specific Goal has been established, its achievement of the Goal or its Good Faith Efforts to do so. The list of SDBEs provided by the City to a Bidder/Participant establishes the minimum universe from which a Bidder/Participant must solicit SDBEs. The Schedule of Participation shall be due at the time set out in the solicitation documents.

(b) Any agreement between a Bidder/Participant and a SDBE in which the Bidder/Participant requires that the SDBE not provide subcontracting quotations to other bidders/proposers is prohibited.

(c) SDBEs shall respond to relevant requests for quotations.

(d) Where the Bidder/Participant cannot achieve the Project Specific Goal, the Coordinator will determine whether the Bidder/Participant has made Good Faith Efforts. At a minimum, the Bidder/Participant must engage in the following Good Faith Efforts that total at least 50 points for the bid or proposal to be responsive.

(1) Contacting SDBEs from the list provided by the City at least ten days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. The Bidder/Participant shall provide interested SDBEs with timely, adequate information about the plans, specifications, and requirements of the Contract to allow SDBEs to respond to the solicitation. The Bidder/Participant must follow up initial solicitations with interested SDBEs. 10 points.

(2) Providing or making the construction plans, specifications, and requirements available for review by SDBEs at least ten days before the bid or proposals are due. 10 points.

(3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. 15 points.

(4) Working with SDBE, minority, women, trade, community or contractor organizations identified by the City in the bid documents that provide assistance in recruitment of SDBEs. 10 points.

(5) Attending any prebid meetings scheduled by the City. 10 points.

- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. 20 points.
- (7) Negotiating in good faith with interested SDBEs and not rejecting them as unqualified without sound reasons based on their capabilities. Evidence of such negotiation includes the names, addresses, and telephone numbers of SDBEs that were contacted; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and why agreements could not be reached with SDBEs. The Bidder/Participant may not reject SDBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection of a SDBE based on price or lack of qualifications must be documented in writing. 15 points.
- (8) Providing assistance to an otherwise qualified SDBE in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting SDBEs in obtaining the same unit pricing with the bidder's suppliers in order to help minority SDBEs to establish credit. 25 points.
- (9) Negotiating joint venture and partnership arrangements with SDBEs to increase opportunities for SDBE participation. 20 points.
- (10) Providing quick pay agreements and policies to enable SDBEs to meet cash-flow demands. 20 points.

(e) In determining whether a Bidder/Participant has made Good Faith Efforts, the performance of other bidders/proposers in meeting the Project Specific Goal may be considered. For example, when the apparent successful Bidder/Participant fails to meet the Project Specific Goal but others meet it, it may be reasonably questioned whether, with additional reasonable efforts, the apparent successful Bidder/Participant could have met the Goal. Similarly, if the apparent successful Bidder/Participant fails to meet the Goal, but meets or exceeds the average SDBE participation obtained by other bidders/proposers, this may be evidence that the apparent successful Bidder/Participant made Good Faith Efforts.

(f) The Coordinator shall timely review the Schedule of Participation prior to award, including the scope of work and the letters of intent from SDBEs. The Coordinator may request clarification in writing of items listed in the Schedule of Participation, provided such clarification shall not include the opportunity to augment listed SDBE participation or Good Faith Efforts.

(g) The Schedule of Participation and supporting documents shall be reviewed by a Bid Selection Committee, composed of the operating departments, Purchasing Department, Coordinator and other representatives as appropriate. If the Bid Selection Committee initially determines the bid to be responsive, it shall recommend award of the Contract to the Managers. If the Bid Selection Committee determines the bid to be non-responsive, it shall confer with the City Attorney prior to recommending the rejection of the bid.

(h) A Bidder/Participant found to be non-responsive may appeal this determination pursuant to the City's bid protest procedures.

## **XI. Contract Performance Compliance Procedures.**

(a) Upon award of a Contract by the City that includes a Project Specific Goal, the Goal becomes a covenant of performance by the Bidder/Participant in favor of the City.

(b) The Bidder/Participant shall provide a listing of all subcontractors to be used in the performance of the Contract, and subcontractor payment information to the City with each request for payment submitted to the City. The Coordinator and the operating department shall monitor subcontractor participation during the course of the Contract and shall have reasonable access to all Contract-related documentation held by the Bidder/Participant. The Bidder/Participant shall submit reports at such times and in such formats as requested by the City.

- (c) The Bidder/Participant shall cooperate with the City in studies and surveys related to the Program.
- (d) The Bidder/Participant cannot make changes to the Schedule of Participation or substitute subcontractors named in the Schedule of Participation without the prior written approval of the Coordinator. Unauthorized changes or substitutions shall be a violation of this program, and may constitute grounds for rejection of the bid or proposal or cause termination of the executed Contract for breach, the withholding of payment and/or subject the Bidder/Participant to Contract penalties or other sanctions.
- (1) All requests for changes or substitutions of the subcontractors named in the Schedule of Participation shall be made to the Coordinator in writing, and shall clearly and fully set forth the basis for the request. A Bidder/Participant shall not substitute a subcontractor or perform the work designated for a subcontractor with its own forces unless and until the Coordinator approves such substitution in writing.
- (2) The facts supporting the request must not have been known nor reasonably should have been known by either party prior to the submission of the Schedule of Participation. Bid shopping is prohibited.
- (3) Substitutions of the subcontractor shall be permitted only on the following basis:
- (i) Unavailability after receipt of reasonable notice to proceed.
  - (ii) Failure of performance.
  - (iii) Financial incapacity.
  - (iv) Refusal by the subcontractor to honor the bid or proposal price.
  - (v) Mistake of fact or law about the elements of the scope of work of a solicitation where agreement upon a reasonable price cannot be reached.
  - (vi) Failure of the subcontractor to meet insurance, licensing, or bonding requirements; or
  - (vii) The subcontractor's withdrawal of its bid or proposal.
- (4) Where the Bidder/Participant has established the basis for the substitution to the satisfaction of the Coordinator, the Bidder/Participant shall make Good Faith Efforts to fulfill the Schedule of Participation if the Project Specific Goals will not otherwise be met. The Bidder/Participant may seek the assistance of the SDBE Office in obtaining a new SDBE subcontractor. If the Project Specific Goal cannot be reached and Good Faith Efforts have been made, the Bidder/Participant may substitute with a non-SDBE.
- (e) If a Bidder/Participant plans to hire a subcontractor on any scope of work that was not previously disclosed in the Schedule of Participation, the Bidder/Participant shall obtain the approval of the Coordinator to modify the Schedule of Participation and must make Good Faith Efforts to ensure that SDBEs have a fair opportunity to bid on the new scope of work.
- (f) The SDBE Compliance Committee, comprised of the Coordinator as the Chair and a representative from the Purchasing Department or any requested representative, shall be responsible for evaluating and reviewing issues and concerns concerning the Program, including whether a Bidder has complied with the Good Faith Efforts.
- (g) If the Bidder/Participant is found to be in noncompliance with the Program or the Contract and fails to correct such noncompliance within ten working days after written notification, the City will withhold 5



percent of the amount of completed work on all monthly payments until the Bidder/Participant has come into compliance.

## **XII. Protest Procedure.**

A Bidder/Participant may protest a decision regarding the implementation of the Program, including the determination that it has not made Good Faith Efforts, by filing a written grievance with supporting evidence with the Coordinator. The Coordinator shall provide a written response within ten working days of receipt of the grievance. The Bidder/Participant may appeal the Coordinator's determination in writing within ten working days of receipt to the Purchasing Director. The Director shall refer the grievance to the SDBE Compliance Committee, which shall hold a hearing and issue a written recommendation within ten working days. The Manager, upon receipt of the SDBE Compliance Committee's recommendation, shall make a final determination within ten working days.

## **XIII. Dispute Resolution.**

Notwithstanding the protest procedures outlined above, mediation shall be required for all parties involved in a dispute under this program prior to initiating litigation concerning the dispute. The procedures for mediation shall be those adopted by City Council Resolution #2002-066 which is incorporated herein by reference as if fully set forth herein.

## **XIV. Penalties.**

(a) Providing false or misleading information to the City in connection with an application for or challenge to certification, recertification or decertification as a SDBE, submission of a bid, responses to requests for qualifications or proposals, Good Faith Efforts documentation, post-award compliance, or other actions in violation of this program may render any bid award or contract void. A contract that is void under this section may continue in effect until an alternative can be arranged when immediate termination would result in harm to the public health or welfare.

(b) A Bidder/Participant is subject to withholding of payments under the Contract, termination of the Contract for breach, Contract penalties, decertification as a SBDE, or being barred or deemed non-responsive in future City solicitations and Contracts for up to two years, if it is found to have:

- (1) Provided false or misleading information in connection with the submission of a bid or proposal or documentation of Good Faith Efforts, post-award compliance, or other Program operations.
- (2) Failed in bad faith to fulfill the Project Specific Goal, thereby materially breaching the Contract.
- (4) Repeatedly failed to comply in good faith with substantive provisions of this program.

(c) The City reserves the right to pursue all remedies available in law or in equity for violations of this program.

## **XV. Program Review.**

(a) The Managers, the Mayor, and the City Council shall receive an annual report from the Coordinator detailing the City's performance under the Program.

(b) The Managers, the Mayor, and the City Council will review this report, including the City's progress towards eliminating discrimination in its contracting activities and marketplace, and revise the Program as necessary to meet legal and Program requirements.

(c) If the Managers, the Mayor, and the City Council find that the objectives of the Program have been achieved, the City Council shall sunset the Program.

**CITY OF FAYETTEVILLE  
AND  
FAYETTEVILLE PUBLIC WORKS COMMISSION  
SDBE/HUB COMPLIANCE PROVISIONS**

**SDBE/HUB CONTRACT PROVISIONS**

**APPLICATION:**

The requirements of the Small Disadvantaged Business Enterprise Program (“SDBE”) for participation in the City of Fayetteville’s construction contracts are hereby made a part of the Contract Documents. These requirements shall apply to all contracts regardless of ownership. Copies of the SDBE may be obtained from:

Fayetteville Public Works Commission  
Procurement Department/Trent Ensley  
P.O. Box 1089 Fayetteville, North Carolina 28302  
Phone (910) 223-4333 Fax (910) 483-1429 e-mail: [trent.ensley@faypwc.com](mailto:trent.ensley@faypwc.com)

NCDOT DBE Directory: [www.ebs.nc.gov/VendorDirectory](http://www.ebs.nc.gov/VendorDirectory)  
HUB Directory <https://ncadmin.nc.gov/businesses/hub>

**SDBE COMPLIANCE REQUIREMENTS**

1. The Bidder shall provide **with the Bid** the properly executed SDBE documents identified below, which signifies that the Bidder understands and agrees to the incorporated SDBE requirements and provisions.
2. The Bidder shall provide **with the bid:**

**Provided with Bid Form Proposal**

Identification of SDBE/HUB Participation Form  
**AND**  
Affidavit A: Listing of Good Faith Efforts

**OR**

Identification of SDBE/HUB Participation Form  
**AND**  
Affidavit B: Intent to Self-Perform with Own Workforce

**Provided upon being presented with Notice of Award**

Affidavit C: Percentage of SDBE/HUB Participation  
**OR**  
Affidavit D: Good Faith Efforts

All written statements, certifications, or intentions made by the Bidder shall become a part of the Agreement between the Contractor and the City of Fayetteville, by and through the Fayetteville Public Works Commission (“PWC”) for performance of the Work. Failure to comply with any of these statements, certifications, intentions, or the SDBE compliance provisions shall constitute a breach of contract. Any such breach may result in termination of the Agreement in accordance with the termination provisions contained in the Contract Documents.

**SUBCONTRACTOR PAYMENT REQUIREMENTS:**

North Carolina General Statutes (“NCGS”) 143-134.1 states that the percentage of retainage on payments made by the prime contractor to the subcontractor shall not exceed the percentage of retainage on payments made by PWC to the prime contractor. Failure to comply with this provision shall be considered a breach of contract, and the Agreement may be terminated in accordance with the termination provisions of the Contract Documents.

The Contractor shall provide an itemized statement of payments to each SDBE subcontractor before final payment is processed.

The Contractor shall provide an itemized statement of payments to each non-SDBE subcontractor before final payment is processed.

Date: \_\_\_\_\_

\_\_\_\_\_  
(Name of Company)

\_\_\_\_\_  
(Signature)

Attest: \_\_\_\_\_

\_\_\_\_\_  
(Above Name Typed or Printed)

\_\_\_\_\_  
(Title)

**Affidavit A: Listing of the Good Faith Efforts**

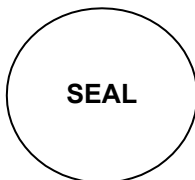
Affidavit of \_\_\_\_\_  
(Name of Bidder)

**I have made a good faith effort to comply under the following areas checked:**  
*(A minimum of 50 value points must be checked in order to have achieved a "good faith effort")*

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. Value = Ten (10) points.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due. Value = Ten (10) points.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. Value = Fifteen (15) points.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses. Value = Ten (10) points.
- (5) Attending any pre-bid meetings scheduled by the public owner. Value = Ten (10) points.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. Value = Twenty (20) points.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing. Value = Fifteen (15) points.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. Value = Twenty-five (25) points.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible. Value = Twenty (20) points.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. Value = Twenty (20) points.

In accordance with NCGS 143-128.2(d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Small Disadvantaged Business Participation schedule conditional upon execution of a contract with PWC. Failure to abide by this statutory provision will constitute a breach of contract. The undersigned hereby certifies that he or she has read the terms of the SDBE commitment and is authorized to bind the Bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_



State of North Carolina, County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_  
Notary Public \_\_\_\_\_  
My commission expires \_\_\_\_\_

**Affidavit B: Intent to Perform Contract with Own Workforce**

Affidavit of \_\_\_\_\_  
(Name of Bidder)

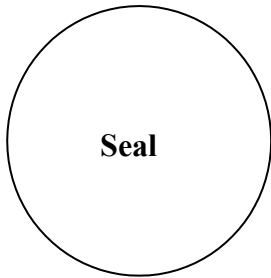
I hereby certify that it is our intent to perform 100% of the work required for the following Project: \_\_\_\_\_

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type Project; normally performs, has the capability to perform, and will perform **all elements of the Work** on this Project with his/her own current work forces; and will complete all elements of the Project **without** the use of subcontractors, material suppliers, or providers of professional services.

The Bidder agrees to provide any additional information or documentation requested by PWC in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_



Signature: \_\_\_\_\_

Title: \_\_\_\_\_

State of North Carolina, County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_ day of \_\_\_ 20 Notary  
Public \_\_\_\_\_  
My commission expires \_\_\_\_\_

**\*THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL\***

**Affidavit C: Percentage of SDBE/HUB Participation**

If the portion of the work to be executed by SDBE/HUB as defined in NCGS 143-128.2(g) is **equal to or greater than 10% of the Bidders total Contract Price**, then the Bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive Bidder within **72 hours** after notification of being low Bidder.

Affidavit of \_\_\_\_\_ . I do certify that on the  
(Name of Company)

\$

(Project Number)

(Dollar Amount of Total Bid)

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the Contract Price with small disadvantaged business enterprises. Such companies or individuals will be employed as subcontractors, vendors, or providers of professional services. Such work will be subcontracted to the following firms listed below.

Name, Address and Phone No.	*SDBE HUB Category	Description	Dollar Value	% of Contract

\*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

\*HUB Statewide Uniform Certification (SWUC)

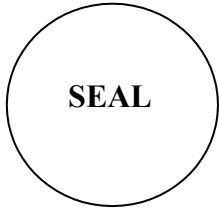
Pursuant to NCGS 143-128.2(d), the undersigned will enter into a formal agreement with small disadvantaged firms for work listed in this schedule conditional upon execution of a contract with PWC. Failure to fulfill this commitment may constitute a breach of contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the Bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_



State of North Carolina, County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_ 20 Notary  
Public \_\_\_\_\_  
My commission expires \_\_\_\_\_



**\*THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL\***

**Affidavit D: Good-Faith Efforts**

If the goal of 10% participation by small disadvantaged businesses **is not** achieved, the Bidder shall provide the following documentation to PWC of good faith efforts.

Name, Address and Phone No.	*SDBE/HUB Category	Description	Dollar Value

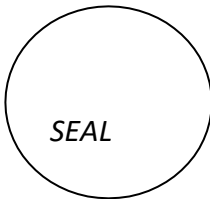
\*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

\*HUB Statewide Uniform Certification (SWUC)

Documentation of the Bidder’s good-faith efforts to meet the goals set forth in these provisions. Examples of documentation shall include the following evidence:

- A. Copies of solicitations for quotes to small disadvantaged business firms. Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a small disadvantaged business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to small disadvantaged businesses, community or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for small disadvantaged businesses.
- H. Letter detailing reasons for rejection of a small disadvantaged business due to lack of qualification.
- I. Letter documenting proposed assistance offered to small disadvantaged businesses in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the Bid and award to the next lowest responsible and responsive Bidder.



Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

State of North Carolina, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_ 20 Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

**\*THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL\***

**Affidavit E: SDBE/HUB Contract Payments:**

Contractor: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Address: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Pay Application #: \_\_\_\_\_ Period: \_\_\_\_\_

The following is a list of payments to be made to small disadvantaged business enterprises on the Project for the above-referenced period:

<b>Firm Name and Address</b>	<b>*SDBE/HUB Category</b>	<b>Payment Amount</b>	<b>Owner Use Only</b>

\*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)  
\*HUB Statewide Uniform Certification (SWUC)

Date: \_\_\_\_\_ Approved/Certified By: \_\_\_\_\_  
Name  
Title  
Signature

**\*\*SUBCONTRACTOR DOCUMENTS:  
MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT\*\*  
Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid**

**Identification of Small Disadvantaged Business Participation**

I, \_\_\_\_\_ (Name of Bidder) do hereby certify that for the Project, we will use the following small disadvantaged business enterprises as construction subcontractors, vendors, suppliers, or providers of professional services:

Firm Name, Address and Phone No.	Description	*SDBE/HUB Category

\*SDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)  
\*HUB Statewide Uniform Certification (SWUC)

The total value of small disadvantaged business contracting will be (\$) \_\_\_\_\_.

**\*THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL\***

**Fayetteville Public Works Commission**  
**Subcontractor Disclosure Form: Non-SDBE/HUB Documentation for Payments**

Contractor: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Address: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Pay Application #: \_\_\_\_\_ Period: \_\_\_\_\_

The following is a list of payments to be made to subcontractors on this project for the above-mentioned period.

<b>Firm Name and Address</b>	<b>Payment Amount</b>	<b>Owner Use Only</b>

Date: \_\_\_\_\_

Submitted By: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

**\*\*SUBCONTRACTOR DOCUMENTS:  
MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT\*\***

**00 65 00 | CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE**

Project: **Re-Roofing Transfer & Thickening Building & Water & Electric Vehicle Sheds**

Owner: Fayetteville Public Works Commission, 955 Old Wilmington Road Fayetteville, NC 28301

Contractor: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contractor warrants and guarantees to Owner that all Work shall be in accordance with the Contract Documents and shall not be defective. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. Abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
2. Normal wear and tear under normal usage.

I, undersigned, do hereby warrant that all labor and material furnished, and work performed in conjunction with the above referenced project are in compliance with the Contract Documents and authorized modifications thereto, and will be free from defects due to defective materials or workmanship for a period of (1) year or a time as specified in the Contract Documents from the date of final completion.

This Warranty commences on \_\_\_\_\_ and expires on \_\_\_\_\_.

Should any defects develop during the warranty period due to improper material, workmanship, or arrangement, the same, including adjacent work displaced, shall be made good by the undersigned at no expense to the Owner.

The Owner will give Contractor written notice of defective work. Should the Contractor fail to correct defective work within thirty calendar (30) days after receipt of written notice, Owner may, at Owner's option, correct the defective Work and charge Contractor the cost of for such correction. Contractor agrees to pay such charges upon demand.

## 00 71 00 | DEFINITIONS AND TERMINOLOGY

### 1. DEFINED TERMS

- 1.01 Wherever used in the Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the defined terms below. Titles of other documents, sections, or forms also contain initial capital letters, but such titles are not terms, and are not defined here.
1. Addenda - Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the Bidding Requirements or the Contract Documents.
  2. Application for Payment - The form acceptable to Owner which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  3. Bid - The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  4. Bidder - The person, firm, or corporation who submits a Bid for Work directly to Owner.
  5. Bidding Requirements - The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.
  6. Bonds – Bid, Performance, and Payment bonds and other instruments of security.
  7. Business Day – has the meaning ascribed to it in the Agreement.
  8. Calendar Day – A “calendar day” shall constitute a period of 24 consecutive hours measured from midnight to the next midnight.
  9. Change In Work Delays - Delays due to changes in the Work that alters the original scope of the Contract and impacts the critical path (delays the controlling operation).
  10. Change Order - A document recommended by the PWC Project Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Contract.
  11. Change Order Request (COR) - A written document submitted by the Contractor requesting an adjustment to the Contract sum or an extension of the Contract time for approval by the Owner.
  12. Claim - A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
  13. Claim (Property Damage) - Any form of injury or damage caused to the property, either personal or real due to the negligence of the Contractor as detailed by claimant.
  14. Contract - The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral. The Contract is also referred to

- throughout the Contract Documents as the “Agreement.”
15. Contract Documents – has the meaning ascribed to it in the Agreement and consists of the combined bid documents (including, but not limited to, the Advertisement to Bidders, Instructions to Bidders, and Bid Forms technical specifications, contract drawings, and all addenda. Shop drawing submittals and the reports and drawings referred to Paragraphs 4.02 are not Contract Documents.
  16. Contract Price or Price - The monies payable by Owner to Contractor for completion of the Work in accordance with the Agreement, Contract Documents, and any executed Change Orders.
  17. Contract Time - The number of days or the dates stated in the Contract to complete the Work so that it is ready for final payment as evidenced by the PWC Project Engineer written recommendation of final payment.
  18. Contractor - The individual or entity with whom Owner has entered into the Contract.
  19. Critical Path - The sequence of activities in the schedule for which an adjustment in the duration of any activity results in a corresponding adjustment in the overall schedule duration.
  20. Drawings - The drawings which show the scope, extent and character of the Work to be furnished and performed by Contractor and which have been prepared or approved by the PWC Project Engineer and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.
  21. Defective - The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to the PWC Project Engineer recommendation of final payment.
  22. Effective Date of the Contract - The date indicated in the Contract on which it become effective.
  23. Excusable Delay – Any delay beyond the control and without the fault or negligence of Contractor caused by events or circumstances such as, but not limited to, acts of God or of public enemy, acts of government other than Owner, fires, floods, epidemics, quarantine restrictions, freight embargoes, hurricanes, tornadoes, unusually severe weather.
  24. Free Haul Limit – area within 2 miles of the project limits, one way.
  25. Hazardous Environmental Condition - The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.
  26. Hazardous Waste - The term Hazardous Waste shall have the meaning provided in the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
  27. Inexcusable Delay - Any delay caused either by (A) events or circumstances within the control of Contractor, such as inadequate manpower, slow submittals, etc., which might

have been avoided by the exercise of care, prudence, foresight, or diligence on the part of Contractor, or (B) labor disputes.

28. Laws and/or Regulations - Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
29. Liens - Charges, security interests, or encumbrances upon Project funds.
30. Liquidated damages – whose amount the parties designate during the formation of a contract for the injured party to collect as compensation upon a specific breach
31. Milestone - A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Final Completion of all the Work.
32. Notice of Award - The written notice by Owner to the bidder stating that upon timely compliance by the successful bidder with the condition's precedent listed therein, Owner will sign and deliver the Contract.
33. Notice to Proceed - A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
34. Non-Compliance Notice (NCN) – A written notice given by the Owner to Contractor indicting a violation in Contract Terms.
35. Owner - The public entity with whom Contractor has entered into the Contract and for whom the Work is to be provided. Owner is the City of Fayetteville, acting by and through its Fayetteville Public Works Commission, acting through its authorized representatives, primarily the Facilities Construction & Maintenance Department located at 955 Old Wilmington Road, Fayetteville, NC.
36. Partial Utilization - Use by Owner of a completed part of the Work for the purpose for which it is intended (or a related purpose) prior to completion of all the Work.
37. Owner's Consultant - An individual or entity having a Contract with the Owner to furnish services as the Owner's independent professional associate or consultant with respect to the Project.
38. Project - The Work to be performed under the Contract Documents.
39. PWC Project Coordinator - The authorized representative of the PWC Project Engineer who may be assigned to the Site or any part thereof.
40. PWC Project Engineer - Person assigned by Owner, to coordinate, manage, monitor, and shall administer the Contract and the Work. The PWC Project Engineer has the authority to approve any changes in scope of Work.
41. Recovery Plan - Documentation submitted by the Contractor describing when a project is anticipated be completed to include revisions to schedule and additional workforce.
42. Request for Information (RFI) - A written document from the Contractor to the PWC Project Engineer requesting clarification or information concerning the Contract Documents and/or the Contract Drawings.



43. Request for Proposal (RFP) - A written document from the Owner requesting the Contractor submit a proposal for work outside the scope of the Contract and its provisions.
44. Samples - Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
45. Shop Drawings/Submittals - All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
46. Site - Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
47. Specifications - That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.
48. Subcontractor - An individual or entity having a direct Contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
49. Supplemental Conditions - That part of the Contract Documents which amends or supplements the Contract Documents.
50. Supplier - A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct Contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.
51. Underground Facilities - All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
52. Weather Delays - Delays that affect the standard daily production of the contract 50% or more as established by the submitted baseline schedule, or the accepted amended schedule.
53. Work - The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
54. Work Change Directive - Work initiated in the field affecting Contract Price and/or Contract Times. The PWC Project Coordinator and/or the PWC Project Engineer may give Contractor directive to proceed with Work which shall be included in a

subsequent Change Order

## 2. TERMINOLOGY

2.01 The words and terms discussed in this Article do not have initial capital letters and are not considered defined terms. However, when used in the Bidding Requirements or Contract Documents, these words or terms have the meaning as indicated in this Article.

### Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of the PWC Project Engineer as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to the PWC Project Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the Contract Documents

### Day:

2. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
3. The word "business day" means a period of time from 8:00 a.m. to 5:00 p.m. within single calendar day, excluding Saturdays, Sundays, and all holidays observed by Owner.

### Defective:

4. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - c. has been damaged prior to Engineer’s recommendation of final payment

### Furnish, Install, Perform, Provide:

5. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
6. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services,

materials, or equipment complete and ready for intended use.

7. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
8. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

2.02 Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## 00 72 00 – GENERAL CONDITIONS

### PRELIMINARY MATTERS

#### 1.01 **Performance and Payment Bonds**

- A. The Contractor, at the time of the execution of the Contract shall be required to furnish a Performance Bond and Payment Bond in an amount equal to at least one hundred percent (100%) of the Contract Price as security for the faithful performance of the Agreement and as security for the payment of all persons performing labor and furnishing materials and equipment in connection with the Agreement in accordance with N.C.G.S..
- B. The corporate surety furnishing the bonds shall be authorized to do business in the State of North Carolina. All contract payment bonds and contract performance bonds shall be executed on the “Performance Bond” and “Payment Bond” forms provided in the Contract Documents (or attached thereto) and be countersigned by a regularly authorized agent of the corporate surety who is resident in North Carolina and who is licensed by the North Carolina Department of Insurance.
- C. In all Performance and Payment Bonds, the provision that no suit, action, or proceeding by reason of any default whatsoever shall be brought on this Bond after a specified number of months shall be fixed at twelve (12) months. The face value of the Bond shall be one hundred percent (100%) of the Contract Price for a period of twelve (12) months following the day when the last of the labor was performed, or equipment was furnished, or final settlement was made with the Contractor, whichever occurs last.
- D. Whenever the Surety or Sureties on the bond so furnished shall be deemed by the Commission to be insufficient or unsatisfactory, the Contractor, within ten (10) days after notice to that effect shall furnish and deliver a new bond to the Commission in the same penalty and on the same conditions with Surety satisfactory to the Commission and this duty shall continue on the part of the Contractor, whenever and so often as the Commission shall require a new bond with a satisfactory Surety or Sureties. If the Contractor shall fail to furnish such bond, within ten (10) days after said notice is mailed to its address, the Commission through its proper agent or agents, may stop all further work under said Contract and complete the unfinished work at the expense of the Contractor.

#### 1.02 **Insurance**

- A. The insurance required for this contract is as follows

1. Commercial General Liability ISO #CG 00 01 10 93: The Contractor shall take out and maintain during the life of this contract commercial general liability insurance with limits of \$1,000,000 per occurrence; \$2,000,000 aggregate other than products/completed operations; \$2,000,000 aggregate for products/completed.
2. Automobile Liability ISO #CA 00 01 12 93: The Contractor shall take out and maintain during the life of this contract automobile liability insurance in an amount not less than \$1,000,000 combined single limit per accident for bodily injury and property damage from owned, non-owned, and hired automobiles.
3. Workers' Compensation and Employers' Liability Insurance: The Contractor shall take out and maintain during the life of this contract workers' compensation insurance as required by the laws of the State of North Carolina and Employers' Liability with limits of \$100,000 each accident, \$500,000 policy limit and \$100,000 each employee for all employees employed on the project. In case any employee(s) engaged in work under this contract is or are not protected under the Workers' Compensation Statute, the Contractor shall provide adequate coverage for the protection of employees not otherwise protected.
4. Property Insurance: If contracted to construct a building, the Contractor shall purchase and maintain "Builder's Risk" insurance. This insurance shall include the interests of the Public Works Commission, the Contractor and Subcontractors and shall be written on a one hundred percent (100%) completed value basis (full value as of the date that all construction is finished and includes the Contractor's total cost plus profit), and to remain in force until the project is completed and accepted by the Public Works Commission.

Regardless of the nature of the work to be performed, coverage must also be provided for the theft or damage of building materials and supplies, which are not permanently attached and stored on site for any period of time. This coverage shall be an "Installation Floater," and where no building construction is involved, the amount of the coverage shall equal the value of the materials stored on site. It is the responsibility of the Contractor to inform the policy provider of any and all change orders, which increase the building's value. Any penalties or losses incurred due to the Contractor's failure to adequately insure the building during construction will be the Contractor's responsibility. Owner's and Contractor's Protective Liability I.S.O.#CG 00 09 10 93: The Contractor shall secure and maintain during the life of the contract, an Owner's and Contractor's Protective Liability insurance policy for the Public Works Commission, with minimum limits of \$1,000,000 per occurrence/\$2,000,000 aggregate.

#### B. Acceptability of Insurance

All insurance policies shall be written by insurers authorized to do business in North Carolina and meet the conditions set forth in the Agreement and these General Conditions. PWC shall have the discretion to determine the acceptability of Contractor's Insurance.

#### C. Additional Provision

As an integral part of this agreement, Contractor agrees to purchase and maintain during the life of this contract contractual liability insurance in the amount required in the general liability insurance requirements and to furnish proper evidence thereof.

D. Other Provisions

1. Any deductible or self-insured retention must be declared to and approved by the Public Works Commission.

2. The policies are to contain, or be endorsed to contain, the following provisions:

a. Commercial General Liability Coverage

- i. The Public Works Commission, its officials, employees and volunteers are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Public Works Commission, its officials, employees or volunteers.
- ii. The Contractor's insurance coverage shall be primary insurance as respects the Public Works Commission, its officials, employees and volunteers. Any insurance or self-insurance maintained by the Public Works Commission, its officials, employees or volunteers shall be excess of Contractor's insurance and shall not contribute with it.
- iii. Coverage shall state that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

b. All Coverages

- i. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to:

Fayetteville Public Works Commission  
Attn: Trent Ensley, Procurement Manager  
P.O. Box 1089  
Fayetteville, NC 28302-1089

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Public Works Commission, its officials, employees, and volunteers. In the event the Public Works Commission

is damaged by the failure of the Contractor to maintain such insurance and to so notify the Public Works Commission, the Contractor shall bear all reasonable costs properly attributable thereto.

c. Subcontractors

Contractor shall include all subcontractors as insurers under its policies OR shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

d. No Waiver of Immunity

Any insurance coverage required by the terms of this contract shall not be deemed a contract of insurance purchased by the Public Works Commission nor a waiver of the Public Works Commission's immunity pursuant to NCGS 160A-485.

**1.03 Copies of Documents**

- A. OWNER shall furnish to CONTRACTOR up to two (2) copies of these Contract Documents.

**1.04 Commencement of Contract Times; Notice to Proceed**

- A. The Contract Times will commence to run on the date specified in the issued Notice to Proceed.

**1.05 Starting the Work**

- A. CONTRACTOR shall start to perform the work on the date when the Contract Times commence to run as indicated on the Notice to Proceed. If the Contractor fails to start work within fifteen (15) calendar days of the commencement of Contract time the OWNER will consider the CONTRACTOR in violation of the Contract and terminate for cause in accordance with the provisions of the Contract.

**1.06 Before Starting Construction**

- A. CONTRACTOR's Review of Contract Documents: Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare these Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to PROJECT ENGINEER any conflict, error, ambiguity, or discrepancy, which CONTRACTOR may discover. The PROJECT ENGINEER shall obtain a written interpretation or clarification from DESIGN ENGINEER and provide CONTRACTOR written clarification. CONTRACTOR cannot proceed until a written response is received. However, CONTRACTOR shall not be liable to the OWNER, PROJECT ENGINEER, or DESIGN ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in these Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

- B. Interpretations of Contract Documents: On all plans, drawings, etc., the figured dimensions shall govern in case of any discrepancy between the scales and figures. The Contractor shall take no advantage of any error or omission in the Plans or of any discrepancy between the Plans and Specifications, and the PROJECT ENGINEER shall make any such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the Specifications and of the Plans as construed by him, and any decision by PROJECT ENGINEER shall be final.

#### **1.07 Pre-construction Conference**

- A. Prior to commencement of Work at the site, a pre-construction conference attended by OWNER, CONTRACTOR, DESIGN ENGINEER, PROJECT ENGINEER, and others shall be held. The OWNER will contact the CONTRACTOR to establish a mutually agreeable date and time to conduct the conference. The purpose of the conference is to discuss general project items, including, but not limited to:
  - 1. CONTRACTOR's responsible person and contact information
  - 2. Emergency contact information
  - 3. Submittal schedule
  - 4. Contract issues
  - 5. Safety
  - 6. Project schedule
  - 7. Progress Meetings
  - 8. Sales Tax Certificate/Pay Applications
  - 9. Warranty requirements
  - 10. Site restoration and clean-up

#### **1.08 Quality of Materials**

- A. The source of supply of each of the materials shall be approved by the PROJECT ENGINEER before delivery is started. Representative preliminary samples of the character and quality herein described shall be submitted by the CONTRACTOR when indicated or directed, for examination or test; and written approval of the quality of such materials from the respective sources of supply. Only materials conforming to the requirements of these Contract Documents shall be used in the Work. All materials proposed to be used may be inspected at any time during progress of the preparation and use. All materials shall be approved before being incorporated in the Work.

### **PART 2. CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**

#### **2.01 Intent**

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. The approved Drawings and Technical Specifications show the location, details, and dimensions of the Work, which shall be performed in strict accordance therewith. Any deviation from these Contract Documents will be determined by the PROJECT ENGINEER and authorized in writing.
- C. Any labor, documentation, services, materials, or equipment that is required to produce



the intended result shall be provided, whether or not specifically called for, at no additional cost to OWNER.

- D. Should any construction or conditions which are not covered by these Contract Documents be required for any proposed Work, "Special Conditions" for such Work will be provided to the CONTRACTOR and shall be considered a part of these Contract Documents the same as though printed fully herein. Should any such special provisions or requirements conflict with these Contract Documents, the "Special Conditions" shall take precedence.

## **2.02 Reference Standards**

- A. Standards, Specifications, Codes, Laws, and Regulations
  - 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in these Contract Documents.
  - 2. No provisions of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR, PROJECT ENGINEER or DESIGN ENGINEER, or any of their Subcontractors, consultants, agents, or employees from those set forth in these Contract Documents, nor shall it be effective to assign to OWNER, PROJECT ENGINEER or DESIGN ENGINEER, or any other of PROJECT ENGINEER or DESIGN ENGINEER's consultants, agents, or employees any duty or authority to undertake responsibility inconsistent with the provisions of these Contract Documents.

## **2.03 Reporting and Resolving Discrepancies**

- A. Reporting Discrepancies
  - 1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within these Contract Documents or between these Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to PROJECT ENGINEER in writing immediately. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by Part 4) until an amendment or supplement to these Contract Documents has been issued; provided, however, that CONTRACTOR shall not be liable to OWNER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.
- B. Resolving Discrepancies
  - 1. Except as may be otherwise specifically stated in these Contract Documents, the following Order of Precedence shall be adhered to for resolving any conflict,

error, ambiguity, or discrepancy between the provisions of these Contract Documents:

- i. Addendum
- ii. Agreement
- iii. Technical Specifications
- iv. Bid Specifications
- v. General Conditions
- vi. Drawings
- vii. Special Provisions
- viii. Measurement & Payment

#### **2.04 Amending and Supplementing Contract Documents**

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:
  1. Addendum, or
  2. Change Order.
- B. The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  1. PROJECT ENGINEER's approval of a Shop Drawing or Sample; or
  2. PROJECT ENGINEER's written interpretation or clarification.
- C. If CONTRACTOR believes that any variation or deviation authorized under this Paragraph entitles CONTRACTOR to an adjustment in Contract Price or Contract Time, it is CONTRACTOR's obligation to provide written notice to PROJECT ENGINEER in accordance with Parts 9 and 10 prior to proceeding with the work covered by the variation or deviation.

#### **2.05 Reuse of Documents**

- A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect Contract with OWNER:
  1. Shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of DESIGN ENGINEER, DESIGN ENGINEER's Consultant, or PROJECT ENGINEER, including electronic media editions; and
  2. Shall not reuse any Contract Documents or copies thereof on extensions of the Project or any other project without written consent of OWNER and specific written verification or adaptation by DESIGN ENGINEER. This prohibition shall survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of these Contract Documents for record purposes.

**Section 3 intentionally omitted.**

## **CONTRACTOR'S RESPONSIBILITIES**

### **4.01 Supervision and Superintendence**

**A. Superintendent:**

1. The CONTRACTOR shall designate a full-time competent superintendent, satisfactory to the PROJECT ENGINEER, to supervise the Work and to respond to the PROJECT ENGINEER concerning the OWNER's interest in the construction.
2. The Superintendent shall have full authority to act on behalf of the CONTRACTOR and all communications, instructions, directions, and notices given to the Superintendent by the PROJECT ENGINEER shall be binding to the CONTRACTOR.
3. The Superintendent shall give the work his or her constant attention to facilitate the progress thereof and shall cooperate with the PROJECT ENGINEER in every way possible. The Superintendent shall at all times have a competent and reliable English-speaking representative on site, authorized to receive orders and act for him.
4. If construction activity is stopped due to the Superintendent not being available or competent, the CONTRACTOR shall not have recourse against the OWNER.
5. CONTRACTOR's Superintendent shall be responsible for coordination of the Work with other contractors or subcontractors onsite.

**B. Any employee, or person associated with the CONTRACTOR shall not:**

1. Use profane or abusive language to any person;
2. Interfere with the performance of the Work,
3. Disobey instructions,
4. Be careless, reckless or incompetent, or;
5. Be objectionable to the OWNER.

Any employee, or person associated with the CONTRACTOR that fails to abide by the above conditions shall be removed from the Project Sites on the request of the PROJECT ENGINEER and shall not be allowed on the Project Sites except with the PROJECT ENGINEER's written consent.

**C. Subcontractors**

1. The CONTRACTOR shall submit the names and references of both the Superintendent and all Sub-contractors to the PROJECT ENGINEER for approval prior to construction starting on the project. The CONTRACTOR shall not begin work until receiving written approval. If during the duration of the

contract the CONTRACTOR changes Superintendent and Sub- contractors, CONTRACTOR shall submit names and references to PROJECT ENGINEER for approval prior to new personnel starting work.

2. If the CONTRACTOR has a Subcontractor working, the CONTRACTOR shall have a Superintendent on the site at all times. Construction activity shall be stopped if the CONTRACTOR's Superintendent is not on site.
3. The CONTRACTOR is and remains fully responsible for its own acts or omission as well as those of any subcontractors or any employee of either. The CONTRACTOR agrees that no contractual relationship exists between the Subcontractor and the OWNER in regard to the Contract, and that the subcontractor acts on its work as an agent or employee of the CONTRACTOR. The CONTRACTOR agrees to bind specifically every subcontractor to the applicable terms and conditions of these Contract Documents.

#### **4.02 PERSON AUTHORIZED TO SIGN DOCUMENTS**

- A. The CONTRACTOR shall provide a list of all persons who are authorized to sign documents such as Change Orders, Pay Applications, Proposals and Certificates on their behalf. Upon the CONTRACTOR signing any document it will be fully binding to the CONTRACTOR and hold them to all the conditions and provisions of such documents.

#### **4.03 Labor; Working Hours**

- A. This Contract is subject to the applicable provisions of the Contract Works Hours and Safety Standards Act and all other applicable Laws and Regulations. No Contractor or Subcontractor contracting for any part of the Work shall require or permit any laborer or mechanic to be employed on the Work in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times that person's basic rate of pay for all hours worked in excess of forty hours in such work week.
- B. CONTRACTOR shall employ only competent persons to do the Work and whenever OWNER shall notify CONTRACTOR, in writing, that any person on the Work appears incompetent, disorderly, or otherwise unsatisfactory, such person shall be removed from the Project and shall not again be employed on it except with written consent of OWNER.
- C. CONTRACTOR and Subcontractors shall agree not to discriminate in the employment of labor because of race, creed, sex, religion or country of origin.

#### **4.04 Prosecution of Work**

- A. The CONTRACTOR shall undertake the Work with all necessary materials, equipment and labor to ensure its completion within the time set forth in the Contract. Should the CONTRACTOR choose to discontinue the Work it shall notify the OWNER in writing a minimum of three (3) business days in advance. The OWNER shall review and respond to the request in writing. If approved, the CONTRACTOR shall notify the OWNER in writing a minimum of 24 hours prior to the resuming operations.

#### 4.05 **Services, Materials, and Equipment**

- A. Unless otherwise specified in these Contract Documents, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified and shall be of good quality and new. All warranties and guarantees specifically called for by these Contract Documents shall expressly benefit the OWNER. If required by OWNER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in these Contract Documents.
- C. Workmanship shall be in accordance with these Contract Documents and shall be subject to the OWNER's approval.

#### 4.06 **Substitutes and "Or-Equals"**

- A. Whenever an item of material or equipment is specified or described in these Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or- equal" item or no substitution is permitted, or the equipment is Base Bid equipment, other items of material or equipment of other Suppliers may be submitted (in accordance with Section 01300) to PROJECT ENGINEER for review.
  - 1. Or Equal Items – For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. In the exercise of reasonable judgment, the PROJECT ENGINEER determines that:
      - i. It is equivalent to or better than the product named in form, function, performance, reliability, quality, features, materials of construction, operation and maintenance costs, static and dynamic loads, general dimensional configuration, size, weight, and appearance;
      - ii. It will reliably perform at least equally well in function imposed by the design concept of the completed Project as a functioning whole, and;
    - b. CONTRACTOR certifies that:
      - i. There is no increase in cost to the OWNER; and
      - ii. It will conform substantially to the detailed requirements of the

item named in these Contract Documents.

PROJECT ENGINEER may reject the proposed substitution at their sole discretion. No justification shall be necessary for the rejection.

**4.07 Concerning Subcontractors, Suppliers, and Others**

- A. CONTRACTOR shall not employ any subcontractor, supplier, or other individual or entity (including those acceptable to OWNER as indicated in this Part 4), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.
- B. If these Contract Documents require the identity of certain subcontractors, suppliers, or other individuals or entities to be submitted to OWNER by CONTRACTOR by a specified date prior to the Effective Date of the Contract, and if CONTRACTOR has submitted a list thereof in accordance with these Contract Documents, OWNER's acceptance of any Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity at no additional cost to the OWNER. No acceptance by OWNER of any Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER to reject defective Work.
- C. CONTRACTOR shall be fully responsible to OWNER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work. Nothing in these Contract Documents shall create any contractual relationship between OWNER, and any Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER to pay or to see to the payment of any monies due any Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect Contract with CONTRACTOR.
- E. All Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work shall communicate with OWNER through CONTRACTOR.
- F. The Contract Documents shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed by a Subcontractor or Supplier shall be pursuant to an agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of these Contract Documents. Whenever any agreement is with a Subcontractor or Supplier who is listed as an additional insured on the insurance provided in the Instructions to Bidders, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, DESIGN ENGINEER, and all other individuals or entities identified in these Contract Documents to be listed as insured or additional insurers (and the officers,

directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other insurance applicable to the Work. If the insurers on any policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

- H. The CONTRACTOR shall not subcontract more than 49% of the value of the Contract. Violation of this provision may be deemed to be a breach of the Contract. CONTRACTOR's failure to remedy after notice shall entitle OWNER to any and all remedies as set forth in these Contract Documents applicable to OWNER'S rights in the event of breach.

#### **4.08 Patent Fees and Royalties**

- A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in these Contract Documents for use in the performance of the Work and if to the actual

knowledge of OWNER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in these Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, DESIGN ENGINEER, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in these Contract Documents.

#### **4.09 Permits**

- A. Unless otherwise provided in these Contract Documents, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all charges and inspection fees necessary to complete the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Contract. OWNER shall pay all charges of utility owners for connections to provide permanent service to the Work.

#### **4.10 Laws and Regulations**

- A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, OWNER and DESIGN ENGINEER shall not be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.
- B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. It shall not be CONTRACTOR's primary responsibility to make certain that these Contract Documents are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of their obligations set forth under Part 2.
- C. Changes in Laws or Regulations not known at the time of opening of Bids having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Time. If OWNER and CONTRACTOR are unable to agree on any adjustment a Claim may be made as provided in Part 8.

#### **4.11 Taxes**

- A. CONTRACTOR shall pay all sales, consumer, use, and other taxes required to be paid in accordance with the Laws and Regulations which are applicable during the performance of the Work.



#### 4.12 Use of Site and Other Areas

- A. Limitation on Use of Site and Other Areas: CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- B. Removal of Debris During Performance of the Work: During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations as well as the terms in the Special Provisions.
- C. Cleaning: Prior to Final Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by these Contract Documents.
- D. Sanitary Provision: The CONTRACTOR shall provide and maintain in a neat and sanitary condition such accommodations for the use of its employees as may be necessary to comply with the requirements and regulations of the Department of Health, or of the other entities, having jurisdiction thereof. The CONTRACTOR shall commit no public nuisance and shall at all times keep the site free from accumulations of waste material or rubbish caused by its employees or work. Upon the completion of the work and before final acceptance can be made, all evidence of construction shall be removed, all property restored to its original condition, all manholes, and any other items of construction shall be clean and neat in appearance; any other necessary items of clean-up shall be performed.
- E. Loading Structures: CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.
- F. The Contractor shall carefully protect from disturbance or damage all private property and property corners. Property corners shall not be removed until the Project Coordinator has witnessed or otherwise referenced their location. Any damage to property corners shall be repaired/replaced at no additional cost to the OWNER. If any markers, identified or not, are disturbed, removed, or destroyed through the construction process, the CONTRACTOR shall retain the services of a Professional Land Surveyor, licensed in the State of North Carolina, and have those markers replaced. The CONTRACTOR shall further submit a drawing identifying the locations of those markers, signed and sealed by the licensed Professional Land Surveyor. At the CONTRACTOR's discretion, and without additional cost to the Contract, the surveyor may contact the DESIGN ENGINEER and have the markers offset prior to the commencement of construction.
- G. The CONTRACTOR shall not enter upon private property for any purpose without

obtaining permission. It shall use suitable precautions to prevent damage to pipes, conduits, and other underground structures, and shall protect carefully from disturbance or damage all land monuments and property markers until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.

- H. When any damage or injury is done to public or private property, due to any act, omission, neglect or misconduct on the part of the CONTRACTOR, it shall restore, at its own expenses, such property to a condition equal or better than existing before damage or injury was done or it shall make good damage or injury in an acceptable manner.

#### **4.13 Safety and Protection**

- A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
  1. All persons on the Site or who may be affected by the Work;
  2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. Other property at the Site or adjacent thereto not designated for removal, relocation, or replacement in the course of the Work.

CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and OWNER has issued a notice to CONTRACTOR in accordance with Part 12 that the Work is acceptable.

- B. The CONTRACTOR shall notify owners of adjacent property and other utility owners when the Work may affect them. The CONTRACTOR shall erect and maintain all necessary safeguards for safety and protection. All damage, injury, or loss to any property referred to in this paragraph caused by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of these Contract Documents or to the acts or omissions of OWNER, DESIGN ENGINEER or DESIGN ENGINEER's Consultant).
- C. The CONTRACTOR shall comply with the OWNER's Safety Manual, Latest Edition and all applicable State and Federal Laws and Regulations relating to the safety and protection of persons or property, from damage, injury, or loss. Where conflicts arise between OWNER and other regulations, the more stringent shall apply. A copy of the OWNER's Safety Manual will be made available to the CONTRACTOR. Any interpretation and enforcement made by the OWNER shall be binding upon the CONTRACTOR. The OWNER may visit the CONTRACTOR's work areas to verify that safety procedures are in accordance with applicable regulations. If the CONTRACTOR's personnel are observed creating a hazardous environment, corrective action shall be initiated immediately to reduce the possibility of injury. Corrective action by the OWNER will consist of advising the CONTRACTOR of compliance and could result in the

OWNER issuing notices of non-compliance for repeat violations or failure to take corrective measures. Inspection by the OWNER shall not constitute an acceptance of the CONTRACTOR's practices, methods, techniques, procedures, nor release the CONTRACTOR of the responsibility for safety of the job site.

- D. Neither the professional responsibilities of the OWNER, PROJECT ENGINEER or DESIGN ENGINEER, nor the presence of the OWNER or DESIGN ENGINEER's employees and/or consultants at the construction site, shall relieve the CONTRACTOR or any other entity of their obligations, duties and responsibilities including but not limited to, construction means, methods, sequences, techniques or procedures necessary for performing, superintending or coordinating all portions of the Work in accordance with these Contract Documents and any health or safety precautions required by any regulatory agencies. The OWNER or DESIGN ENGINEER, their employees, representatives, and sub-consultants shall have no responsibility for site safety.
- E. The OWNER's or DESIGN ENGINEER's personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with any health and/or safety precautions. The CONTRACTOR is solely and exclusively responsible for job site safety and shall include the OWNER and DESIGN ENGINEERS as additional insured for primary protection under the CONTRACTOR's general liability policy.
- F. Reserved.
- G. It is the intent of the Fayetteville Public Works Commission (FPWC) to ensure that all Underground Electrical Facilities are installed safely in accordance with FPWC Construction Standards and following the National Electrical Safety Code (NESC). All installations shall follow applicable United States Department of Labor Occupational and Safety and Health Administration Standards (OSHA).
- H. In the event of problems arising associated with installations and/or terminations, FPWC shall contract with a 3<sup>rd</sup> party to perform electrical and/or testing on a percentage of the installed facilities. If any of the tested facilities fail the performed test, it shall be the responsibility of the CONTRACTOR to repair and/or replace the installed facilities at CONTRACTOR'S cost. After repair of re-installation, CONTRACTOR shall have facilities re-tested with the original testing party. CONTRACTOR shall be responsible for cost of repairs and re-testing.

#### **4.14 Safety Representative**

- A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- B. All crews that operate in and around trenches shall have their own Competent Person as defined by OSHA standards.

#### **4.15 Hazard Communication Programs**

- A. CONTRACTOR shall be responsible for coordinating any exchange of Safety Data Sheets (SDS) or other hazard communication information in accordance with all applicable Laws and Regulations. The CONTRACTOR shall be responsible to provide and maintain SDS sheets at the job site at all times. The sheets shall be accessible to all personnel at the site
- B. CONTRACTOR shall comply with the applicable North Carolina Occupational Safety and Health Standards and regulations while performing services contracted by OWNER.
- C. The OWNER is subject to Hazard Communication Standard 29 CFR 1910 (Standard). The CONTRACTOR shall provide SDS required under the Standard for all hazardous materials. The SDS shall be provided with all hazardous materials. Container labeling meeting all requirements of the Standard shall be appropriately affixed to the shipping or internal containers. The OWNER reserves the right to refuse shipments of hazardous materials not appropriately labeled or when SDS have not been received prior to or concurrent with receipt of the shipment, or whenever the material is delivered in a manner inconsistent with any applicable Law and/or Regulation. The CONTRACTOR further certifies that all material supplied under this Contract meets all OSHA requirements, both Federal and those of the State of North Carolina, and further certifies that, if the material delivered is found to be in non-compliance with the applicable State or Federal OSHA requirements all costs necessary to bring the material into compliance shall be borne by the CONTRACTOR.

#### **4.16 Emergencies**

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent damage, injury, or loss. CONTRACTOR shall give the PROJECT ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from these Contract Documents have been caused or are required as a result of the emergency. If the PROJECT ENGINEER determines that a change in these Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### **4.17 Continuing the Work**

- A. CONTRACTOR shall continue the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. The CONTRACTOR's refusal to continue the Work during disputes and disagreements with OWNER, the pending of claims, or the pending of change order requests shall be a violation of these Contract Documents.
- B. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Part 13 or as OWNER and CONTRACTOR may otherwise agree in writing.

#### **4.18 Contractor's General Warranty and Guarantee**

- A. CONTRACTOR warrants and guarantees to OWNER, that all Work shall be in accordance with these Contract Documents and shall not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:
1. Abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
  2. Normal wear and tear under normal usage.
- B. CONTRACTOR's obligation to perform and complete the Work in accordance with these Contract Documents shall be absolute. None of the following shall constitute an acceptance of Work that is not in accordance with these Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with these Contract Documents:
1. Observations by PROJECT ENGINEER;
  2. Recommendation by PROJECT ENGINEER or payment by OWNER of any progress or final payment;
  3. The issuance of a certificate of Final Completion by PROJECT ENGINEER or any payment related thereto by OWNER;
  4. Use or occupancy of the Work or any part thereof by OWNER;
  5. Any acceptance by OWNER or any failure to do so;
  6. Any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by PROJECT ENGINEER;
  7. Any inspection, test, or approval by others; or
  8. Any correction of defective Work by OWNER.

#### **4.19 RESIDENTIAL/COMMERCIAL COMPLAINTS**

- A. The OWNERS' Complaint Resolution Procedure shall be implemented at the start of construction and shall continue to be followed until the project is completed. The CONTRACTOR is required to maintain good public relations and to provide timely notifications to residents and/or commercial property owners so as to minimize inconvenience and complaints.
- B. The OWNER has an established protocol for addressing complaints. The CONTRACTOR shall be responsible for familiarizing himself and its subcontractors with this protocol. During the course of the Work, the CONTRACTOR shall immediately respond to requests from the OWNER to address resident and/or commercial property complaints. The CONTRACTOR shall inform its personnel and subcontractor personnel that all complaint issues be directed to the PROJECT COORDINATOR and the

CONTRACTOR's Superintendent. The PROJECT COORDINATOR shall be present in all meetings. Should the PROJECT ENGINEER determine the CONTRACTOR(s) non-responsive in addressing complaints, the OWNER reserves the right to withhold progress payments until the complaint has been satisfied. The CONTRACTOR shall immediately notify that PROJECT COORDINATOR of any complaint received.

#### **4.20 CLAIMS PROCEDURE**

- A. The OWNER shall notify the CONTRACTOR of all potential claims related to the Work within seven (7) calendar days of receiving notification. Should the CONTRACTOR receive a potential claim related to the Work, the CONTRACTOR shall notify the OWNER within seven (7) calendar days of receiving notification. The CONTRACTOR shall provide Claimant and OWNER a written response acknowledging receipt of the claim within seven (7) calendar days.
- B. If the CONTRACTOR meets with the Claimant about the claim, the PROJECT COORDINATOR or PROJECT ENGINEER shall be present at all times. The OWNER shall maintain a record of any claim received, and the steps taken to resolve. The OWNER shall also concurrently investigate each case. The CONTRACTOR agrees to furnish the OWNER any information regarding the claim, the actions which led to the claim and/or the investigation of the claim. The CONTRACTOR agrees to indemnify and hold the OWNER and the DESIGN ENGINEER harmless for any damage arising out of said claims. CONTRACTOR shall provide their proposed response to the OWNER within thirty (30) calendar days of receiving the claim. Upon receipt of the response the OWNER and the CONTRACTOR will discuss and reach a mutual agreement of the response necessary to send to the Claimant within fifteen (15) calendar days. Once the agreement is made the CONTRACTOR shall make a formal written resolution to the Claimant.
- C. Failure to act in good faith or respond to a claim in the timelines established by the OWNER will constitute a lack of response by the CONTRACTOR, therefore validating the claim. The OWNER will deduct the total amount of the claim from the monthly pay application. Failure to comply with the above requirements for resolving claims may, at the sole discretion of the OWNER, result in Breach of Contract.
- D. The CONTRACTOR is aware of OWNER's Contractor Related Claims Procedure and understands that it is the OWNER's practice to pursue reimbursement/subrogation for any and all claims related expenses, which are incurred as a result of the CONTRACTOR's performance under this agreement and allowed within the applicable Statue of Limitations.

#### **4.21 Indemnification**

- A. Reserved.
- B. In any and all claims against OWNER or DESIGN ENGINEER or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or

for CONTRACTOR or any Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. Reserved.

#### **4.22 Access to Records**

A. CONTRACTOR and all Subcontractors shall maintain books, records, documents, and other evidence directly pertinent to performance of the Work under these Contract Documents in accordance with generally accepted and consistently applied accounting principles and practices. OWNER shall have access during normal business hours to books, records, documents, and evidence for the purposes of inspection, audit, and copying. CONTRACTOR shall provide suitable facilities for access and inspection. All books, records, and evidence shall be maintained and made available for a period of three (2) years after the date of final payment or until the final settlement of any disputes, claims, and litigation, whichever shall occur later. CONTRACTOR shall provide to OWNER, when requested, copies of all purchase orders issued or sub-agreements executed, complete with all amendments, for Work under these Contract Documents. CONTRACTOR shall include this provision in all subcontracts.

### **PART 5. OTHER WORK**

#### **5.01 Related Work at Site**

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, other contractors, or have other work performed by utility owners. If other work is not noted in these Contract Documents, then:

1. OWNER shall provide written notice to CONTRACTOR prior to starting any other work; and
2. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Time that should be allowed as a result of other work, a Claim may be made as provided in Part 8.

B. CONTRACTOR shall provide proper and safe access to the Site for all contractors, utility owners, and OWNER's employees performing other work. Contractor shall provide a reasonable opportunity for the mobilization and storage of materials and equipment and the performance of such other work. The Contractor shall properly coordinate the other work with theirs. Unless otherwise provided in these Contract Documents, CONTRACTOR shall perform all work that may be required to properly integrate with the other work. CONTRACTOR shall not endanger or alter any work of others. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in direct Contracts between OWNER, and utility owners, and other contractors.

C. If any part of CONTRACTOR's Work depends upon work performed by others under this Part 5, CONTRACTOR shall notify PROJECT ENGINEER in writing of any delays, defects, or deficiencies in the other work that may prevent the CONTRACTOR from performing the Work. CONTRACTOR's failure to report will constitute an acceptance

of the other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in the other work.

## **5.02 Coordination**

- A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the PROJECT ENGINEER shall provide the following:
  - 1. The individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  - 2. The specific matters to be covered by such authority and responsibility will be itemized; and
  - 3. The extent of such authority and responsibilities will be provided.
- B. Unless otherwise specified by the PROJECT ENGINEER, OWNER shall have sole authority and responsibility for such coordination.

## **PART 6. OWNER'S RESPONSIBILITIES**

### **6.01 Project Engineer**

- A. PROJECT ENGINEER shall be the OWNER's representative during the construction period. The duties, responsibilities and the limitations of authority of PROJECT ENGINEER as OWNER's representative during construction are set forth in these Contract Documents. The assignment of any authority, duties, or responsibilities to PROJECT ENGINEER under these Contract Documents, or any undertaking, exercise, or performance thereof by PROJECT ENGINEER, is intended to be for the sole and exclusive benefit of OWNER and not for the benefit of CONTRACTOR, Subcontractor, Supplier, or any other person or organization, or for any surety or employee or agent of any of them.

### **6.02 Roles and Responsibilities**

- A. Authorities and Duties of PROJECT ENGINEER
  - 1. The PROJECT ENGINEER shall in no case act as foreman, direct the CONTRACTOR's personnel, subcontractor personnel or direct or perform duties for the CONTRACTOR, nor interfere with the management of the Work by the CONTRACTOR.
  - 2. The PROJECT ENGINEER may make changes in grades and quantities when necessary to keep Work in progress.
  - 3. To prevent disputes and litigation, the PROJECT ENGINEER shall in all cases determine the amount, quality, and acceptability of the Work and materials which are to be paid for under the Contract. The PROJECT ENGINEER shall in all cases decide every question which may arise relative to the fulfillment of the Contract. The PROJECT ENGINEER's opinion of the costs and decisions shall be final and conclusive.



4. The PROJECT ENGINEER will not decide disputes between the CONTRACTOR and person or entities other than the OWNER.
5. Clarifications and interpretations of these Contract Documents shall be issued by PROJECT ENGINEER.

B. Authorities and Duties of the PROJECT COORDINATOR

1. The PROJECT COORDINATOR employed by the OWNER shall be authorized to inspect all Work performed and all materials furnished. Their inspection shall extend to all parts of the Work, and to preparation or manufacture of the materials to be used.
2. The PROJECT COORDINATOR shall report to the PROJECT ENGINEER as to the progress and performance of the Work. The PROJECT COORDINATOR shall report whenever the materials furnished and/or the work performed by the CONTRACTOR fails to fulfill the requirements of these Contract Documents. The PROJECT COORDINATOR shall notify the CONTRACTOR of any failure to meet requirements. However, such observation shall not relieve the CONTRACTOR of any obligation to perform all the Work strictly in accordance with these Contract Documents.
3. In case of any dispute arising between the CONTRACTOR and the PROJECT COORDINATOR as to the materials furnished or the performance of the Work, the PROJECT COORDINATOR shall have the authority to reject materials or refer the issue to the PROJECT ENGINEER. Any suspension or work stoppage for rejected materials or performance of the Work shall not be the basis of a claim by the CONTRACTOR for additional Contract time or costs. Such rejection shall also not be the basis of a future claim by the CONTRACTOR for adjustment in Contract unit price or lump sum price or any work item contained in the Contract.
4. Where special inspection or testing is required by the State laws or local ordinances, instruction of the PROJECT ENGINEER, specification or codes, the CONTRACTOR shall provide a minimum of two (2) business days' notice to the PROJECT COORDINATOR of the time set for such inspection or test. Such tests or inspections shall be made in the presence of the PROJECT COORDINATOR.
5. The PROJECT COORDINATOR shall inspect the Work for the purposes of quality assurance, payment approval, monitoring, and documenting progress of the Work. However, the PROJECT COORDINATOR shall not have any responsibility for the Work performed by the CONTRACTOR or its subcontractors, for the Safety of the work site, nor for any deficiency in the Work, whether discovered during the construction or after acceptance.
6. Regardless of the inspections by the PROJECT COORDINATOR or the PROJECT ENGINEER, the CONTRACTOR is responsible for performing and completing the Work in accordance with these Contract Documents. The OWNER has no liability or responsibility to the CONTRACTOR or Surety for work performed by the CONTRACTOR, which is not in accordance with these Contract Documents, regardless of whether discovered during construction or after acceptance.

**6.03 Communications to Contractor**

- A. Except as otherwise provided in these Contract Documents, OWNER shall issue all communications to CONTRACTOR through PROJECT ENGINEER.

**6.04 Clarifications and Interpretations**

- A. Requests for clarification from the CONTRACTOR shall be directed to the PROJECT ENGINEER. The PROJECT ENGINEER will review the request for clarification and issue written clarifications or interpretations as necessary, which shall be consistent with the intent of and reasonably inferable from these Contract Documents. Any written clarifications and interpretations shall be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price, Contract Time, or both, that should be allowed as a result of a written clarification or interpretation; a Claim may be made as provided in Part 8.

**6.05 Replacement of DESIGN ENGINEER**

- A. In case of termination of the employment of DESIGN ENGINEER, OWNER shall appoint an engineer whose status under these Contract Documents shall be that of the former DESIGN ENGINEER.

**6.06 Furnish Data**

- A. OWNER shall furnish the data required in accordance with these Contract Documents.

**6.07 Decisions on Requirements of Contract Documents and Acceptability of Work**

- A. If PROJECT COORDINATOR and CONTRACTOR cannot agree to the acceptability of the Work or the interpretation of the requirements of these Contract Documents pertaining to the performance and furnishing of the Work, the matter will be referred to PROJECT ENGINEER for final decision. Written notice (to include supporting documentation) of each such claim, dispute, or other matter shall be delivered by the CONTRACTOR to the PROJECT ENGINEER no later than thirty (30) calendar days after the start of the occurrence. Failure to file a claim within the allowed time frame shall waive the CONTRACTOR's ability to make future claims for that particular instance. PROJECT ENGINEER will render a formal decision in writing within thirty (30) calendar days after receipt of the CONTRACTOR's submittal, in accordance with these Contract Documents.
- B. The rendering of a decision by PROJECT ENGINEER with respect to any claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Part 12) shall be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under these Contract Documents or by Laws and Regulations in respect to any such claim, dispute, or

other matter.

**6.08 Rejecting Defective Work**

- A. PROJECT ENGINEER shall have authority to reject Work that is not in accordance with these Contract Documents. PROJECT ENGINEER shall also have authority to require special inspection or testing as provided in Part 11, whether or not the Work is fabricated, installed, or completed.

**6.09 Determinations for Unit Price Work**

- A. PROJECT COORDINATOR shall determine the actual quantities and classifications of Work performed. PROJECT COORDINATOR shall review with CONTRACTOR the actual quantities and classifications for payment prior to CONTRACTOR submitting an Application for Payment.

**6.10 Pay When Due**

- A. OWNER shall make payments to CONTRACTOR in accordance with these Contract Documents.

**6.11 Limitations on Owner's Responsibilities**

- A. The OWNER shall not supervise, direct, have control or authority over, nor be responsible for CONTRACTOR's means, methods, techniques, sequences, procedures of construction, safety precautions and programs, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER shall not be responsible for CONTRACTOR's failure to perform the Work in accordance with these Contract Documents.

**6.12 Limitations on PROJECT ENGINEER and PROJECT COORDINATOR Responsibilities**

- A. PROJECT ENGINEER and PROJECT COORDINATOR shall not be responsible for the acts or omissions of CONTRACTOR, Sub-contractors, Suppliers, or any other individual or entity performing any of the Work.
- B. PROJECT ENGINEER and PROJECT COORDINATOR shall not supervise, direct, control, have authority over, nor be responsible for CONTRACTOR's means, methods, techniques, sequences, procedures of construction, safety precautions and programs, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. PROJECT ENGINEER and PROJECT COORDINATOR shall not be responsible for CONTRACTOR's failure to perform the Work in accordance with these Contract Documents.
- C. The limitations upon authority and responsibility set forth in this paragraph shall also apply to OWNER's Consultants, Agents, Officers, and Employees.

### **6.13 Non-Compliance Notices**

- A. Failure to comply with any terms of this Contract shall result in the issuance of a Non-Compliance Notice (NCN). This notice shall be issued by the PROJECT ENGINEER and will outline the violation of the Contract. In the notice, a timeframe for resolution will be established. If the issue is not resolved and a written response is not received within the given timeframe, pay applications will not be processed.
- B. After two (2) NCN's have been issued for the same violation, the project may be shut down until the issue is resolved to the OWNER's satisfaction. If Work is stopped due to a Contract violation, no consideration will be given for an extension of Contract Time. The issuance of any NCN may influence the OWNER's decision to award the CONTRACTOR future work.

## **PART 7. DESIGN ENGINEER'S STATUS DURING CONSTRUCTION**

### **7.01 Limitations on DESIGN ENGINEER's Authority and Responsibilities**

- A. Except for the negligence of DESIGN ENGINEER, its agents, officers, and employees neither DESIGN ENGINEER's authority or responsibility under the provisions of these Contract Documents nor any decision made by DESIGN ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking or performance of any authority or responsibility, by DESIGN ENGINEER shall create, impose, or give rise to any duty in Contract, tort, or otherwise owed by DESIGN ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

### **7.02 Visits to Site**

- A. DESIGN ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction, as DESIGN ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. DESIGN ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work.
- B. DESIGN ENGINEER efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to these Contract Documents.
- C. DESIGN ENGINEER shall not supervise, direct, control, have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, procedures of construction, safety precautions and programs, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

## PART 8. CHANGES IN THE WORK; CLAIMS

### 8.01 Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, OWNER may, at any time order additions, deletions, or revisions in the Work by a Change Order or a Work Change Directive. Upon receipt of the notification from PROJECT ENGINEER, CONTRACTOR shall proceed with the Work involved which will be performed under the applicable conditions of these Contract Documents (except as otherwise specifically provided).
- B. At any time, PROJECT ENGINEER may request CONTRACTOR to submit a proposal for a proposed change in the Work. Within ten (10) business days after receipt of a Request for Proposal, CONTRACTOR shall submit, to PROJECT ENGINEER, a written detailed proposal for the change. The detailed proposal shall include an itemized estimate of all costs that will result from the proposed change and include an assessment of the impact on the overall project schedule. Unless otherwise directed, itemized estimates shall be in accordance with Part 9. Proposals shall be of sufficient detail to permit an analysis by PROJECT ENGINEER of all material, labor, equipment, subcontracts, overhead costs, and fees. The proposal shall cover all Work involved in the change, whether such Work was deleted, added, changed, or impacted. Each cost category shall be supported with substantiating documentation which may include, but is not limited to, quantity takeoffs, quotations, invoices, cost records, certified payrolls and identification of estimating guidelines and resources. The subcontract portions of each proposal shall be similarly supported. Itemized schedule adjustments shall be in sufficient detail to permit an analysis of impact. If OWNER elects to proceed with the change covered by the Request for Proposal, such change will be authorized by execution of proper documentation in accordance with this Part 8. Notwithstanding the Request for Proposal, CONTRACTOR shall continue to perform the Work and maintain the progress schedule. PROJECT ENGINEER and OWNER shall have twenty (20) business days after receipt of the detailed proposal to respond in writing. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.
- C. The adjustment in Contract Price and/or Contract Time stated in a Change Order shall comprise the total price and/or time adjustment due CONTRACTOR for the Work or changes defined in the Change Order. Signing of the Change Order constitutes full and mutual accord by OWNER and CONTRACTOR for the adjustment in the Contract Price and/or Time as a result of increases or decreases in costs and time of performance caused directly and indirectly by the change. By approving the Change Order the CONTRACTOR waives all rights to claim further adjustments related to the Change Order.
- D. CONTRACTOR is obligated, in the performance of changes in the Work, to mitigate all cost and time related to any changes and shall identify in writing, when requested by OWNER, the actions taken in that regard.
- E. In the event that OWNER and CONTRACTOR are unable to agree as to the cost and/or time to perform the change in the Work, OWNER and PROJECT ENGINEER may make a unilateral determination of the reasonable cost and/or time to perform the change in the Work, based upon their own estimates, CONTRACTOR's submission, or a combination

thereof, and issue a unilateral Change Order for the amounts of cost and/or time so determined, which shall become binding upon CONTRACTOR. The unilateral Change Order shall enable OWNER to make payments for Work performed thereunder, and CONTRACTOR shall be paid for work completed, based on costs determined by OWNER. CONTRACTOR may appeal the unilateral Change Order within fifteen (15) business days of receipt, as provided in Part 14. Failure of the parties to reach an agreement regarding the cost and/or time of performing the change in the Work shall not relieve CONTRACTOR from performing the change in the Work.

- F. Should unforeseen circumstances arise which, in the opinion of the PROJECT ENGINEER, require work to be done upon which no price can be agreed, the PROJECT ENGINEER may require that the work be accomplished under negotiated contract with another contractor or with the OWNER's own forces, or on a force account basis. Work completed on a Force Account basis shall be as follows:
1. All costs shall be in accordance with Part 9.
  2. All activities shall be documented daily (time, material tickets, invoices, etc.) by the PROJECT COORDINATOR, agreed upon with the CONTRACTOR, and submitted to the PROJECT ENGINEER.
  3. No claims for force account work will be accepted where the PROJECT ENGINEER had not specifically authorized the CONTRACTOR.
  4. Skilled and common labor shall be paid for in accordance with the approved "Labor & Equipment Rates" submittal. Labor classifications shall be approved by the PROJECT ENGINEER prior to beginning force account work.
  5. Materials and supplies used are to be listed on invoices. Copies of invoices which show all the materials, quantities, costs, etc. utilized in the force account work shall be submitted to the PROJECT COORDINATOR within two (2) business days of the date of the activity.
  6. Equipment shall be paid for in accordance with the approved "Labor & Equipment Rates" submittal. Equipment shall be approved by the PROJECT ENGINEER prior to beginning force account work.
  7. The PROJECT ENGINEER shall determine the total cost of the force account work, including 15% overhead and profit.
  8. Force account work shall be authorized by the PROJECT ENGINEER in writing.

## **8.02 Unauthorized Changes in the Work**

- A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any work performed that is not required by these Contract Documents as amended, modified, or supplemented as provided in Part 2, except in the case of an emergency as provided in Part 4 or in the case of uncovering Work as provided in Part 11.
- B. Work performed without staking and/or approved cut sheets, and/or work performed

beyond the Project limits shall be considered as unauthorized and at the expense of the CONTRACTOR. Any unauthorized work may be ordered removed and/or replaced by the PROJECT ENGINEER at the CONTRACTOR's sole expense.

### **8.03 Execution of Change Orders**

- A. OWNER and CONTRACTOR shall execute Change Orders as recommended by PROJECT ENGINEER authorizing:
1. Changes in the Work, including but not limited to: changes requested by OWNER, changes required due to acceptance of defective work as outlined in Part 11, OWNER's correction of defective work as outlined in Part 11, and changes requested by CONTRACTOR and approved by PROJECT ENGINEER;
  2. Changes in the Contract Price and/or Contract Time which are agreed to by the Parties, including any undisputed costs and/or time for Work actually performed in accordance with a Work Change Directive; and;
  3. Changes in the Contract Price and/or Contract Time incorporating the written decision of the PROJECT ENGINEER resolving any claims or disputes. CONTRACTOR reserves the right to delay signing the Change Order while appealing the PROJECT ENGINEER's written decision regarding the claim or dispute. However, CONTRACTOR shall continue to perform the Work and adhere to the project schedule, as provided in Part 4.

### **8.04 Notification to Surety**

- A. If notice of any change affecting the general scope of the Work or the provisions of these Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change. OWNER shall simultaneously provide CONTRACTOR with a copy of such notice. Surety shall furnish OWNER proof of such adjustment.

### **8.05 Claims and Disputes**

- A. Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the CONTRACTOR to PROJECT ENGINEER no later than thirty (30) calendar days after the start of the event. CONTRACTOR shall provide PROJECT ENGINEER with supporting data within sixty (60) calendar days after the start of the event (unless the PROJECT ENGINEER allows additional time for submittal of additional or more accurate data). A Claim for an adjustment in Contract Price and/or Contract Time shall be prepared in accordance with the provisions of Part 10. Each Claim shall be accompanied by a written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR believes it is entitled.

- B. PROJECT ENGINEER will render a formal decision in writing within thirty (30) calendar days after receipt of the last submittal of the CONTRACTOR unless additional time is required. PROJECT ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:
1. The CONTRACTOR submits a written appeal within fifteen (15) calendar days of receipt of PROJECT ENGINEER's written decision. Upon receipt of the written appeal, PROJECT ENGINEER shall coordinate discussions between OWNER, CONTRACTOR, and PROJECT ENGINEER in an attempt to reach resolution. Failure to reach resolution will result in the claim being settled in accordance with the dispute resolution procedures set forth in Part 14; or
- C. No Claim for an adjustment in the Contract Price or Contract Time shall be valid if not submitted in accordance with this section.

## **PART 9. COST OF THE WORK; UNIT PRICE WORK**

### **9.01 Cost of the Work**

- A. The term "Cost of the Work" means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR shall be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by PROJECT ENGINEER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, and shall include only the following items:
1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by PROJECT ENGINEER and CONTRACTOR. Such employees include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by PROJECT ENGINEER.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. Should the OWNER deposit fund with the CONTRACTOR, the CONTRACTOR shall provide copies of invoices for rental equipment and agreements. Further, all trade discounts, rebates, refunds, and returns from sale of



surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remains the property of CONTRACTOR.
  - b. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with the rental agreements and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - c. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.
  - d. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses
  - e. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work(except losses and damages within the deductible amounts of property insurance established in accordance with these Contract Documents), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.
  - f. The cost of utilities, fuel, and sanitary facilities at the Site.
  - g. The cost of premiums for all Bonds and insurance CONTRACTOR is required by these Contract Documents to purchase and maintain.

- B. The term "Cost of the Work" shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications, all of which are to be considered administrative costs.
  2. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.
  3. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.
  4. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
  5. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
  6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly in this Part.
  7. Extended office overhead (except office and temporary facilities at the site) or lost profit associated with delays of any type. Minor expenses such as long-distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work. Such costs are considered to be administrative costs covered by CONTRACTOR's fee.
  8. Any and all costs, which arise from any suspension, delay, or interruption to a Work activity or the Work as a whole, to the extent that performance would have been so suspended, delayed, or interrupted for reasons beyond the control and without the fault or negligence of OWNER. Examples of such situations include, but are not limited to, instances where compensable delays occur concurrently with either excusable or inexcusable delays and instances where such combinations of delays, even when not concurrent, individually give rise to similar impacts on the completion of the Work.
- C. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in Part 10.

## 9.02 Unit Price Work

- A. Where these Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Bid Form. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR shall be made by PROJECT ENGINEER subject to the provisions of Part 6.
- B. Each unit price shall include an amount to cover the CONTRACTOR's overhead and profit for each separately identified item.
- C. All unit prices submitted with the CONTRACTOR's bid proposal shall be held firm against any increase for the duration of Contract.

## PART 10. CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 10.01 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price shall be determined as follows:
  - 1. Where the Work involved is covered by unit prices contained in these Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Part 9); or
  - 2. Where the Work involved is not covered by unit prices contained in these Contract Documents, by mutually agreed unit prices or lump sum (which may include an allowance for overhead and profit); or
  - 3. Where the Work involved is not covered by unit prices contained in these Contract Documents and agreement to a unit price or lump sum is not reached, on the basis of the Cost of the Work (subject to provisions of Part 9) plus a CONTRACTOR's fee for overhead and profit.
- B. CONTRACTOR shall establish and maintain records in accordance with generally accepted accounting practices and submit in a form acceptable to OWNER an itemized cost breakdown together with supporting data. OWNER may audit CONTRACTOR's records related to such costs during normal business hours.
- C. The CONTRACTOR's total fee for overhead and profit shall not exceed 15% of the value of the additional work.
- D. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with Part 8 if:

1. The quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly plus or minus fifty (50) percent from the estimated quantity of such item indicated in the Bid Form;
  2. There is no corresponding adjustment with respect to any other item of Work; or
  3. If CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.
- E. No increase in Contract Price shall be granted for Inexcusable Delays, unless otherwise agreed to by OWNER.

#### **10.02 Change of Contract Time**

- A. The Contract Time may only be changed by a Change Order. Any adjustment in the Contract Time shall be based on the following:
1. Additional Work requested by OWNER,
  2. Work deleted from Contract by OWNER,
  3. Excusable delay, as approved by the PROJECT ENGINEER, or
  4. Approved written request submitted by CONTRACTOR.
- B. Excusable Delays in the completion of the entire Work or specified part thereof shall not give rise to default under the Contract by either party. Any such delays shall not entitle CONTRACTOR to any additional compensation. The sole remedy of CONTRACTOR shall be an extension of Contract Time pursuant to this Part 10.
- C. In presenting justification for any adjustment of Contract Time, CONTRACTOR shall not rely on their initial sequencing of the Work but shall rely on the updated schedule resulting from the delay or change in Work. The PROJECT ENGINEER may request the CONTRACTOR submit an updated schedule prior to approval of the request. The schedule shall be submitted in accordance with these Contract Documents. CONTRACTOR shall make every effort to reschedule any Work which is delayed by changes or unforeseeable conditions so as to minimize any additional time and cost to OWNER.

#### **10.03 Delays Beyond Contractor's Control**

- A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of CONTRACTOR, the Contract Time will be extended in an amount equal to the time lost due to such delay if a Claim is made in accordance with Part 8.

#### **10.04 Delays Within Contractor's Control**

- A. The Contract Time will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR. Should the CONTRACTOR choose to relocate to an alternate area within the project to continue the Work, it shall be deemed as a delay within the CONTRACTOR's control and shall be at no cost to the OWNER.

#### **10.05 Delays Beyond Owner's and Contractor's Control**

- A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Time in an amount equal to the time lost due to the delay shall be CONTRACTOR's sole remedy for the delay.

#### **10.06 Delay Damages**

- A. In no event shall OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or any surety for or employee or agent of any of them, for damages arising out of or resulting from:
  - 1. Delays caused by or within the control of CONTRACTOR; or
  - 2. Delays beyond the control of both OWNER and CONTRACTOR.
- B. Nothing in this section bars a change in Contract Price pursuant to this Part 10 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

#### **10.07 Computation of Time**

- A. Extensions to the Contract Time shall be granted in calendar days. If at the end of the project the final completion date falls on a non-business day, the PROJECT ENGINEER may, at their sole discretion, grant additional time so that the final completion date is a business day.

### **PART 11. TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

#### **11.01 Notice of Defects**

- A. Notice of all defects shall be given to CONTRACTOR upon discovery. All defective Work may be rejected, corrected, or accepted as provided in this Part 11.

#### **11.02 Access to Work**

- A. OWNER, DESIGN ENGINEER, DESIGN ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests shall have access to the Site and the Work for their observation, inspecting, and testing. CONTRACTOR shall provide proper and safe conditions for access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply.

#### **11.03 Uncovering Work**

- A. If any Work requiring inspection is covered prior to OWNER's approval, it shall be uncovered for OWNER's inspection at CONTRACTOR's expense, unless otherwise authorized by OWNER.
- B. If PROJECT ENGINEER considers it necessary that covered Work be inspected or tested, CONTRACTOR, at PROJECT ENGINEER's request, shall uncover or otherwise make available for inspection or testing that portion of the Work in question. The CONTRACTOR shall furnish all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER may be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim as provided in Part 8. If such Work is not found to be defective, CONTRACTOR may be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefore as provided in Part 8.

#### **11.04 Owner May Stop the Work**

- A. If the Work is defective, or if CONTRACTOR's operations endanger or cause unapproved disruptions to the general public or facility, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to these Contract Documents, OWNER may order CONTRACTOR to stop the Work or any portion thereof, until the cause for such order is eliminated, and CONTRACTOR shall have no basis for making a claim. However, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

#### **11.05 Temporary Suspension of Work**

- A. The PROJECT ENGINEER shall have the authority to suspend the Work, wholly or in

part, for such period or periods as deemed necessary, due to conditions that are considered unfavorable for the proper continuation of the Work. If it should become necessary to stop all work for an indefinite period, the CONTRACTOR shall store all materials in such manner that they will not deteriorate or become damaged in any way, and it shall take every precaution to prevent damage or deterioration of the Work performed, provide suitable drainage by opening ditches, shoulder drains, etc., and erect structures where necessary. The CONTRACTOR shall not suspend work without written authorization from PROJECT ENGINEER. Neither the failure of the PROJECT ENGINEER to notify the CONTRACTOR to suspend work on account of unfavorable conditions nor permission by the PROJECT ENGINEER to continue work during unfavorable conditions shall be a cause for the acceptance of any work which does not comply with these Contract Documents.

#### **11.06 Correction or Removal of Defective Work**

- A. CONTRACTOR shall correct all defective Work, or, if the Work has been rejected by PROJECT ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court, arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

#### **11.07 Correction Period**

- A. All Work completed under these Contract Documents shall be guaranteed by the CONTRACTOR for a period of one (1) year from the date of final completion. During that period, all defects discovered in the Work (to include land or other areas made available to the CONTRACTOR), as determined by the OWNER, shall be removed and replaced by the CONTRACTOR at no cost to the OWNER. All Work shall be done in accordance with these Contract Documents. The OWNER may conduct an independent inspection, at their sole expense, of the completed Work prior to the completion of the one (1) year warranty period.

Should the OWNER's inspection determine that the Work is not in accordance with these Contract Documents; the CONTRACTOR shall mobilize and make all necessary repairs at no expense to the OWNER. The CONTRACTOR will receive written notification from the OWNER and be allowed the chance to review any available inspection pictures or other documentation. The CONTRACTOR shall respond to the OWNER with a plan of action within 30 calendar days of receiving notification. The CONTRACTOR shall mobilize and begin to complete the Work within 60 calendar days of receiving notification. The CONTRACTOR shall:

1. Repair such defective land or areas.
2. Correct such defective Work or, if the defective Work has been rejected by the PROJECT ENGINEER, remove it from the project and replace it with Work that is not defective.
3. Satisfactorily correct, repair, remove, or replace any damage to other Work, damage to the work of others, and damage to other land or areas.

If the CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the OWNER reserves the right to contract with another party to complete the warranty work, at the sole expense of the CONTRACTOR. All claims, costs, losses, and damages (including but not limited to all fees and charges or design professionals, attorneys, and other professionals and all court, arbitration or other dispute resolution costs arising out of or relating to such correction or repair or such removal and replacement of work of others) shall be paid by the CONTRACTOR.

The warranty period stated is specifically for the Work installed by the CONTRACTOR. Any collateral damage discovered during the warranty period will be investigated and the CONTRACTOR will be required to respond if the damage is determined to have occurred during the construction process.

- B. In special circumstances where a portion of the Work is placed in service before Final Completion of all the Work, the correction period for that portion may start from an earlier date if so provided in these Contract Documents or by written authorization from the PROJECT ENGINEER.
- C. Where defective Work including restoration (and damage to other Work resulting therefrom) has been corrected, the correction period with respect to such Work shall be extended for an additional period of one year after such correction has been satisfactorily completed.
- D. CONTRACTOR's obligations under this Part 11 are in addition to any other obligation or warranty. The provisions of this Part 11 shall not be construed as a substitute for, a waiver of, the provisions of any applicable statute of limitation or repose.

#### **11.08 Acceptance of Defective Work**

- A. If, instead of requiring correction of defective Work to include restoration, OWNER may elect to accept the Work. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by PROJECT ENGINEER) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in these Contract Documents with respect to the Work, and OWNER may be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefore as provided in Part 8. If the acceptance occurs after final payment, an appropriate amount will be paid by CONTRACTOR to OWNER. Acceptance of defective Work does not relieve the CONTRACTOR from fulfilling the warranty requirements of these Contract Documents.

#### **11.09 Owner May Correct Defective Work**

- A. If CONTRACTOR fails to correct defective Work or to remove and replace rejected Work as required by PROJECT ENGINEER within the time frame provided in the



written notification, OWNER may, after seven (7) calendar days written notice to CONTRACTOR, correct and remedy any such deficiency.

- B. In connection with such corrective and remedial action, the OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, and incorporate in the Work all materials and equipment for which OWNER has paid CONTRACTOR. CONTRACTOR shall allow OWNER's agents and employees, OWNER's other contractors, and DESIGN ENGINEER access to the Site to enable OWNER to exercise the rights and remedies under this Part 11.
- C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court, arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this Part 11 shall be charged against CONTRACTOR, and a Change Order shall be issued incorporating the necessary revisions in these Contract Documents with respect to the Work. The OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefore as provided in Part 8. Such claims, costs, losses and damages shall include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.
- D. CONTRACTOR shall not be allowed an extension of the Contract Time due to any delay in the performance of the Work attributable to the OWNER's rights and remedies under this Part 11.

## **PART 12. PAYMENTS TO CONTRACTOR AND COMPLETION**

### **12.01 Progress Payments**

- A. Applications for Payments
  - 1. The CONTRACTOR shall verify and coordinate monthly quantities with the PROJECT COORDINATOR. Quantities shall be based on the work completed as of the last Friday of the month (or the previous business day, should that Friday be a legal Holiday).
  - 2. The CONTRACTOR shall prepare and submit a completed pay application to the PROJECT ENGINEER, including the following documentation:
    - a) Completed sales tax certificate, documenting the state and county sales tax paid for all materials consumed or to be consumed as part of the Work,
    - b) Affidavit E as required by the Disadvantaged Business Enterprise program, and
    - c) Copies of all invoices of materials claimed on the sales tax certificate.

The CONTRACTOR shall furnish three (3) copies of the pay application and all supporting documentation.

3. There shall be no payment for stored materials.
- B. Sales Tax - The following procedure shall be followed relative to the North Carolina Sales Tax applicable to this Project. CONTRACTOR shall comply fully with the requirements outlined hereinafter, in order that the OWNER may recover the amount of the tax permitted under the law.
1. It shall be the CONTRACTOR's responsibility to furnish the OWNER documentary evidence showing the material used, sales tax paid, and County paid (County of sale) by the CONTRACTOR and each of its Subcontractors. Such evidence shall be transmitted with each pay estimate.
  2. The documentary evidence shall consist of a certified statement by the CONTRACTOR and each of its Subcontractors individually showing total purchases of materials from each separate vendor and total sales taxes paid each vendor. The CONTRACTOR shall submit a certified statement with each pay request, for sales taxes paid during that pay request period. A certified form is required even if no sales tax was paid for pay request period.
  3. The CONTRACTOR shall not be required to certify the Subcontractor's statements but must obtain the Subcontractor's certification.
  4. CONTRACTOR shall furnish to OWNER invoices or copies of invoices for all materials, fixtures and equipment purchased within the pay request period, and such invoices shall state the amount of North Carolina sales tax paid. The CONTRACTOR shall only include only those items that will become part of the Work.
  5. CONTRACTOR shall not include any tax paid on supplies, tools, and equipment, which they use to perform their contracts.
- C. Retainage
1. The OWNER shall make monthly payment to the CONTRACTOR on the basis of a duly certified and approved estimate for the work performed during the preceding month under the Contract. In accordance with N.C.G.S. 143-134.1, the OWNER shall retain 5% of the amount of each monthly periodic payment. The OWNER may, after 50% of the Work has been completed, consider waiving further retainage on the project upon the following conditions:
    - a. Written consent of surety is received;
    - b. Satisfactory progress is being made on the Project; and
    - c. Prior to 50% completion, any nonconforming Work identified in writing by the OWNER has been corrected by the CONTRACTOR and approved by the OWNER.
  2. The project shall be deemed 50% complete when the CONTRACTOR's gross pay estimate equals or exceeds 50% of the value of the Contract. Once the project is 50% complete and it is determined the CONTRACTOR is performing

satisfactorily; the PROJECT ENGINEER will not retain any further retainage from periodic payments due to the CONTRACTOR. At that point, retainage will be held at 2.5% of the Contract value, until either the Contract is completed or the PROJECT ENGINEER deems it necessary to reinstate retainage.

3. The OWNER reserves the right to continue to retain payment, even in the event the CONTRACTOR's work is satisfactory, in order to ensure a total of 2.5% retainage over the life of the project (Note – 2.5% retainage over the life of the project is equal to 2.5% of the Contract value). The OWNER reserves the right to withhold additional payments for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the OWNER or reasonable evidence that a third-party claim will be filed. Per the N.C.G.S., if retainage is discontinued or reduced, the PROJECT ENGINEER can reinstate retainage if it has been determined the CONTRACTOR's performance is unsatisfactory. The PROJECT ENGINEER can reinstate retainage for each subsequent pay estimate up to the maximum amount of 5%.

D. Review of Applications

1. PROJECT ENGINEER will, within ten (10) business days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the application to OWNER or return the application to CONTRACTOR indicating in writing PROJECT ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR shall make the necessary corrections and resubmit the application.
2. PROJECT ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by PROJECT ENGINEER to OWNER, that to the best of PROJECT ENGINEER's knowledge, information and belief:
  - a. The Work has progressed to the point indicated;
  - b. The quality of the Work is generally in accordance with these Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Final Completion, to the results of any subsequent tests called for in these Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Part 9, and to any other qualifications stated in the recommendation); and
  - c. The conditions precedent to CONTRACTOR being entitled to such payment appears to have been fulfilled.
3. By recommending any such payment PROJECT ENGINEER shall not be deemed to have represented that:

- a. Inspections made to check the quality and/or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to PROJECT ENGINEER in these Contract Documents; or
    - b. There may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.
  4. Neither PROJECT ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments, nor PROJECT ENGINEER's recommendation of any payment, including final payment, will impose responsibility on PROJECT ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on PROJECT ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the monies paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any liens.
  5. PROJECT ENGINEER may refuse to recommend the whole or any part of any payment if, in PROJECT ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in this Part 12. PROJECT ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in PROJECT ENGINEER's opinion to protect OWNER from loss because:
    - a. The Work is defective, or completed Work has been damaged, requiring correction or replacement;
    - b. The Contract Price has been reduced by Change Orders;
    - c. OWNER has been required to correct defective Work or complete Work in accordance with Part 11; or
    - d. PROJECT ENGINEER has actual knowledge of the occurrence of any of the events outlined in Part 13.
- E. Payment Becomes Due
1. Twenty (20) business days after providing the Application for Payment to OWNER with PROJECT ENGINEER's recommendation, the amount recommended will become due and will be paid by OWNER to CONTRACTOR.
- F. Reduction in Payment

1. OWNER may refuse to make payment of the full amount recommended by the PROJECT ENGINEER because:
  - a. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such liens;
  - b. There are other items entitling OWNER to a reduction of the amount recommended; or
  - c. OWNER has actual knowledge of the occurrence of any of the events outlined in Part 13.
2. If OWNER refuses to make payment of the full amount recommended by PROJECT ENGINEER, OWNER must give CONTRACTOR written notice stating the reasons for such action and pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, upon satisfactory resolution of the issue.

#### **12.02 Contractor's Warranty of Title**

- A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all liens.

#### **12.03 Partial Utilization**

- A. Use by OWNER of any completed part of the Work which has specifically been identified in these Contract Documents or as authorized in writing by PROJECT ENGINEER, and is a separately functioning and usable part of the Work that can be utilized by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Final Completion of all the Work subject to the following conditions;
  1. OWNER and CONTRACTOR shall make an inspection of that part of the Work to determine its status of completion. If PROJECT ENGINEER does not consider that part of the Work to be complete, PROJECT ENGINEER will notify CONTRACTOR in writing. If PROJECT ENGINEER considers that part of the Work to be complete, the PROJECT ENGINEER will notify the CONTRACTOR in writing that the OWNER will begin partial utilization of that Work.
  2. The CONTRACTOR remains responsible for completing or fulfilling all contractual obligations remaining to the Work being utilized.
  3. No occupancy or separate operation of part of the Work will be accomplished prior to CONTRACTOR's compliance with the requirements of these Contract Documents pertaining to insurance.

#### **12.04 Final Completion**

- A. Completed work is all work outlined in these Contract Documents that has been installed, tested, inspected, disinfected, backfilled, paved, all above ground restoration has been performed, and CONTRACTOR has completed all the Work in an acceptable manner in accordance with the terms of the Contract. \*All Work outlined in these Contract Documents shall be completed, prior to the CONTRACTOR requesting an inspection by the PROJECT COORDINATOR.\*
  
- B. When the PROJECT COORDINATOR deems the project complete and ready for final inspection, the PROJECT COORDINATOR shall notify the PROJECT ENGINEER. The PROJECT ENGINEER shall schedule a final inspection between the OWNER and CONTRACTOR. During the final inspection any items documented shall be compiled in a final punch list and provided to the CONTRACTOR within five (5) business days. The CONTRACTOR shall be required to complete each item in the final inspection punch list within 30 calendar days of receipt. Failure to complete the punch list in that time may result in liquidated damages being assessed. The project will not be considered complete until all punch list items are completed and accepted, unless otherwise determined by the PROJECT ENGINEER. All punch list items shall be completed prior to release of final payment. Once PROJECT ENGINEER considers the Work to be complete a written notice of acceptance will be issued.

#### **12.05 Warranty Period**

- A. The warranty period will cover a corrections period of one (1) full year after the Final Completion date. The CONTRACTOR shall submit a warranty agreement form which guarantees to the PROJECT ENGINEER/OWNER that all Work has been completed in accordance with these Contract Documents and will not be defective. The CONTRACTOR shall address all defective work in accordance with Part 11.
  
- B. Neither the final certificate of completion, final payment, acceptance of the premises by the OWNER, nor any provisions of the Contract, nor any other act or instrument of the OWNER or PROJECT ENGINEER shall relieve the CONTRACTOR from responsibility for negligence, or faulty materials, workmanship, or failure to comply with these Contract Documents.

#### **12.06 Final Payment**

- A. Application for Final Payment
  - 1. After CONTRACTOR has, in the opinion of PROJECT ENGINEER, satisfactorily completed all items identified during the final inspection and has provided all completion documents required in accordance with these Contract Documents the CONTRACTOR may make application for final payment.
  - 2. The final Application for Payment shall be accompanied by:
    - a. All documentation called for in these Contract Documents;

- b. AIA document G707, "Consent of Surety Company to Final Payment;"
    - c. Complete and legally effective releases or waivers of all Lien rights arising out of or Liens filed in connection with the Work, (AIA document G706A, "Contractor's Affidavit or Release of Liens" and AIA document G706, "Contractor's Affidavit of Payments of Debts & Claims", or similar form) in accordance with Chapter 44A of the North Carolina General Statutes.
  - 3. Notwithstanding any other provision of these Contract Documents to the contrary, the OWNER is under no duty or obligation whatsoever to any Subcontractor, laborer, or other party to ensure that payments due and owed by CONTRACTOR to any of them are or will be made. Such parties shall rely only on CONTRACTOR's surety bonds for remedy of nonpayment by CONTRACTOR.
- B. Review of Application
  - 1. Once the PROJECT ENGINEER is satisfied that the Work has been completed and CONTRACTOR's obligations under these Contract Documents have been fulfilled, PROJECT ENGINEER will, within ten (10) business days indicate in writing PROJECT ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. Otherwise, PROJECT ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.
- C. Payment Becomes Due
  - 1. Twenty (20) business days after providing the Final Application for Payment to OWNER with PROJECT ENGINEER's recommendation, the amount recommended will become due and will be paid by OWNER to CONTRACTOR.

#### **12.07 Final Completion Delayed**

- A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if PROJECT ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of PROJECT ENGINEER, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted.

#### **12.08 Liquidated Damages**

- A. If the progress of completion of the Work is delayed by any fault, neglect, act or failure to act, on the part of the CONTRACTOR or anyone acting for or on the behalf of the CONTRACTOR so as to cause any additional costs, expense, liability or damage to the OWNER or any damage or additional cost or expense for which the OWNER may or shall become liable, the CONTRACTOR shall and does hereby agree to compensate the OWNER for, and to indemnify the OWNER against all such costs, expenses, liabilities

and damages.

- B. For each consecutive calendar day of delay beyond the time specified for the Contract Completion date, the CONTRACTOR shall be assessed liquidated damages as indicated in the Bid Form. Liquidated damages will be withheld from amounts which may be or may become payable to the CONTRACTOR by the OWNER. Should the cost of these sustained damages exceed the amounts owed by the OWNER, the CONTRACTOR shall pay the difference to the OWNER.

#### **12.09 Waiver of Claims**

- A. The making and acceptance of final payment will constitute:
  - 1. A waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection from failure to comply with these Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under these Contract Documents.
  - 2. A waiver of all Claims by CONTRACTOR against OWNER.

### **PART 13. SUSPENSION OF WORK AND TERMINATION**

#### **13.01 Owner May Suspend Work**

- A. At any time and without cause, OWNER may suspend the Work or any portion thereof by providing written notice to CONTRACTOR. The CONTRACTOR shall resume the Work as directed by OWNER. CONTRACTOR may be allowed an adjustment in the Contract Price or an extension of the Contract Time, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefore as provided in Part 8. An adjustment to the Contract Time shall only be considered if the CONTRACTOR was delayed for a time period greater than twenty-four (24) hours.
- B. If OWNER stops work in accordance with Part 11, or excludes CONTRACTOR from the Site, suspends CONTRACTOR's services, or suspends the Work or any portion thereof because of CONTRACTOR's failure to perform the Work in accordance with these Contract Documents, CONTRACTOR shall not be entitled to an extension of Contract Time.

#### **13.02 Owner May Terminate for Cause**

- A. The occurrence of any one or more of the following events will justify termination for cause:
  - 1. CONTRACTOR's persistent failure to perform the Work in accordance with these Contract Documents;
  - 2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;



3. CONTRACTOR's disregard of the authority of OWNER; or
  4. CONTRACTOR's violation in any substantial way of any provisions of these Contract Documents.
- B. If one or more of the events identified above occur, OWNER may, after giving CONTRACTOR and the surety seven (7) calendar days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site, take possession of the Work, incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work. In such case, CONTRACTOR shall not be entitled to receive any further payment.
- C. Any claims, costs, losses, and damages incurred by OWNER will be reviewed by PROJECT ENGINEER and, when so approved, incorporated in a Change Order. If all claims, costs, losses, and damages (including but not limited to all the fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other disputed resolution costs) exceed the unpaid balance of the Contract, CONTRACTOR shall pay the difference to OWNER. When exercising any rights or remedies under this paragraph, OWNER shall not be required to obtain the lowest price for the Work performed.
- D. Where OWNER has terminated CONTRACTOR's services, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.
- E. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or from such termination.

### **13.03 Owner May Terminate For Convenience**

- A. Upon seven (7) calendar days written notice to CONTRACTOR the OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):
1. For completed and approved Work executed in accordance with these Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  2. For expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by these Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
  3. For all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others;

4. For reasonable expenses directly attributable to termination as approved by OWNER.

#### **13.04 Contractor May Stop Work or Terminate**

- A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than ninety (90) consecutive calendar days by OWNER or under an order of court or other public authority, or PROJECT ENGINEER fails to act on any Application for Payment within thirty (30) calendar days after it is submitted, or OWNER fails for forty five (45) calendar days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven (7) calendar days written notice to OWNER, and provided OWNER does not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in Part 13. In lieu of terminating the Contract and without prejudice to any other right or remedy, if PROJECT ENGINEER has failed to act on an Application for Payment within thirty (30) calendar days after it is submitted, or OWNER has failed for forty-five (45) calendar days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven (7) calendar days after written notice to OWNER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest in accordance with the NCGS. The provisions of this paragraph are not intended to preclude CONTRACTOR from making a Claim under Part 8 for an adjustment in Contract Price or Contract Time or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.
- B. The words "suspended" and "suspension" in this Part 13 shall not refer to the legal doctrine known as "constructive suspension" but shall only refer to a stoppage of the Work by express order of OWNER without cause.

### **PART 14. DISPUTE RESOLUTION**

#### **14.01 Methods and Procedures**

- A. Binding arbitration will not be used as a means for settling claims, disputes, and other matters. However, the parties shall attempt to resolve any claims, disputes, or other matters by good faith negotiation. If good faith negotiation is unsuccessful, litigation may be brought as provided in this Part 14 no later than sixty (60) calendar days after Final Completion.
- B. These Contract Documents shall be construed, governed, and interpreted under the law of the State of North Carolina. Should any dispute arise out of or pertaining to the performance of these Contract Documents, such disputes shall be litigated and decided either solely in the District Court Division or in the Superior Court Division of the General Court of Justice of the County of Cumberland, North Carolina. This forum selection clause is mandatory and binding on all parties.

### **PART 15. MISCELLANEOUS**

#### **15.01 Giving Notice**

- A. Whenever any provision of these Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

#### **15.02 Cumulative Remedies**

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of these Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in these Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

#### **15.03 Survival of Obligations**

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with these Contract Documents, as well as all continuing obligations indicated in these Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract.

#### **15.04 Controlling Law**

- A. This Contract is to be governed by the law of the State of North Carolina. All claims, disputes, and other matters in question arising out of, or relating to, this Contract not resolved by negotiation shall be resolved by legal action instituted and tried in the General Courts of North Carolina under North Carolina law with venue for trial being Cumberland County.

#### **15.05 Antitrust**

- A. By entering into a Contract, CONTRACTOR conveys, sells, assigns, and transfers to OWNER all rights, title, and interest in and to all causes of action CONTRACTOR may now have or hereafter acquire under the antitrust laws of the United States and the State of North Carolina relating to the particular goods or services purchased or acquired by OWNER under the said Contract.

**15.06 Lien**

- A. It is expressly agreed that after any payment has been made by OWNER to CONTRACTOR for work done, or labor or material supplied as required and described in the Contract, OWNER will have a lien upon all material delivered to the site by or for CONTRACTOR or any Subcontractor.

**15.07 Employment Discrimination**

- A. During the performance of this Contract, CONTRACTOR agrees as follows:
1. CONTRACTOR will not discriminate against any employee or applicant for employment because of race, religion, color, sex, disability, or national origin, except where religion, sex, disability, or national origin is a legitimate occupational qualification reasonably necessary to the normal operation of CONTRACTOR. CONTRACTOR agrees to post notices setting forth the provisions of this nondiscrimination clause in areas accessible to employees and applicants for employment.
  2. CONTRACTOR, in all solicitations or advertisements for employees placed by or on behalf of CONTRACTOR, will state that such CONTRACTOR is an equal opportunity employer.
  3. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for meeting the requirements of this section.
- B. CONTRACTOR will include the provisions of the foregoing Paragraphs 1, 2, and 3 in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Subcontractor or vendor.

\*\*\*\*\* END OF SECTION \*\*\*\*\*

## 00 75 00 | COVID-19

As North Carolina and the nation continues to deal with the COVID 19 pandemic, we must all take necessary steps to ensure the health and safety of employees, coworkers, family, friends, associates and people that we come in contact with on a daily basis. At PWC we implemented measures including requiring our employees to conduct temperature and wellness checks, wear a face covering or mask, whenever possible, maintain proper social distancing (minimum of 6 feet) and take other actions such as washing their hands, using approved sanitizer and wiping down surfaces, especially commonly shared equipment or tools. This applies to employees working in our facilities, working in public or at field sites. For firms who are under contract with PWC or working under purchase orders, those firms are expected to comply with all OSHA/EPA guidelines, CDC recommendations including any applicable North Carolina Executive Orders regarding the performance of work under COVID 19 conditions. Examples of such guidance can be found at the following:

### **OSHA COVID-19 Overview**

<https://www.osha.gov/SLTC/covid-19/>

### **OSHA COVID-19 – Control and Prevention / Construction Work**

[https://www.osha.gov/SLTC/covid-19/construction.html#:~:text=Keep%20in%2Dperson%20meetings%20\(including,Fill%20hand%20sanitizer%20dispensers%20regularly.](https://www.osha.gov/SLTC/covid-19/construction.html#:~:text=Keep%20in%2Dperson%20meetings%20(including,Fill%20hand%20sanitizer%20dispensers%20regularly.)

<https://www.osha.gov/Publications/OSHA4000.pdf>

### **North Carolina COVID-19 Executive Orders**

<https://www.nc.gov/covid-19/covid-19-executive-orders>

### **Center for Disease Control**

<https://www.cdc.gov/coronavirus/2019-ncov/index.html>

### **Implementing Safety Practices for Critical Infrastructure Workers**

<https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html>

### **Essential Staff- Do's & Dont's**

[https://www.cdc.gov/coronavirus/2019-ncov/downloads/Essential-Critical-Workers\\_Dos-and- Donts.pdf](https://www.cdc.gov/coronavirus/2019-ncov/downloads/Essential-Critical-Workers_Dos-and- Donts.pdf)

### **NC Licensing Board for General Contractors**

<https://www.ncibgc.org/2020/07/02/board-buzz-summer/> NC

### **Association of General Contractors**

<https://www.cagc.org/CAGC/SafetyHR/CAGC/Safety/SafelyHomeInitiative.aspx?hkey=e3439388-0c36-4755-91bd-4c8fc6d22a41>

### **NC Department of Health and Human Services**

<https://covid19.ncdhhs.gov/>

### **Cumberland County Health Department**

<https://www.co.cumberland.nc.us/departments/public-health-group/public-health>

**Department of Homeland Security**

<https://www.ready.gov/pandemic>

**Cape Fear Valley- What to do if you have COVID symptoms**

[https://www.youtube.com/watch?time\\_continue=1&v=tD0D7Apa\\_vw&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=1&v=tD0D7Apa_vw&feature=emb_logo) **FAYPWC**

**COVID Response**

<https://www.faypwc.com/covid-19-update/>

**Small Business Administration**

<https://www.sba.gov/page/coronavirus-covid-19-small-business-guidance-loan-resources>

As an additional step to ensure the health and safety of contractor employees and PWC employees, should a contractor's employee test positive for COVID 19 the contractor must immediately inform the PWC project manager/supervisor or their primary point of contact at PWC and the employee should be performing work at PWC facilities or field sites until medically cleared. This is necessary so PWC can inform our employees, conduct our own method of contact tracing for our employees and take any measures necessary such as quarantining PWC employees who may have been in contact with the individual who tested positive.

These actions are necessary to ensure the health and safety of all and to ensure that contract performance can be achieved under the conditions of this pandemic.

Contractor must provide a plan with their proposal that describes their plan for working under COVID-19 conditions. The plan should address the Contractor's approach to protect their employees, PWC employees, along with any other Contractor's working on PWC's locations. This may include the Contractor's approach towards employee use of PPE, such as face masks, sanitizing commonly shared tools or equipment, practicing social distancing as work conditions permit, and working within close proximity of others. The plan may also address any other actions that the Contractor will be taking, such as conducting daily temperature checks, conducting symptom checks and trackers, and any other actions the Contractor deems appropriate to protect the health and safety of their employees, PWC employees, and any other Contractor's working on PWC's locations.

**00 80 00 | REVISIONS, CLARIFICATIONS, AND MODIFICATIONS TO CONSTRUCTION DOCUMENTS**

This section may contain the record addenda, revisions, clarifications, and modifications.

# **ARCHITECTURAL DRAWINGS**

# **TECHNICAL SPECIFICATIONS**





## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Contractor's use of site and premises.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and Drawing conventions.

##### B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.2 PROJECT INFORMATION

##### A. Project Identification: Re-Roofing at Transfer Building, Thickening Building, Water Resources Vehicle Shed, and Electric Vehicle Shed.

1. Project Locations:
  - a. Transfer and Thickening Buildings: 601 N. Eastern Blvd., Fayetteville, NC 28301.
  - b. Vehicle Sheds: 955 Old Wilmington Rd., Fayetteville, NC 28301.

##### B. Owner: Fayetteville Public Works Commission.

1. Owner's Representative: Kevin Howell; kevin.howell@faypwc.com; (910) 223-4361 ofc.

##### C. Engineer: Fleming & Associates, PA; 1004 Hay St., Fayetteville, NC 28305; (910) 433-2825; www.flemingandassociates.com.

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

##### A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Re-roofing at four buildings totaling approximately 37,050 square feet of roof area and other Work indicated in the Contract Documents.

##### B. Type of Contract:

1. Project will be constructed under a single prime contract.

#### 1.4 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Unrestricted Use of Site: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Driveways, Walkways, and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

#### 1.5 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

#### 1.6 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
  - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.
  - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
  - 2. Obtain Owner's written permission before proceeding with disruptive operations.

- E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.

#### 1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 012100 - ALLOWANCES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
  - 1. Contingency allowances.
- C. Related Requirements:
  - 1. Section 012200 "Unit Prices" for procedures for using unit prices, including adjustment of quantity allowances when applicable.

#### 1.2 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Engineer for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, vehicle expenses, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.
- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Contingency Allowance: Include a contingency allowance of \$25,000.00 for use according to Owner's written instructions.

END OF SECTION 012100

## SECTION 012200 - UNIT PRICES

### PART 1 - GENERAL

#### 1.1 SUMMARY

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

#### 1.2 DEFINITIONS

- A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

#### 1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, vehicle expenses, 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.
- C. 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.
- D. 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

#### 3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 01 – Metal roof deck repair:
  - 1. Description: Reinforce metal roof deck according to details 6/R3.1 and 6/R4.1.
  - 2. Unit of Measurement: \$/square foot.
  - 3. Quantity Allowance: 300 square feet.

- B. Unit Price No. 02 – Metal roof deck replacement:
1. Description: Reinforce metal roof deck according to details 6/R3.1 and 6/R4.1.
  2. Unit of Measurement: \$/3 feet by 6 feet sheet.
  3. Quantity Allowance: 20 sheets (360 square feet).
- C. Unit Price No. 03 – Retrofit roof drain installation:
1. Description: Retrofit existing roof drain per Section 221423 "Storm Drainage Piping Specialties."
  2. Unit of Measurement: \$/drain.
  3. Quantity Allowance: 3 drains.
- D. Unit Price No. 04 – Replacement of existing 2x4:
1. Description: Replace existing 2x4 with treated 2x4 according to Section 061053 "Miscellaneous Rough Carpentry."
  2. Unit of Measurement: \$/linear foot.
  3. Quantity Allowance: 300 linear feet.
- E. Unit Price No. 05 – Replacement of existing 2x6:
1. Description: Replace existing 2x6 with treated 2x6 according to Section 061053 "Miscellaneous Rough Carpentry."
  2. Unit of Measurement: \$/linear foot.
  3. Quantity Allowance: 300 linear feet.
- F. Unit Price No. 06 – Replacement of existing 2x8:
1. Description: Replace existing 2x8 with treated 2x8 according to Section 061053 "Miscellaneous Rough Carpentry."
  2. Unit of Measurement: \$/linear foot.
  3. Quantity Allowance: 50 linear feet.
- G. Unit Price No. 07 – Walkway pads:
1. Description: Install walkway pads per Sections 075419 "Polyvinyl-Chloride (PVC) Roofing".
  2. Unit of Measurement: \$/square foot.
  3. Quantity Allowance: See plans.
- H. Unit Price No. 08 – Polyiso insulation:
1. Description: Install new polyiso insulation according to Sections 075419 "Polyvinyl-Chloride (PVC) Roofing."
  2. Unit of Measurement: \$/square foot of 2.0" thick insulation.
  3. Quantity Allowance: 500 square feet plus amount indicated on roof plans.

END OF SECTION 012200



## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Submittal schedule requirements.
  - 2. Administrative and procedural requirements for submittals.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

#### 1.3 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
  - 1. Project name.
  - 2. Date.
  - 3. Name of Engineer.
  - 4. Name of Contractor.
  - 5. Name of firm or entity that prepared submittal.
  - 6. Names of subcontractor, manufacturer, and supplier.
  - 7. Category and type of submittal.
  - 8. Submittal purpose and description.
  - 9. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
  - 10. Drawing number and detail references, as appropriate.
  - 11. Indication of full or partial submittal.
  - 12. Location(s) where product is to be installed, as appropriate.
  - 13. Other necessary identification.
  - 14. Remarks.
  - 15. Signature of transmitter.
- B. Options: Identify options requiring selection by Engineer.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include

relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

- D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
- E. Color Charts: Submit three hard copies in addition to the PDF submittal. Hard copy shall be produced by the manufacturer and not a printout or photocopy.

#### 1.4 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  - 1. Email: Prepare submittals as PDF package, and transmit to Engineer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Engineer.
  - 2. Color charts: Prepare in hard copy format and deliver to Engineer.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

## 1.5 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Engineer's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
    - a. Project name and submittal number.
    - b. Generic description of Sample.
    - c. Product name and name of manufacturer.

- d. Sample source.
  - e. Number and title of applicable Specification Section.
  - f. Specification paragraph number and generic name of each item.
3. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
  2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
  4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
  5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - a. Name of evaluation organization.
  - b. Date of evaluation.
  - c. Time period when report is in effect.
  - d. Product and manufacturers' names.
  - e. Description of product.
  - f. Test procedures and results.
  - g. Limitations of use.

1.6 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

#### 1.7 ENGINEER'S REVIEW

- A. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required, and return it.
  1. PDF Submittals: Engineer will indicate, via markup on each submittal, the appropriate action.
  2. Color charts: Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Engineer will discard submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Engineer without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

## SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Rooftop equipment bases and support curbs.
  - 2. Wood blocking and nailers.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
  - 1. Preservative-treated wood.
  - 2. Power-driven fasteners.

### PART 2 - PRODUCTS

#### 2.1 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 mark each piece of lumber with grade stamp of grading agency.
  - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

#### 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC3b for exterior construction not in contact with ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all miscellaneous carpentry unless otherwise indicated.

### 2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
  - 3. Rooftop equipment bases and support curbs.
- B. Dimension Lumber Items: Pressure treated no. 2 grade lumber Southern Yellow Pine.

### 2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.
- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

### 2.5 PLYWOOD NAILERS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C, in thickness indicated or, if not indicated, to match existing.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction.
- C. Do not splice structural members between supports unless otherwise indicated.



- D. Comply with AWPAs M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- E. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 2. ICC-ES evaluation report for fastener.

### 3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

## SECTION 070150.19-Tr&Th - PREPARATION FOR REROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. The Work of This Section Includes **(for use at Transfer and Thickening Buildings):**
  - 1. Full roof tear-off.
  - 2. Base flashing removal.
  - 3. Disposal.

#### 1.2 DEFINITIONS

- A. EPS: Molded (expanded) polystyrene.
- B. Full Roof Tear-off: Removal of existing roofing system down to existing roof deck.
- C. OSB: Oriented strand board.
- D. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.
- E. Roof Re-Cover Preparation: Existing roofing system is to remain and be prepared for new roof installed over it.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Field Test Reports: Adhesion test report.
- B. Photographs or Video: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations.
  - 1. Submit before Work begins.

#### 1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Comply with governing EPA notification regulations before beginning roofing removal.
  - 2. Comply with hauling and disposal regulations of authorities having jurisdiction.

## 1.5 FIELD CONDITIONS

- A. Existing Roofing System: Built-up asphalt roofing at Transfer and Thickening Buildings.
- B. Owner will occupy portions of building immediately below reroofing area.
  - 1. Conduct reroofing so Owner's operations are not disrupted.
  - 2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
  - 3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
  - 4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.
    - a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
  - 1. Remove only as much roofing in one day as can be made watertight in the same day.
- F. Hazardous Materials:
  - 1. It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.
  - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner.
    - a. Hazardous materials will be removed by Owner under a separate contract.

## PART 2 - PRODUCTS

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.
- B. Shut off rooftop utilities and service piping before beginning the Work.
- C. Test existing roof drains to verify that they are not blocked or restricted.

1. Immediately notify Engineer of any blockages or restrictions.
- D. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.
1. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- E. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- F. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.
1. Prevent debris from entering or blocking roof drains and conductors.
    - a. Use roof-drain plugs specifically designed for this purpose.
    - b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  2. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.
    - a. Do not permit water to enter into or under existing roofing system components that are to remain.

### 3.2 ROOF TEAR-OFF

- A. Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.
- C. Full Roof Tear-off: Where indicated on Drawings, remove existing roofing and other roofing system components down to the existing roof deck.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Engineer.
  1. Do not proceed with installation until directed by Engineer.

### 3.4 BASE FLASHING REMOVAL

- A. Remove existing base flashings.
  1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain.

1. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish as existing.
- C. When directed by Engineer, replace parapet framing, wood blocking, curbs, and nailers to comply with Section 061000 "Rough Carpentry."

### 3.5 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency to conduct adhesion tests according to SPRI IA-1, and submit test report to Engineer and roofing manufacturer before installing new roofing system.
1. Obtain Engineer's and roofing manufacturer's approval to proceed with specified adhesive pattern.
    - a. Roofing manufacturer may furnish revised adhesive pattern commensurate with test results.

### 3.6 DISPOSAL

- A. Collect demolished materials and place in containers.
1. Promptly dispose of demolished materials.
  2. Do not allow demolished materials to accumulate on-site.
  3. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

## SECTION 070150.19 - PREPARATION FOR REROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. The Work of This Section Includes **(for use at Vehicle Sheds):**

1. Partial roof tear-off.
2. Roof re-cover preparation.
3. Base flashing removal.
4. Fastener pull-out testing.

#### 1.2 UNIT PRICES

A. Work of this Section is affected by insulation removal and replacement unit price.

#### 1.3 DEFINITIONS

- A. Partial Roof Tear-off: Removal of selected components and accessories from existing roofing system.
- B. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.
- C. Roof Re-Cover Preparation: Existing roofing system is to remain and be prepared for new roof installed over it.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field Test Reports: Fastener pull-out test report.
- B. Photographs or Video: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations.
1. Submit before Work begins.

## 1.6 QUALITY ASSURANCE

### A. Regulatory Requirements:

1. Comply with governing EPA notification regulations before beginning roofing removal.
2. Comply with hauling and disposal regulations of authorities having jurisdiction.

## 1.7 FIELD CONDITIONS

### A. Existing Roofing System: Coated PVC roofing.

### B. Owner will occupy portions of building immediately below reroofing area.

1. Conduct reroofing so Owner's operations are not disrupted.
2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.
  - a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.

### C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

### D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

### E. Limit construction loads on existing roof areas to remain, and existing roof areas scheduled to be reroofed to 20 psf for uniformly distributed loads.

### F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

1. Remove only as much roofing in one day as can be made watertight in the same day.

### G. Hazardous Materials:

1. It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.
  - a. Hazardous materials will be removed by Owner before start of the Work.

## PART 2 - PRODUCTS

### 2.1 INFILL AND REPLACEMENT MATERIALS

- A. Use infill materials matching existing roofing system materials unless otherwise indicated.
  - 1. Infill materials are specified in Section 075419 "Polyvinyl-Chloride (PVC) Roofing" unless otherwise indicated.
- B. Wood blocking, curbs, and nailers are specified in Section 061000 "Rough Carpentry."
- C. Fasteners: Factory-coated steel fasteners with metal or plastic plates listed in FM Approvals' RoofNav, and acceptable to new roofing system manufacturer.

### 2.2 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new roofing system.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protection of In-Place Conditions:
  - 1. Protect existing roofing system that is not to be reroofed.
- B. Test existing roof drains to verify that they are not blocked or restricted.
  - 1. Immediately notify Engineer of any blockages or restrictions.
- C. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- D. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.
  - 1. Prevent debris from entering or blocking roof drains and conductors.
    - a. Use roof-drain plugs specifically designed for this purpose.
    - b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  - 2. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.
    - a. Do not permit water to enter into or under existing roofing system components that are to remain.



### 3.2 ROOF TEAR-OFF (Water Resources Vehicle Shed)

- A. Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.
- C. Partial Roof Tear-off: Where indicated on Drawings, remove existing roofing down to existing insulation and immediately check for presence of moisture.
  - 1. Remove wet or damp materials below existing roofing and above deck as directed by Engineer.
    - a. Removal is paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.
  - 2. Inspect wood blocking, curbs, and nailers for deterioration and damage.
    - a. If wood blocking, curbs, or nailers have deteriorated, immediately notify Engineer.
    - b. Removal is paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.
  - 3. Remove excess asphalt from steel deck that is exposed by removal of wet or damp materials.
    - a. A maximum of **15 lb/100 sq. ft.** of asphalt is permitted to remain on steel decks.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Engineer.
  - 1. Do not proceed with installation until directed by Engineer.
- C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Engineer.
  - 1. Do not proceed with installation until directed by Engineer.

### 3.4 INFILL MATERIALS INSTALLATION

- A. Immediately after roof tear-off, and inspection and repair, if needed, of deck, fill in tear-off areas to match existing roofing system construction.
  - 1. Installation of infill materials is specified in Section 075419 "Polyvinyl-Chloride (PVC) Roofing."
  - 2. Installation of wood blocking, curbs, and nailers is specified in Section 061000 "Rough Carpentry."
- B. Install new roofing patch over roof infill area.
  - 1. If new roofing is installed the same day tear-off is made, roofing patch is not required.

### 3.5 ROOF RE-COVER PREPARATION (Electric Vehicle Shed)

- A. Remove blisters, ridges, buckles, mechanically attached roofing fastener buttons projecting above roofing, and other substrate irregularities from existing roofing that inhibit new recover boards from conforming to substrate.
  - 1. Broom clean existing substrate.
  - 2. Verify that existing substrate is dry.
    - a. Spot check substrates with an electrical capacitance moisture-detection meter.
  - 3. Remove materials that are wet or damp.
    - a. Removal will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

### 3.6 BASE FLASHING REMOVAL

- A. Remove existing base flashings.
  - 1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain.
  - 1. Replace metal counterflashings damaged during removal with counterflashings specified in Section 076200 "Sheet Metal Flashing and Trim."

### 3.7 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency to conduct fastener pull-out tests according to SPRI FX-1, and submit test report to Engineer and roofing manufacturer before installing new roofing system.
  - 1. Obtain Engineer's and roofing manufacturer's approval to proceed with specified fastening pattern.
    - a. Roofing manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

### 3.8 DISPOSAL

- A. Collect demolished materials and place in containers.
  - 1. Promptly dispose of demolished materials.
  - 2. Do not allow demolished materials to accumulate on-site.
  - 3. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

## SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes **(for use at Thickening Building):**

1. Adhered polyvinyl chloride (PVC) roofing system.
2. Accessory roofing materials.
3. Roof insulation.
4. Insulation accessories and cover board.
5. Walkways.

#### 1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

#### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Engineer, and roofing Installer.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Tapered insulation thickness and slopes.
3. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Field Test Reports:

1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

B. Field quality-control reports.

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

#### 1.6 CLOSEOUT SUBMITTALS

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

#### 1.7 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturers: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.
2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

B. Quality assurance inspections shall be made by a qualified, trained representative of the membrane manufacturer to review the installed roof system and provide written reports of findings; such reports shall be forwarded to the Engineer. The field representative shall make an initial visit within the first four days of membrane application. The contractor shall coordinate the dates and times of the initial and final inspections of the field representative with the Engineer and Owner. Any corrective action deemed necessary by the inspector shall be completed prior to close-out.

C. Membrane Formulation: Minimum twenty-year track record with same formulation.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

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

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

#### 1.9 FIELD CONDITIONS

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

#### 1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  - 1. Special warranty includes roof membrane, base flashings, roof insulation, cover boards, and other components of roofing system.
  - 2. Warranty Period: 20 years from date of final completion.
  - 3. Wind speeds below 71 mph shall not be excepted.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, cover boards, and walkway products, for the following warranty period:
  - 1. Warranty Period: Three years from date of final completion.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746, ASTM D 4272/D 4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

- C. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- A. Wind Uplift Resistance: Design roofing system to resist the wind uplift pressures shown on the North Carolina Building Code Summary for Commercial Roof Projects on sheet G1.1 when tested according to FM Approvals 4474, UL 580, or UL 1897.
- B. ENERGY STAR Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- C. Energy Performance: Roofing system shall have a three-year-age solar reflectance of not less than 0.55 and a minimum three-year-aged thermal emittance of 0.75 when tested according to CRRC-1.
- D. 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.
- A. Interior Fire-Test Exposure: Satisfactorily pass UL 1256; for application and roof slopes indicated; testing by a qualified testing agency. The smoke-developed index shall not be limited for roof applications.

## 2.2 POLYVINYL CHLORIDE (PVC) ROOFING

- A. KEE Sheet: ASTM D 6754, fabric reinforced, felt-backed.
  - 1. Exposed Face Color: Off white.
  - 2. Roll Width for Mechanically Attached Applications: 8 feet, maximum.
  - 3. Manufacturer:
    - a. FiberTite 60 mil SM.
- B. PVC Sheet: ASTM D 4434, reinforced, felt-backed.
  - 1. Thickness: 80 mils, minimum.
  - 2. Exposed Face Color: White.
  - 3. Manufacturers:
    - a. Carlisle Sure-Flex PVC FleeceBACK.
    - b. Flex FB 80 PVC.
    - c. Sika Sarnafil G 410-80 Feltback.
    - d. Siplast Parasolo PVC KEE Fleece-Back.
- C. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

## 2.3 ACCESSORY ROOFING MATERIALS

- A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
  - 1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, and color as PVC sheet.
  - 1. Thickness: 60 mil.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Roof Vents: As recommended by roof membrane manufacturer.
- E. Low-Rise, Urethane, Fabric-Backed Membrane Adhesive: Roof system manufacturer's standard spray-applied, low-rise, two-component urethane adhesive formulated for compatibility and use with fabric-backed membrane roofing.
- F. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- G. Miscellaneous Accessories: Provide 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.

## 2.4 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by PVC roof membrane manufacturer, approved for use in FM Approvals' RoofNav listed roof assemblies.
- B. Molded (Expanded) Polystyrene Board Insulation: ASTM C578, Type VIII, 1.15-lb/cu. ft. minimum density, 13-psi minimum compressive strength, square edge.
  - 1. Thermal Resistance: R-value of 3.8 per 1 inch.
  - 2. Size: 48 by 48 inches.
  - 3. Thickness:
    - a. Base Layer: 1/2 inch.
- C. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
  - 1. Compressive Strength: 20 psi.
  - 2. Size: 48 by 48 inches.
  - 3. Thickness:
    - a. Base Layer: 1/2 inches.
- D. Tapered Insulation: Provide factory-tapered insulation boards.
  - 1. Material: Match roof insulation.
  - 2. Minimum Thickness: 1/4 inch.
  - 3. Slope:
    - a. Roof Field: 1/8 inch per foot unless otherwise indicated on Drawings.
    - b. Saddles and Crickets: 1/4 inch per foot unless otherwise indicated on Drawings.

## 2.5 INSULATION ACCESSORIES AND COVER BOARD

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
  - 1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
- C. Glass-Mat Gypsum Cover Board: ASTM C1177/C1177M, water-resistant gypsum board.
  - 1. Thickness: **1/4 inch**.
  - 2. Surface Finish: Factory primed.
- D. Fiber-Reinforced Cementitious Cover Board: ASTM C1325, fiber-mat-reinforced cementitious board.
  - 1. Thickness: **1/4 inch minimum**.

## 2.6 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately **3/16 inch** thick and acceptable to roofing system manufacturer.
  - 1. Size: Approximately **36 by 60 inches**.
  - 2. Color: Contrasting with roof membrane.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
  - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
  - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
  - 3. Verify that concrete substrate is visibly dry and free of moisture.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.



### 3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Perform adhesion tests according to roof system manufacturer's written instructions.
  - 1. Submit test result within 24 hours of performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted ribbon patterns required to achieve specified wind uplift requirements.

### 3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

### 3.4 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Concrete Decks:
  - 1. Install base layer of insulation with joints staggered not less than **24 inches** in adjacent rows.
    - a. Make joints between adjacent insulation boards not more than **1/4 inch** in width.
    - b. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus **24 inches**.
      - 1) Trim insulation so that water flow is unrestricted.
    - c. Fill gaps exceeding **1/4 inch** with insulation.
    - d. Cut and fit insulation within **1/4 inch** of nailers, projections, and penetrations.
    - e. Adhere base layer of insulation to concrete roof deck according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:

- 1) Set insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
2. Install tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
  - a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
  - b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
  - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
    - 1) Trim insulation so that water flow is unrestricted.
  - e. Fill gaps exceeding 1/4 inch with insulation.
  - f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
  - g. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.5 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
  1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  2. At internal roof drains, conform to slope of drain sump.
    - a. Trim cover board so that water flow is unrestricted.
  3. Cut and fit cover board tight to nailers, projections, and penetrations.
  4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.6 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
- D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

- E. Fabric-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.
- F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- G. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- H. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings 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 roof membrane and sheet flashings.
  - 2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
  - 3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- I. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.7 INSTALLATION OF BASE FLASHING

- 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 through termination bars.

### 3.8 INSTALLATION OF WALKWAYS

- A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
  - 1. Install flexible walkways at the following locations:
    - a. Perimeter of each rooftop unit.
    - b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
    - c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
    - d. Top and bottom of each roof access ladder.
    - e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.

- f. Locations indicated on Drawings.
  - g. As required by roof membrane manufacturer's warranty requirements.
2. Provide **6-inch** clearance between adjoining pads.
  3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.9 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Engineer, and to prepare inspection report.
- B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

### 3.10 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Engineer 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.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. After membrane installation is complete, clean membrane using cleaning agents and procedures recommended by membrane manufacturer.
- E. Do not store new or demolished materials on new membrane. Do not allow traffic across new membrane.

### 3.11 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS \_\_\_\_\_ of \_\_\_\_\_, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
  1. Owner: **<Insert name of Owner>**.
  2. Owner Address: **<Insert address>**.
  3. Building Name/Type: **<Insert information>**.
  4. Building Address: **<Insert address>**.
  5. Area of Work: **<Insert information>**.
  6. Acceptance Date: \_\_\_\_\_.

7. Warranty Period: <Insert time>.
8. Expiration Date: \_\_\_\_\_.

- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
    - a. lightning;
    - b. peak gust wind speed exceeding 71 mph;
    - c. fire;
    - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    - f. vapor condensation on bottom of roofing; and
    - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
  2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
  3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
  4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
  5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
  6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

1. Authorized Signature: \_\_\_\_\_.
2. Name: \_\_\_\_\_.
3. Title: \_\_\_\_\_.

END OF SECTION 075419

## SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes **(for use at Transfer Building):**

1. Adhered polyvinyl chloride (PVC) roofing system.
2. Accessory roofing materials.
3. cover board.
4. Walkways.

B. Related Requirements:

1. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
2. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
3. Section 221423 "Storm Drainage Piping Specialties" for roof drains.

#### 1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

#### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Engineer, and roofing Installer.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.
- B. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field Test Reports:
  1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
- B. Field quality-control reports.
- C. Sample Warranties: For manufacturer's special warranties.

#### 1.6 CLOSEOUT SUBMITTALS

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

#### 1.7 QUALITY ASSURANCE

- A. Qualifications:
  1. Manufacturers: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.
  2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- B. Quality assurance inspections shall be made by a qualified, trained representative of the membrane manufacturer to review the installed roof system and provide written reports of findings; such reports shall be forwarded to the Engineer. The field representative shall make an initial visit within the first four days of membrane application. The contractor shall coordinate the dates and times of the initial and final inspections of the field representative with the Engineer and Owner. Any corrective action deemed necessary by the inspector shall be completed prior to close-out.
- C. Membrane Formulation: Minimum twenty-year track record with same formulation.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

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



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

## 1.9 FIELD CONDITIONS

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

## 1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  - 1. Special warranty includes roof membrane, base flashings, roof insulation, cover boards, and other components of roofing system.
  - 2. Warranty Period: 20 years from date of final completion.
  - 3. Wind speeds below 71 mph shall not be excepted.
  - 4. Ponded water shall not be excepted.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, cover boards, and walkway products, for the following warranty period:
  - 1. Warranty Period: Three years from date of final completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746, ASTM D 4272/D 4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

- C. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- D. Wind Uplift Resistance: Design roofing system to resist the wind uplift pressures shown on the North Carolina Building Code Summary for Commercial Roof Projects on sheet G1.1 when tested according to FM Approvals 4474, UL 580, or UL 1897.
- E. ENERGY STAR Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- F. Energy Performance: Roofing system shall have a three-year-age solar reflectance of not less than 0.55 and a minimum three-year-aged thermal emittance of 0.75 when tested according to CRRC-1.
- G. 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.
- H. Interior Fire-Test Exposure: Satisfactorily pass UL 1256; for application and roof slopes indicated; testing by a qualified testing agency. The smoke-developed index shall not be limited for roof applications.

## 2.2 POLYVINYL CHLORIDE (PVC) ROOFING

- A. KEE Sheet: ASTM D 6754, fabric reinforced.
  - 1. Exposed Face Color: Off white.
  - 2. Manufacturer:
    - a. FiberTite 60 mil SM.
- B. PVC Sheet: ASTM D 4434, reinforced.
  - 1. Thickness: 80 mils, minimum.
  - 2. Exposed Face Color: White.
  - 3. Manufacturers:
    - a. Carlisle Sure-Flex PVC.
    - b. Flex 80 PVC.
    - c. Sika Sarnafil S 327-80.
    - d. Siplast Parasolo PVC KEE.
- C. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

## 2.3 ACCESSORY ROOFING MATERIALS

- A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
  - 1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.
  - 1. Thickness: 60 mil.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Roof Vents: As recommended by roof membrane manufacturer.
  - 1. Size: Not less than 4-inch diameter.
- E. Bonding Adhesive: Manufacturer's standard.
- F. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- H. Miscellaneous Accessories: Provide 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.

#### 2.4 COVER BOARD

- A. Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
  - 1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
- B. Glass-Mat Gypsum Cover Board: ASTM C1177/C1177M, water-resistant gypsum board.
  - 1. Thickness: 1/4 inch.
  - 2. Surface Finish: Factory primed.
- C. Fiber-Reinforced Cementitious Cover Board: ASTM C1325, fiber-mat-reinforced cementitious board.
  - 1. Thickness: 1/4 inch.

#### 2.5 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
  - 1. Size: Approximately 36 by 60 inches.
  - 2. Color: Contrasting with roof membrane.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
  - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
  - 2. Verify that concrete substrate is visibly dry and free of moisture.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- A. Perform adhesion tests according to roof system manufacturer's written instructions.
  - 1. Submit test result within 24 hours of performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted ribbon patterns required to achieve specified wind uplift requirements.

### 3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

### 3.4 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of **6 inches** in each direction.
  - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 2. Cut and fit cover board tight to nailers, projections, and penetrations.

3. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
  - a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.5 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- E. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings 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 roof membrane and sheet flashings.
  2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
  3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- F. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.6 INSTALLATION OF BASE FLASHING

- 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 through termination bars.

### 3.7 INSTALLATION OF WALKWAYS

- A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
  - 1. Install flexible walkways at the following locations:
    - a. Top and bottom of each roof access ladder.
    - b. Locations indicated on Drawings.
    - c. As required by roof membrane manufacturer's warranty requirements.
  - 2. Provide **6-inch** clearance between adjoining pads.
  - 3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.8 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Engineer, and to prepare inspection report.
- B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

### 3.9 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Engineer 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.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. After membrane installation is complete, clean membrane using cleaning agents and procedures recommended by membrane manufacturer.
- E. Do not store new or demolished materials on new membrane. Do not allow traffic across new membrane.

### 3.10 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS \_\_\_\_\_ of \_\_\_\_\_, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: <Insert name of Owner>.
2. Owner Address: <Insert address>.
3. Building Name/Type: <Insert information>.
4. Building Address: <Insert address>.
5. Area of Work: <Insert information>.
6. Acceptance Date: \_\_\_\_\_.
7. Warranty Period: <Insert time>.
8. Expiration Date: \_\_\_\_\_.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
  - a. lightning;
  - b. peak gust wind speed exceeding 71 mph;
  - c. fire;
  - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
  - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
  - f. vapor condensation on bottom of roofing; and
  - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded

basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

- 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
- 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

- 1. Authorized Signature: \_\_\_\_\_.
- 2. Name: \_\_\_\_\_.
- 3. Title: \_\_\_\_\_.

END OF SECTION 075419



## SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes **(for use at Vehicle Sheds):**

1. Mechanically fastened polyvinyl chloride (PVC) roofing system.
2. Accessory roofing materials.
3. Insulation accessories and cover board.
4. Walkways.

#### 1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

#### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Engineer, and roofing Installer.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Fastening patterns for corner, perimeter, and field-of-roof locations.

- C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field Test Reports:
  - 1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
- B. Field quality-control reports.
- C. Sample Warranties: For manufacturer's special warranties.

#### 1.6 CLOSEOUT SUBMITTALS

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

#### 1.7 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Manufacturers: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.
  - 2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- B. Quality assurance inspections shall be made by a qualified, trained representative of the membrane manufacturer to review the installed roof system and provide written reports of findings; such reports shall be forwarded to the Engineer. The field representative shall make an initial visit within the first four days of membrane application. The contractor shall coordinate the dates and times of the initial and final inspections of the field representative with the Engineer and Owner. Any corrective action deemed necessary by the inspector shall be completed prior to close-out.
- C. Membrane Formulation: Minimum twenty-year track record with same formulation.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

## 1.9 FIELD CONDITIONS

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

## 1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  1. Special warranty includes roof membrane, base flashings, fasteners, cover boards, and other components of roofing system.
  2. Warranty Period: 20 years from date of final completion.
  3. Wind speeds below 71 mph shall not be excepted.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, fasteners, cover boards, and walkway products, for the following warranty period:
  1. Warranty Period: Three years from date of final completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746, ASTM D 4272/D 4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- C. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

- D. Wind Uplift Resistance: Design roofing system to resist the wind uplift pressures shown on the North Carolina Building Code Summary for Commercial Roof Projects on sheet G1.1 when tested according to FM Approvals 4474, UL 580, or UL 1897.
- E. ENERGY STAR Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- F. Energy Performance: Roofing system shall have a three-year-age solar reflectance of not less than 0.55 and a minimum three-year-aged thermal emittance of 0.75 when tested according to CRRC-1.
- G. 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.
- H. Interior Fire-Test Exposure: Satisfactorily pass UL 1256; for application and roof slopes indicated; testing by a qualified testing agency. The smoke-developed index shall not be limited for roof applications.

## 2.2 POLYVINYL CHLORIDE (PVC) ROOFING

- A. KEE Sheet: ASTM D 6754, fabric reinforced.
  - 1. Exposed Face Color: Off white.
  - 2. Roll Width for Mechanically Attached Applications: 8 feet, maximum.
  - 3. Manufacturer:
    - a. FiberTite 60 mil SM.
- B. PVC Sheet: ASTM D 4434, reinforced.
  - 1. Thickness: 80 mils, minimum.
  - 2. Exposed Face Color: White.
  - 3. Manufacturers:
    - a. Carlisle Sure-Flex PVC.
    - b. Flex 80 PVC.
    - c. Sika Sarnafil S 327-80.
    - d. Siplast Parasolo PVC KEE.
- C. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

## 2.3 ACCESSORY ROOFING MATERIALS

- A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
  - 1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

1. Thickness: 60 mil.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Roof Vents: As recommended by roof membrane manufacturer.
1. Size: Not less than 4-inch diameter.
- E. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- F. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- H. Miscellaneous Accessories: Provide 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.

#### 2.4 ROOF INSULATION (replace if damaged or wet or where indicated on roof plan)

- A. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
1. Compressive Strength: 20 psi.
  2. Size: 48 by 96 inches.
  3. Thickness: 2 inches.

#### 2.5 INSULATION ACCESSORIES AND COVER BOARD

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- C. Glass-Mat Gypsum Cover Board: ASTM C1177/C1177M, water-resistant gypsum board **(at Water Resources Vehicle Shed)**.
1. Thickness: 1/4 inch.
  2. Surface Finish: Unprimed.
- D. Fiber-Reinforced Cementitious Cover Board: ASTM C1325, fiber-mat-reinforced cementitious board **(at Water Resources Vehicle Shed)**.
1. Thickness: 1/4 inch minimum.

## 2.6 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
  - 1. Size: Approximately 36 by 60 inches.
  - 2. Color: Contrasting with roof membrane.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Perform fastener-pullout tests according to roof system manufacturer's written instructions.
  - 1. Submit test result within 24 hours of performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

### 3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 INSTALLATION OF INSULATION (replace if wet or damaged or where indicated on roof plan)

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Metal Decking:
  - a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - b. Make joints between adjacent insulation boards not more than **1/4 inch** in width.
  - c. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus **24 inches**.
    - 1) Trim insulation so that water flow is unrestricted.
  - d. Fill gaps exceeding **1/4 inch** with insulation.
  - e. Cut and fit insulation within **1/4 inch** of nailers, projections, and penetrations.

3.5 INSTALLATION OF COVER BOARDS (at Water Resources Vehicle Shed)

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of **6 inches** in each direction.
  - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 2. At internal roof drains, conform to slope of drain sump.
    - a. Trim cover board so that water flow is unrestricted.
  - 3. Cut and fit cover board tight to nailers, projections, and penetrations.

3.6 INSTALLATION OF MECHANICALLY FASTENED ROOF MEMBRANE

- A. Mechanically fasten roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. For in-splice attachment, install roof membrane with long dimension perpendicular to steel roof deck flutes.
- D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Mechanically fasten or adhere roof membrane securely at terminations, penetrations, and perimeter of roofing.
- F. In-Seam Attachment: Secure one edge of PVC sheet using fastening plates or metal battens centered within seam, and mechanically fasten PVC sheet to roof deck.

- G. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings 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 roof membrane and sheet flashings.
  - 2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
  - 3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.7 INSTALLATION OF BASE FLASHING

- 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 through termination bars.

### 3.8 INSTALLATION OF WALKWAYS

- A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
  - 1. Install flexible walkways at the following locations:
    - a. Top and bottom of each roof access ladder.
    - b. Locations indicated on Drawings.
    - c. As required by roof membrane manufacturer's warranty requirements.
  - 2. Provide **6-inch** clearance between adjoining pads.
  - 3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.9 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Engineer, and to prepare inspection report.
- B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.



- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

### 3.10 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Engineer 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.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. After membrane installation is complete, clean membrane using cleaning agents and procedures recommended by membrane manufacturer.
- E. Do not store new or demolished materials on new membrane. Do not allow traffic across new membrane.

### 3.11 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS \_\_\_\_\_ of \_\_\_\_\_, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
  - 1. Owner: **<Insert name of Owner>**.
  - 2. Owner Address: **<Insert address>**.
  - 3. Building Name/Type: **<Insert information>**.
  - 4. Building Address: **<Insert address>**.
  - 5. Area of Work: **<Insert information>**.
  - 6. Acceptance Date: \_\_\_\_\_.
  - 7. Warranty Period: **<Insert time>**.
  - 8. Expiration Date: \_\_\_\_\_.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
  - a. lightning;
  - b. peak gust wind speed exceeding 71 mph;
  - c. fire;
  - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
  - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
  - f. vapor condensation on bottom of roofing; and
  - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

1. Authorized Signature: \_\_\_\_\_.
2. Name: \_\_\_\_\_.
3. Title: \_\_\_\_\_.

END OF SECTION 075419

## SECTION 076200 - SHEET METAL FLASHING AND TRIM

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Low-slope roof sheet metal fabrications.

#### 1.2 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 leakproof, secure, and noncorrosive installation.

#### 1.3 ACTION SUBMITTALS

- A. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.

#### 1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs 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. For copings and roof edge flashings that are ANSI/SPRI/FM 4435/ES-1 tested, shop is to be listed as able to fabricate required details as tested and approved.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
  2. Protect stored sheet metal flashing and trim from contact with water.
- B. 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.

## 1.7 WARRANTY

- A. Special Warranty on Finishes: 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 Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 20 years from date of Final Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, are to 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 are not to rattle, leak, or loosen, and are to remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Standard: Manufacture and install roof edge flashings tested in accordance with ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:
1. Design Pressure: As indicated on Drawings.
- D. 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 , ambient; 180 deg F , material surfaces.

## 2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Aluminum Sheet: **ASTM B209**, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.
  - 1. Exposed Coil-Coated Finish:
    - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - 2. Color: As selected by from manufacturer's full range.
  - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of **0.5 mil**.
- C. Polymer coated sheet metal: Heat weldable 0.040 inch thick 3003-H14 aluminum, laminated with a 0.020 inch thick polymeric coating. Metal shall be compatible for hot air welding to membrane and flashing material.
  - 1. Color: As selected by Owner from manufacturer's full range.

## 2.3 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, 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 unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, 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.
  - 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.
    - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
  - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape **1/2 inch** wide and **1/8 inch** thick.

- D. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

## 2.4 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
  - 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
  - 2. 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.
  - 3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
  - 4. 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.
  - 5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
  - 1. 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.
  - 2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
  - 1. Form expansion joints of intermeshing hooked flanges, not less than **1 inch** deep, filled with butyl sealant concealed within joints.
  - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than one gauge thicker than metal being secured.
  - 1. Cleats shall be continuous.
- F. Seams:
  - 1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

## 2.5 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing and Fascia Cap: Fabricate in minimum **96-inch-** long, but not exceeding **12-foot-** long sections. Furnish with **6-inch-** wide, joint cover plates. Shop fabricate interior and exterior corners.
  - 1. Joint Style: Butted with expansion space and **6-inch-** wide, exposed cover plate.
  - 2. Fabricate from the following materials:
    - a. Aluminum: **0.050 inch** thick.
- B. Copings: Fabricate in minimum **96-inch-** long, but not exceeding **12-foot-** long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external and internal legs. Miter corners, fasten and seal watertight. Shop fabricate interior and exterior corners.
  - 1. Joint Style: Butted with expansion space and **6-inch-** wide, exposed cover plate.
  - 2. Fabricate from the following materials:
    - a. Aluminum: **0.050 inch** thick.
- C. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
  - 1. Aluminum: **0.040 inch** thick.
- D. Roof-Penetration Flashing: Fabricate from the following materials:
  - 1. Aluminum: **0.040 inch** thick.

## PART 3 - EXECUTION

### 3.1 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.

### 3.2 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.



1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
  2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of sealant.
  3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
  4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
  5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
  6. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
  7. Do not field cut sheet metal flashing and trim by torch.
- 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. Coat concealed side of uncoated-aluminum sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. 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.
- F. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated.
    - a. Embed hooked flanges of joint members not less than 1 inch into sealant.
    - b. Form joints to completely conceal sealant.
    - c. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
    - d. Adjust setting proportionately for installation at higher ambient temperatures.
      - 1) Do not install sealant-type joints at temperatures below 40 deg F.
  2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

### 3.3 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Downspouts:
  - 1. Join sections with 1-1/2-inch telescoping joints.
  - 2. Provide hangers with fasteners designed to hold downspouts securely to walls.
  - 3. Locate hangers at top and bottom and at approximately 60 inches o.c.
  - 4. Connect downspouts to underground drainage system.
- C. Parapet Scuppers:
  - 1. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
  - 2. Anchor scupper closure trim flange to exterior wall and seal with elastomeric sealant to scupper.
  - 3. Loosely lock front edge of scupper with conductor head.
  - 4. Seal with elastomeric sealant exterior wall scupper flanges into back of conductor head.
- D. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch below scupper discharge.

### 3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.
  - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
  - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing:
  - 1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
- C. Copings:
  - 1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
- D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless steel draw band and tighten.
- E. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
  - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
  - 2. Extend counterflashing 4 inches over base flashing.
  - 3. Lap counterflashing joints minimum of 4 inches.

- F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

### 3.5 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.

### 3.6 CLEANING

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

### 3.7 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. 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, as determined by .

END OF SECTION 076200

## SECTION 077200 - ROOF ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes **(for use at Thickening Building)**:
  1. Roof hatch accessories.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory.
- B. Samples: For each exposed product and for each color and texture specified.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

#### 1.5 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within 20 years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 ROOF HATCH ACCESSORIES

- A. Ladder-Assist Post: Standard device for attachment to roof-access ladder.
  1. Operation: Post locks in place on full extension; release mechanism returns post to closed position.
  2. Height: 42 inches (1060 mm) above finished roof deck.
  3. Material: Steel tube.
  4. Post: 1-5/8-inch- (41-mm-) diameter pipe.
  5. Finish: Manufacturer's standard baked enamel or powder coat.
    - a. Color: As selected by Engineer from manufacturer's full range.

## 2.2 METAL MATERIALS

- A. Steel Tube: ASTM A500/A500M, round tube.

## 2.3 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Verify dimensions of roof openings for roof accessories. Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
  - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

### 3.2 REPAIR AND CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions.
- B. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Nonstaining silicone joint sealants.

#### 1.2 ACTION SUBMITTALS

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

#### 1.3 CLOSEOUT SUBMITTALS

- A. Manufacturers' special warranties.
- B. Installer's special warranties.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Authorized representative who is trained and approved by manufacturer.

#### 1.5 PRECONSTRUCTION TESTING

- A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
  - 1. Locate test joints where indicated on Project or, if not indicated, as directed by Engineer.
  - 2. Conduct field tests for each kind of sealant and joint substrate.
  - 3. Notify Engineer seven days in advance of dates and times when test joints will be erected.
  - 4. Test Method: Test joint sealants in accordance with Method A, Tail Procedure, in ASTM C1521.
    - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

5. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

## 1.6 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
  2. When joint substrates are wet.
  3. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

## 1.7 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Period: Three years from date of Final Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Period: Five years from date of Final Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
  1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  2. Disintegration of joint substrates from causes exceeding design specifications.
  3. Mechanical damage caused by individuals, tools, or other outside agents.
  4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

- A. Obtain joint sealants from single manufacturer.

## 2.2 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Engineer from manufacturer's full range.

## 2.3 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested in accordance with ASTM C1248.
- B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.

## 2.4 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer, required at all substrates.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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



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

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - a. Concrete.
  - 3. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    - a. Metal.
    - b. Glass.
- B. Joint Priming: Prime all joint substrates. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 unless otherwise indicated.

### 3.4 CLEANING

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

### 3.5 PROTECTION

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

END OF SECTION 079200

## SECTION 086200 - UNIT SKYLIGHTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Unit skylights mounted on existing curbs.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of unit skylight.
- B. Shop Drawings: For unit skylight work. Include plans, elevations, sections, details, and connections to supporting structure and other adjoining work.
- C. Samples: For each type of exposed finish required and each type of glazing.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Qualification data.
- B. Product test reports.
- C. Field quality-control reports.
- D. Sample warranty.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

#### 1.5 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of unit skylights that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Fifteen years from date of final completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Unit Skylight Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
  - 1. Performance Class and Grade: Class CW-PG 50.
- B. Thermal Transmittance: NFRC 100 maximum U-factor of 0.60 Btu/sq. ft. x h x deg F (3.43 W/sq. m x K).

### 2.2 UNIT SKYLIGHTS

- A. Unit Shape and Size: Match existing.
- B. Insulating Glass: Clear, in manufacturer's standard overall thickness.
  - 1. Exterior Lite: 6-mm clear fully tempered glass.
  - 2. Interior Lite: Laminated glass; two plies of 3-mm clear heat-strengthened glass with 0.030-inch (0.762-mm) clear polyvinyl butyral interlayer.
  - 3. Interspace Content: Argon.
  - 4. Low-Emissivity Coating: Manufacturer's standard.
- C. Glazing Gaskets: EPDM, neoprene, partially vulcanized butyl tape, or liquid-applied elastomeric sealant.
- D. Provide safety screens as needed to ensure compliance with OSHA requirements.

### 2.3 ALUMINUM FINISHES

- A. Mill Finish: Manufacturer's standard.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Coordinate installation of unit skylight with installation of substrates, roof insulation, roofing membrane, and flashing as required to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight.
- B. Comply with recommendations in AAMA 1607 and with manufacturer's written instructions for installing unit skylights.

### 3.2 FIELD QUALITY CONTROL

- A. After completion of installation and nominal curing of sealant and glazing compounds but before installation of interior finishes, test for water leaks according to AAMA 501.2.
- B. Perform test for total area of each unit skylight.
- C. Work will be considered defective if it does not pass tests and inspections.
- D. Additional testing and inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

### 3.3 CLEANING

- A. Clean exposed unit skylight surfaces according to manufacturer's written instructions. Touch up damaged metal coatings and finishes.

END OF SECTION 086200

## SECTION 221423 - STORM DRAINAGE PIPING SPECIALTIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Roof drains.
2. Retrofit roof drains.

#### 1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

#### 1.3 QUALITY ASSURANCE

A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

### PART 2 - PRODUCTS

#### 2.1 METAL ROOF DRAINS

A. Existing Drain Repairs (include in base bid for all roof drains).

1. Ring Clamp and Dome: Cast iron.

B. Retrofit Roof Drains (install on a unit price basis)

1. Standard: ANSI/SPRI RD-1; ULC/ORD-C790.4.
2. Size: Field determined.
3. Drain Body: 1 piece, 11 guage, 17.5 inch diameter.
4. Flange: Six 2.5 inch long aluminum studs. Heat weldable where installed at thermoplastic membrane.
5. Sump: Depressed.
6. Strainer Dome: Cast aluminum; 7.25 inches high
7. Clamping Ring: Cast aluminum.
8. Backflow Seal: Watertight mechanical seal.

#### 2.2 MISCELLANEOUS STORM DRAINAGE PIPING SPECIALTIES

A. Downspout Adaptors:

1. Description: Manufactured, gray-iron casting, for attaching to horizontal-outlet, parapet roof drain and to exterior, sheet metal downspout.

2. Size: Inlet size to match parapet drain outlet.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Replace ring clamp and dome at all existing roof drains. Install in accordance with manufacturer's instructions.
- B. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions.
  1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
  2. Install expansion joints, if indicated, in roof drain outlets.
  3. Position roof drains for easy access and maintenance.
- C. Install downspout adapters on outlet of back-outlet parapet roof drains and connect to sheet metal downspouts.

### 3.2 INSTALLATION, RETROFIT ROOF DRAIN

- A. Install in accordance with manufacturer's instructions.
- B. Provide watertight connection to existing plumbing and roofing system.

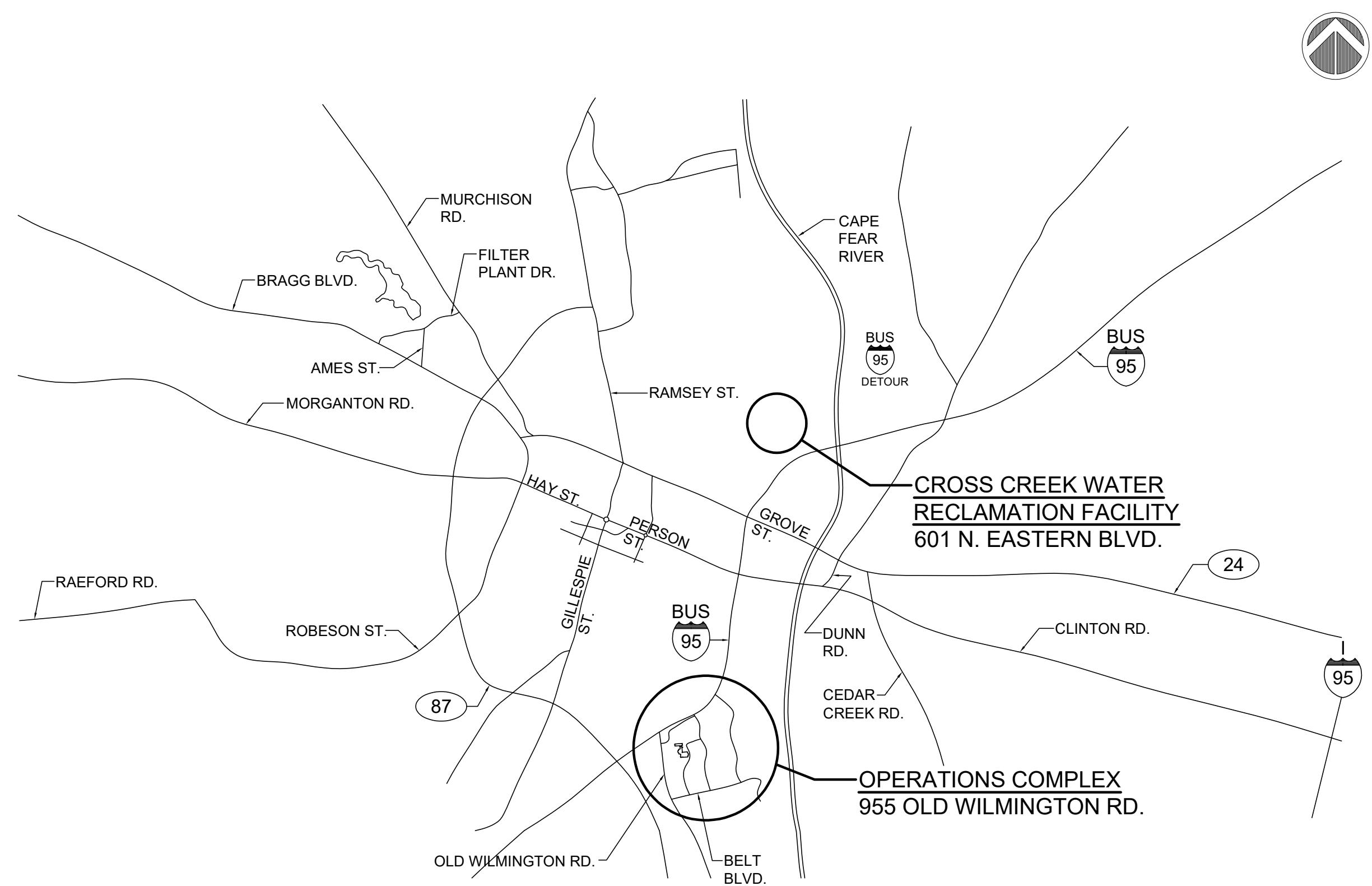
### 3.3 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221423



LOCATION MAP



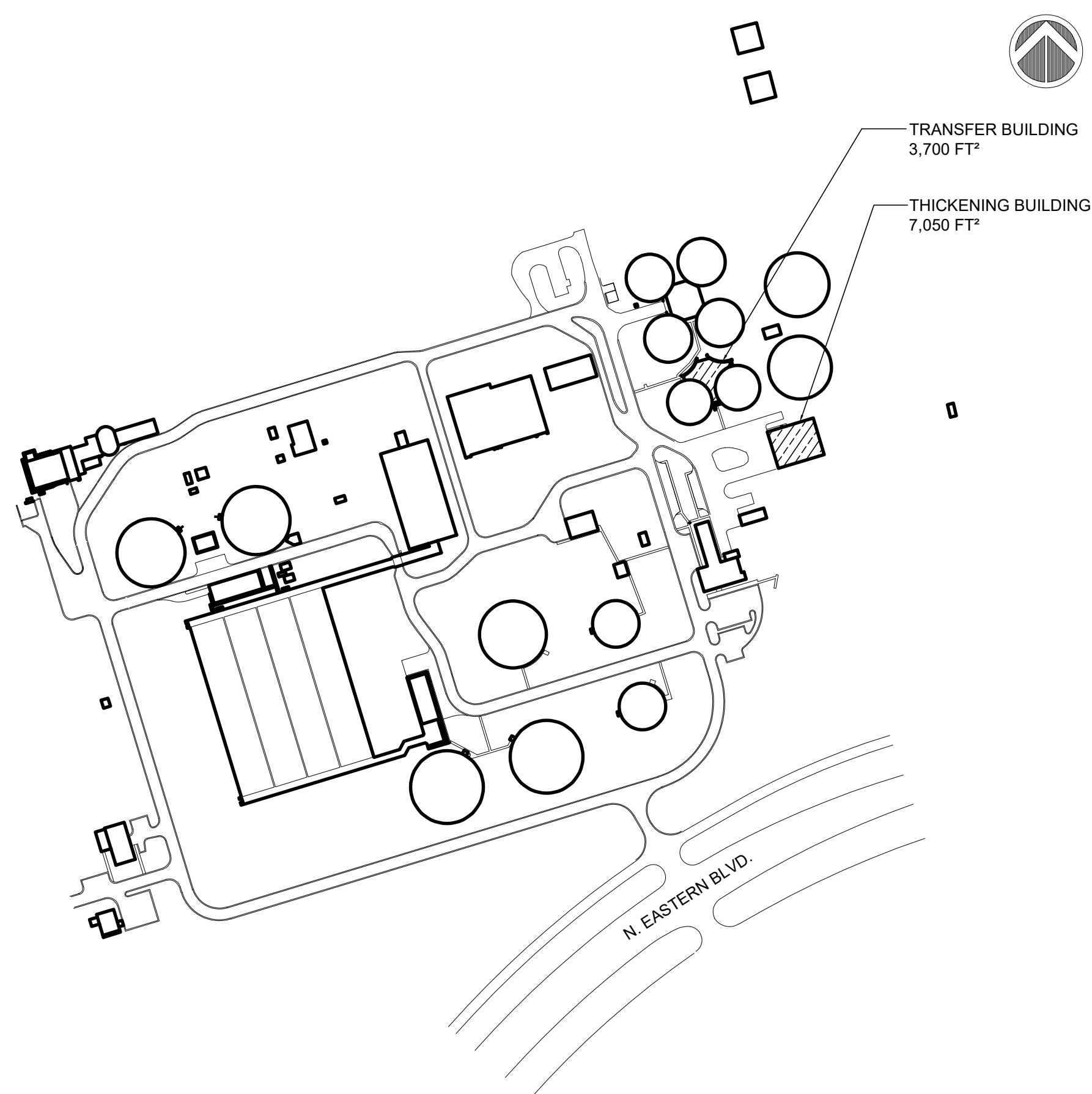
PROJECT INFORMATION

# FAYETTEVILLE PUBLIC WORKS COMMISSION

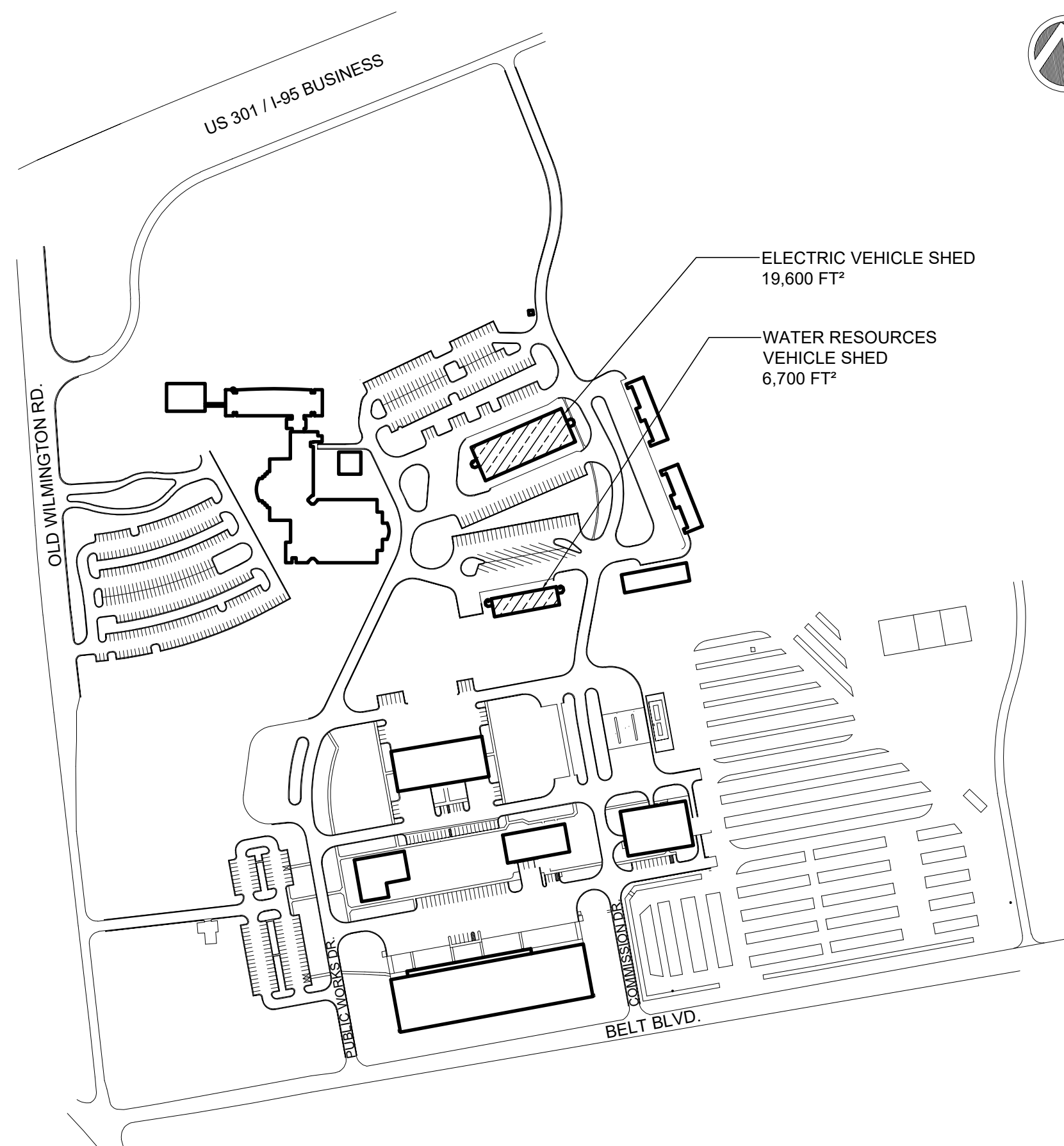
## RE-ROOFING AT TRANSFER BUILDING, THICKENING BUILDING, WATER RESOURCES VEHICLE SHED, AND ELECTRIC VEHICLE SHED

TRANSFER & THICKENING BUILDINGS: 601 N. EASTERN BLVD.  
 VEHICLE SHEDS: 955 OLD WILMINGTON RD.  
 FAYETTEVILLE, NORTH CAROLINA 28301

CROSS CREEK WRF KEY PLAN



OPERATIONS COMPLEX KEY PLAN



GENERAL NOTES

- CONTRACTOR TO KEEP ON THE JOB SITE A CURRENT COPY OF ALL DRAWINGS, SPECIFICATIONS, ADDENDA, SHOP DRAWINGS AND REVISION DRAWINGS AS ISSUED.
- EXISTING CONDITIONS ARE SHOWN ON THE DRAWINGS FOR THE CONTRACTOR'S CONVENIENCE AND DO NOT LIMIT OR ALTER THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE ALL ITEMS CLEARLY VISIBLE BY ON-SITE INSPECTION.
- EXISTING CONDITIONS SHOWN ON DRAWINGS ARE BASED ON VISUAL OBSERVATION ONLY. NOTIFY ENGINEER IMMEDIATELY IF NEW DETAILS SHOWN ON DRAWINGS ARE NOT COMPATIBLE WITH EXISTING CONDITIONS. CONSULT ENGINEER TO DETERMINE IF REVISED DETAILS ARE NECESSARY.
- ALL WORK, INCLUDING BUT NOT LIMITED TO PLUMBING, HVAC, AND ELECTRICAL, SHALL BE PERFORMED BY A CONTRACTOR LICENSED FOR THAT TYPE OF WORK. NOTIFY OWNER PRIOR TO DISCONNECTING ANY EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY DISCONNECTIONS AND RECONNECTIONS.
- CONTRACTOR HAS SOLE RESPONSIBILITY FOR SITE SAFETY.
- ALL DAMAGE, INJURY, OR LOSS TO ANY PROPERTY CAUSED, DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, BY CONTRACTOR, OR ANYONE FOR WHOSE ACTS THE CONTRACTOR MAY BE LIABLE, SHALL BE REMEDIED BY CONTRACTOR AT ITS EXPENSE.
- APPLICATIONS FOR PAYMENT REQUESTING PAYMENT FOR MATERIALS STORED ON SITE SHALL BE ACCOMPANIED WITH INVOICES TOTALING THE AMOUNT REQUESTED OR MORE.
- THE CONTRACTOR SHALL SUBMIT A COPY OF ANY BUILDING PERMITS TO THE ENGINEER.
- CONTRACTOR MUST NOTIFY THE ENGINEER OF ANY OMISSIONS, CONTRADICTIONS OR CONFLICTS SEVEN (7) WORKING DAYS BEFORE BID DATE. IF CONTRACTOR DOES NOT SO NOTIFY THE ENGINEER OF ANY SUCH CONDITION, IT WILL BE ASSUMED THAT, IN THE CASE OF OMISSIONS, THE CONTRACTOR HAS INCLUDED THE NECESSARY ITEMS IN THE BID TO COMPLETE THIS SPECIFICATION. IT WILL BE ASSUMED THAT, IN THE CASE OF CONTRADICTIONS OR CONFLICTS, THE CONTRACTOR HAS INCLUDED THE MOST STRINGENT REQUIREMENTS SHOWN ON THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL PERFORM BELOW-DECK INSPECTION PRIOR TO EACH DAY'S WORK TO CHECK FOR ELECTRICAL CONDUIT.

DESIGNER

**FA FLEMING & ASSOCIATES, PA**  
 STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
 1004 HAY STREET, FAYETTEVILLE, NC 28305  
 OFFICE 910-433-2825  
 FAX 910-433-2604  
 www.flemingandassociates.com

DRAWING SHEET INDEX

SHEET	TITLE
G1.0	PROJECT INFORMATION, LOCATION MAP, GENERAL NOTES, AND OPERATIONS COMPLEX KEY PLAN
G1.1	NCBC SUMMARIES
R1.0	TRANSFER BUILDING ROOF PLAN, NOTES, AND LEGEND
R1.1	TRANSFER BUILDING DETAILS
R2.0	THICKENING BUILDING ROOF PLAN, NOTES, AND LEGEND
R2.1	THICKENING BUILDING DETAILS
R3.0	WATER RESOURCES VEHICLE SHED ROOF PLAN, NOTES, AND LEGEND
R3.1	WATER RESOURCES VEHICLE SHED DETAILS
R4.0	ELECTRIC VEHICLE SHED ROOF PLAN, NOTES, AND LEGEND
R4.1	ELECTRIC VEHICLE SHED DETAILS

SEAL

PROJECT TEAM  
 DRAWN BY:  
 R. TUCKER, RBEC  
 CHECKED BY:  
 S. FLEMING, PE, RBEC  
 DATE:  
 JANUARY 25, 2022  
 PROJECT NUMBER:  
 21-81



SHEET

G1.0



Name of Project: Re-Roofing at Transfer Building  
 Address: 601 N. Eastern Blvd., Fayetteville, NC Zip Code 28301  
 Proposed Use: F-2 (Noncombustible materials) (No change)  
 Owner/Authorized Agent: Kevin Howell Phone # (910) 223-4361 E-mail Kevin.Howell@faypwc.com  
 Owned By:  City/County  Private  State  
 Code Enforcement Jurisdiction:  City Fayetteville  County  State

**LEAD DESIGN PROFESSIONAL:**  
 DESIGN FIRM Fleming & Associates, PA  
 DESIGNER NAME Stephen Fleming, PE, RBEC  
 LICENSE # 11278 TELEPHONE # (910) 433-2825 E-MAIL sfleming@flemingandassociates.com

**EDITION OF CODE:** 2018 NC Existing Building Code  
 Addition  Alteration- Level 1  Alteration- Level 2  Alteration- Level 3  Repair  
 CONSTRUCTED: (date) Unknown  
 REPAIR: (date) N/A  
 RECOVER: (date) N/A

**BASIC BUILDING DATA**  
**Construction Type:**  I-A  II-A  III-A  IV  V-A  
 (check all that apply)  I-B  II-B  III-B  V-B  
**Sprinklers:**  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
**Standpipes:**  No  Yes  Class  I  II  III  Wet  Dry  
**Fire District:**  No  Yes (Primary)  
**Building Height:** (feet) 17

**ALLOWABLE AREA**  
**Occupancy:**  
 Assembly   
 Business   
 Educational   
 Factory  F-1 and F-2  
 Hazardous  H-1 Detonate  H-2 Deflagrate  H-3 Combust  H-4 Health  H-5 HPM  
 Institutional   
 Mercantile   
 Residential  R-1  R-2  R-3  R-4  
 Storage  S-1, S-2, Parking Garage, Repair Garage  
 Utility and Miscellaneous

**FIRE PROTECTION REQUIREMENTS**

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Roof Construction Including supporting beams and joists		N/A	

**STRUCTURAL DESIGN**  
**DESIGN LOADS:**  
**Wind Uplift Resistance** (This section to be duplicated for each distinct roof area)  
 Basic Wind Speed ( $P_{wh}$ ) 121 mph (ASCE 7-10)  
 Exposure Category C  
**Design Pressure (psf)** (includes factor of safety of 2.0):  
 Field 41  
 Perimeter 69  
 Corner 103  
 Perimeter Width 6.8'  
 Corner Dimension 6.8'x6.8'  
**Dead Loads:** Existing Roof Load 1 psf (components above roof deck only)  
 Replacement Roof Load 0.5 psf (components above roof deck only)  
 Net Load Change -0.5 psf (components above roof deck only)  
**Snow Load:** 10 psf

**ENERGY SUMMARY**  
**ENERGY REQUIREMENTS:**  
 The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.  
**Climate Zone:**  3  4  5  
**Method of Compliance:**  
 Prescriptive (Energy Code)  
 Performance (Energy Code)  
 Prescriptive (ASHRAE 90.1-2013)  
 Performance (ASHRAE 90.1-2013)  
 "No less conforming... than the existing building" (NCEBC 708.1.1 Exception 4)  
**THERMAL ENVELOPE:**  
**Roof/Ceiling Assembly** (each assembly)  
 Description of Assembly Existing concrete deck; new cover board; new membrane  
 U-value of total assembly Uninsulated  
 R-value of insulation Uninsulated  
 Skylights in each assembly 0  
 U-Value of skylight  
 total square footage of skylights in each assembly

**ROOF DRAINAGE SYSTEM DESIGN CALCULATION/SIZING**  
 Existing system calculation: EXISTING INTERNAL ROOF DRAINS HAVE VERY SMALL VERTICAL CONDUITORS AND THEIR CAPACITY WAS NOT INCLUDED IN THE PRIMARY OR SECONDARY DRAINAGE CALCULATIONS.  
 A TOTAL OF 10 EXISTING SCUPPERS FUNCTION AS BOTH PRIMARY AND SECONDARY ROOF DRAINAGE SYSTEM.  
 Modification to existing system: NO MODIFICATIONS TO EXISTING SYSTEM.  
 New (where none exists) secondary system: SECONDARY DRAINAGE IS PROVIDED WITH EXISTING SCUPPERS.

Name of Project: Re-Roofing at Thickening Building  
 Address: 601 N. Eastern Blvd., Fayetteville, NC Zip Code 28301  
 Proposed Use: F-2 (Noncombustible materials) (No change)  
 Owner/Authorized Agent: Kevin Howell Phone # (910) 223-4361 E-mail Kevin.Howell@faypwc.com  
 Owned By:  City/County  Private  State  
 Code Enforcement Jurisdiction:  City Fayetteville  County  State

**LEAD DESIGN PROFESSIONAL:**  
 DESIGN FIRM Fleming & Associates, PA  
 DESIGNER NAME Stephen Fleming, PE, RBEC  
 LICENSE # 11278 TELEPHONE # (910) 433-2825 E-MAIL sfleming@flemingandassociates.com

**EDITION OF CODE:** 2018 NC Existing Building Code  
 Addition  Alteration- Level 1  Alteration- Level 2  Alteration- Level 3  Repair  
 CONSTRUCTED: (date) 1998  
 REPAIR: (date) N/A  
 RECOVER: (date) N/A

**BASIC BUILDING DATA**  
**Construction Type:**  I-A  II-A  III-A  IV  V-A  
 (check all that apply)  I-B  II-B  III-B  V-B  
**Sprinklers:**  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
**Standpipes:**  No  Yes  Class  I  II  III  Wet  Dry  
**Fire District:**  No  Yes (Primary)  
**Building Height:** (feet) 21'

**ALLOWABLE AREA**  
**Occupancy:**  
 Assembly   
 Business   
 Educational   
 Factory  F-1 and F-2  
 Hazardous  H-1 Detonate  H-2 Deflagrate  H-3 Combust  H-4 Health  H-5 HPM  
 Institutional   
 Mercantile   
 Residential  R-1  R-2  R-3  R-4  
 Storage  S-1, S-2, Parking Garage, Repair Garage  
 Utility and Miscellaneous

**FIRE PROTECTION REQUIREMENTS**

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Roof Construction Including supporting beams and joists		N/A	

**STRUCTURAL DESIGN**  
**DESIGN LOADS:**  
**Wind Uplift Resistance** (This section to be duplicated for each distinct roof area)  
 Basic Wind Speed ( $P_{wh}$ ) 121 mph (ASCE 7-10)  
 Exposure Category C  
**Design Pressure (psf)** (includes factor of safety of 2.0):  
 Field 43  
 Perimeter 72  
 Corner 108  
 Perimeter Width 7.5'  
 Corner Dimension 7.5'x7.5'  
**Dead Loads:** Existing Roof Load 2.25 psf (components above roof deck only)  
 Replacement Roof Load 1.75 psf (components above roof deck only)  
 Net Load Change -0.5 psf (components above roof deck only)  
**Snow Load:** 10 psf

**ENERGY SUMMARY**  
**ENERGY REQUIREMENTS:**  
 The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.  
**Climate Zone:**  3  4  5  
**Method of Compliance:**  
 Prescriptive (Energy Code)  
 Performance (Energy Code)  
 Prescriptive (ASHRAE 90.1-2013)  
 Performance (ASHRAE 90.1-2013)  
 "No less conforming... than the existing building" (NCEBC 708.1.1 Exception 4)  
**THERMAL ENVELOPE:**  
**Roof/Ceiling Assembly** (each assembly)  
 Description of Assembly Existing concrete deck; new insulation; new cover board; new membrane  
 U-value of total assembly 0.074  
 R-value of insulation 12.8  
 Skylights in each assembly 0  
 U-Value of skylight  
 total square footage of skylights in each assembly

**ROOF DRAINAGE SYSTEM DESIGN CALCULATION/SIZING**  
 Existing system calculation: WORST CASE EXIST. PRIMARY 4"Ø ROOF DRAIN AT AREA A NEAR COLUMN LINE A DRAINING 2,550 FT<sup>2</sup> OF ROOF AREA 4"Ø ROOF DRAIN CAN DRAIN 4,600 FT<sup>2</sup> OF ROOF AREA AT 4.0 IN/HR RAINFALL RATE PER T1106.2(1) OF 2018 NCPC  
 Modification to existing system: NO MODIFICATIONS TO EXISTING SYSTEM.  
 New (where none exists) secondary system: SECONDARY DRAINAGE AT BOTH AREAS IS OVER THE ROOF EDGE.

Name of Project: Re-Roofing at Water Resources Vehicle Shed  
 Address: 955 Old Wilmington Rd., Fayetteville, NC Zip Code 28301  
 Proposed Use: U (Vehicle shed) (No change)  
 Owner/Authorized Agent: Kevin Howell Phone # (910) 223-4361 E-mail Kevin.Howell@faypwc.com  
 Owned By:  City/County  Private  State  
 Code Enforcement Jurisdiction:  City Fayetteville  County  State

**LEAD DESIGN PROFESSIONAL:**  
 DESIGN FIRM Fleming & Associates, PA  
 DESIGNER NAME Stephen Fleming, PE, RBEC  
 LICENSE # 11278 TELEPHONE # (910) 433-2825 E-MAIL sfleming@flemingandassociates.com

**EDITION OF CODE:** 2018 NC Existing Building Code  
 Addition  Alteration- Level 1  Alteration- Level 2  Alteration- Level 3  Repair  
 CONSTRUCTED: (date) 1996  
 REPAIR: (date) N/A  
 RECOVER: (date) N/A

**BASIC BUILDING DATA**  
**Construction Type:**  I-A  II-A  III-A  IV  V-A  
 (check all that apply)  I-B  II-B  III-B  V-B  
**Sprinklers:**  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
**Standpipes:**  No  Yes  Class  I  II  III  Wet  Dry  
**Fire District:**  No  Yes (Primary)  
**Building Height:** (feet) 17

**ALLOWABLE AREA**  
**Occupancy:**  
 Assembly   
 Business   
 Educational   
 Factory  F-1 and F-2  
 Hazardous  H-1 Detonate  H-2 Deflagrate  H-3 Combust  H-4 Health  H-5 HPM  
 Institutional   
 Mercantile   
 Residential  R-1  R-2  R-3  R-4  
 Storage  S-1, S-2, Parking Garage, Repair Garage  
 Utility and Miscellaneous

**FIRE PROTECTION REQUIREMENTS**

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Roof Construction Including supporting beams and joists		N/A	

**STRUCTURAL DESIGN**  
**DESIGN LOADS:**  
**Wind Uplift Resistance** (This section to be duplicated for each distinct roof area)  
 Basic Wind Speed ( $P_{wh}$ ) 122 mph (ASCE 7-10)  
 Exposure Category C  
**Design Pressure (psf)** (includes factor of safety of 2.0):  
 Field 55  
 Perimeter 83  
 Corner 118  
 Perimeter Width 4.4'  
 Corner Dimension 4.4'x4.4'  
**Dead Loads:** Existing Roof Load 0.9 psf (components above roof deck only)  
 Replacement Roof Load 2.1 psf (components above roof deck only)  
 Net Load Change +1.2 psf (components above roof deck only)  
**Snow Load:** 10 psf

**ENERGY SUMMARY**  
**ENERGY REQUIREMENTS:**  
 The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.  
**Climate Zone:**  3  4  5  
**Method of Compliance:**  
 Prescriptive (Energy Code)  
 Performance (Energy Code)  
 Prescriptive (ASHRAE 90.1-2013)  
 Performance (ASHRAE 90.1-2013)  
 "No less conforming... than the existing building" (NCEBC 708.1.1 Exception 4)  
**THERMAL ENVELOPE:**  
**Roof/Ceiling Assembly** (each assembly)  
 Description of Assembly Existing mtl deck; existing insulation; new cover board; new membrane  
 U-value of total assembly Existing insulation to remain UNO  
 R-value of insulation Existing insulation to remain UNO  
 Skylights in each assembly 2  
 U-Value of skylight 0.60  
 total square footage of skylights in each assembly 8 sq ft

**ROOF DRAINAGE SYSTEM DESIGN CALCULATION/SIZING**  
 Existing system calculation: EXISTING SCUPPER LOCATED NEAR COLUMN LINE 4 FUNCTIONS AS PRIMARY ROOF DRAIN THAT NEEDS TO DRAIN 270 GPM AT 4.0 IN/HR RAINFALL RATE. 8"x8" SCUPPER (HEAD=6") CAN DRAIN 300 GPM PER FIGURE 1106.5 OF 2018 NCPC.  
 Modification to existing system: NO MODIFICATIONS TO EXISTING SYSTEM.  
 New (where none exists) secondary system: EXISTING SCUPPERS LOCATED NEAR COLUMN LINES 2 AND 6 FUNCTION AS SECONDARY ROOF DRAINS THAT NEED TO DRAIN 243 GPM EACH AT 7.2 IN/HR RAINFALL RATE. 8"x8" SCUPPER (HEAD=6") CAN DRAIN 300 GPM PER FIGURE 1106.5 OF 2018 NCPC.

Name of Project: Re-Roofing at Electric Vehicle Shed  
 Address: 955 Old Wilmington Rd., Fayetteville, NC Zip Code 28301  
 Proposed Use: U (Vehicle shed) (No change)  
 Owner/Authorized Agent: Kevin Howell Phone # (910) 223-4361 E-mail Kevin.Howell@faypwc.com  
 Owned By:  City/County  Private  State  
 Code Enforcement Jurisdiction:  City Fayetteville  County  State

**LEAD DESIGN PROFESSIONAL:**  
 DESIGN FIRM Fleming & Associates, PA  
 DESIGNER NAME Stephen Fleming, PE, RBEC  
 LICENSE # 11278 TELEPHONE # (910) 433-2825 E-MAIL sfleming@flemingandassociates.com

**EDITION OF CODE:** 2018 NC Existing Building Code  
 Addition  Alteration- Level 1  Alteration- Level 2  Alteration- Level 3  Repair  
 CONSTRUCTED: (date) 1996  
 REPAIR: (date) N/A  
 RECOVER: (date) N/A

**BASIC BUILDING DATA**  
**Construction Type:**  I-A  II-A  III-A  IV  V-A  
 (check all that apply)  I-B  II-B  III-B  V-B  
**Sprinklers:**  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
**Standpipes:**  No  Yes  Class  I  II  III  Wet  Dry  
**Fire District:**  No  Yes (Primary)  
**Building Height:** (feet) 17

**ALLOWABLE AREA**  
**Occupancy:**  
 Assembly   
 Business   
 Educational   
 Factory  F-1 and F-2  
 Hazardous  H-1 Detonate  H-2 Deflagrate  H-3 Combust  H-4 Health  H-5 HPM  
 Institutional   
 Mercantile   
 Residential  R-1  R-2  R-3  R-4  
 Storage  S-1, S-2, Parking Garage, Repair Garage  
 Utility and Miscellaneous

**FIRE PROTECTION REQUIREMENTS**

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY
Roof Construction Including supporting beams and joists		N/A	

**STRUCTURAL DESIGN**  
**DESIGN LOADS:**  
**Wind Uplift Resistance** (This section to be duplicated for each distinct roof area)  
 Basic Wind Speed ( $P_{wh}$ ) 122 mph (ASCE 7-10)  
 Exposure Category C  
**Design Pressure (psf)** (includes factor of safety of 2.0):  
 Field 55  
 Perimeter 83  
 Corner 118  
 Perimeter Width 6.8'  
 Corner Dimension 6.8'x6.8'  
**Dead Loads:** Existing Roof Load 0.9 psf (components above roof deck only)  
 Replacement Roof Load 1.4 psf (components above roof deck only)  
 Net Load Change +0.5 psf (components above roof deck only)  
**Snow Load:** 10 psf

**ENERGY SUMMARY**  
**ENERGY REQUIREMENTS:**  
 The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.  
**Climate Zone:**  3  4  5  
**Method of Compliance:**  
 Prescriptive (Energy Code)  
 Performance (Energy Code)  
 Prescriptive (ASHRAE 90.1-2013)  
 Performance (ASHRAE 90.1-2013)  
 "No less conforming... than the existing building" (NCEBC 708.1.1 Exception 4)  
**THERMAL ENVELOPE:**  
**Roof/Ceiling Assembly** (each assembly)  
 Description of Assembly Existing mtl deck; existing insulation; existing membrane; new membrane  
 U-value of total assembly Existing insulation to remain  
 R-value of insulation Existing insulation to remain  
 Skylights in each assembly 3  
 U-Value of skylight 0.60  
 total square footage of skylights in each assembly 12 sq ft

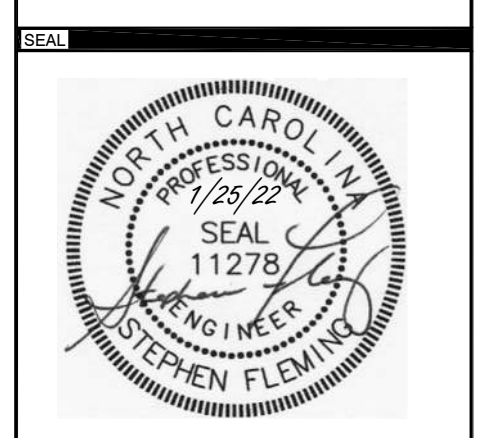
**ROOF DRAINAGE SYSTEM DESIGN CALCULATION/SIZING**  
 Existing system calculation: WORST CASE EXIST. PRIMARY 4"Ø ROOF DRAIN AT AREA A NEAR COLUMN LINE 2 DRAINING 4,050 FT<sup>2</sup> OF ROOF AREA 4"Ø ROOF DRAIN CAN DRAIN 4,600 FT<sup>2</sup> OF ROOF AREA AT 4.0 IN/HR RAINFALL RATE PER T1106.2(1) OF 2018 NCPC  
 Modification to existing system: NO MODIFICATIONS TO EXISTING SYSTEM.  
 New (where none exists) secondary system: ADD ADDITIONAL 16" WIDE SCUPPER AT EACH END OF AREA A.

**FLEMING & ASSOCIATES, PA**  
 STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
 1004 HAY STREET, FAYETTEVILLE, NC 28305  
 OFFICE 910-433-2825  
 FAX 910-433-2604  
 www.flemingandassociates.com



This drawing and the design shown are the property of Fleming and Associates, PA. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
 © Fleming 2022

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING, THICKENING BUILDING, WATER RESOURCES VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
 TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD. FAYETTEVILLE, NC 28301  
 VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301



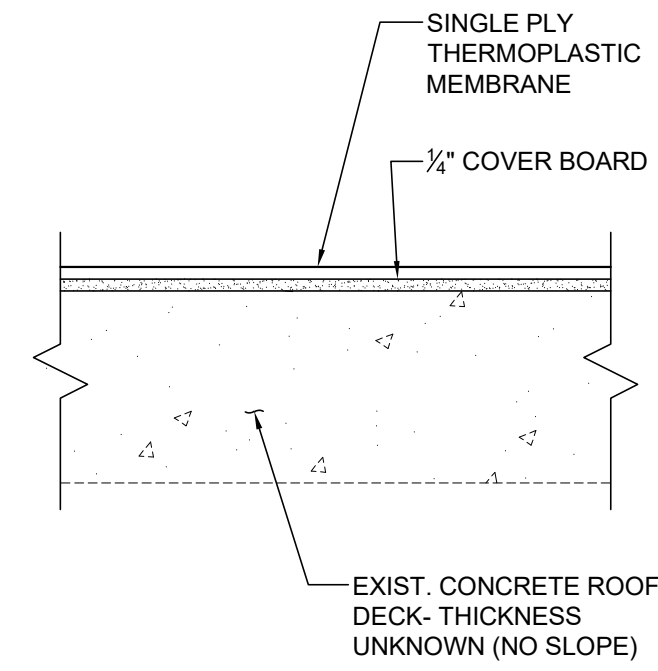
**PROJECT TEAM**  
 DRAWN BY: R. TUCKER, RBEC  
 CHECKED BY: S. FLEMING, PE, RBEC

**REVISIONS**

NO.	REASON	DATE

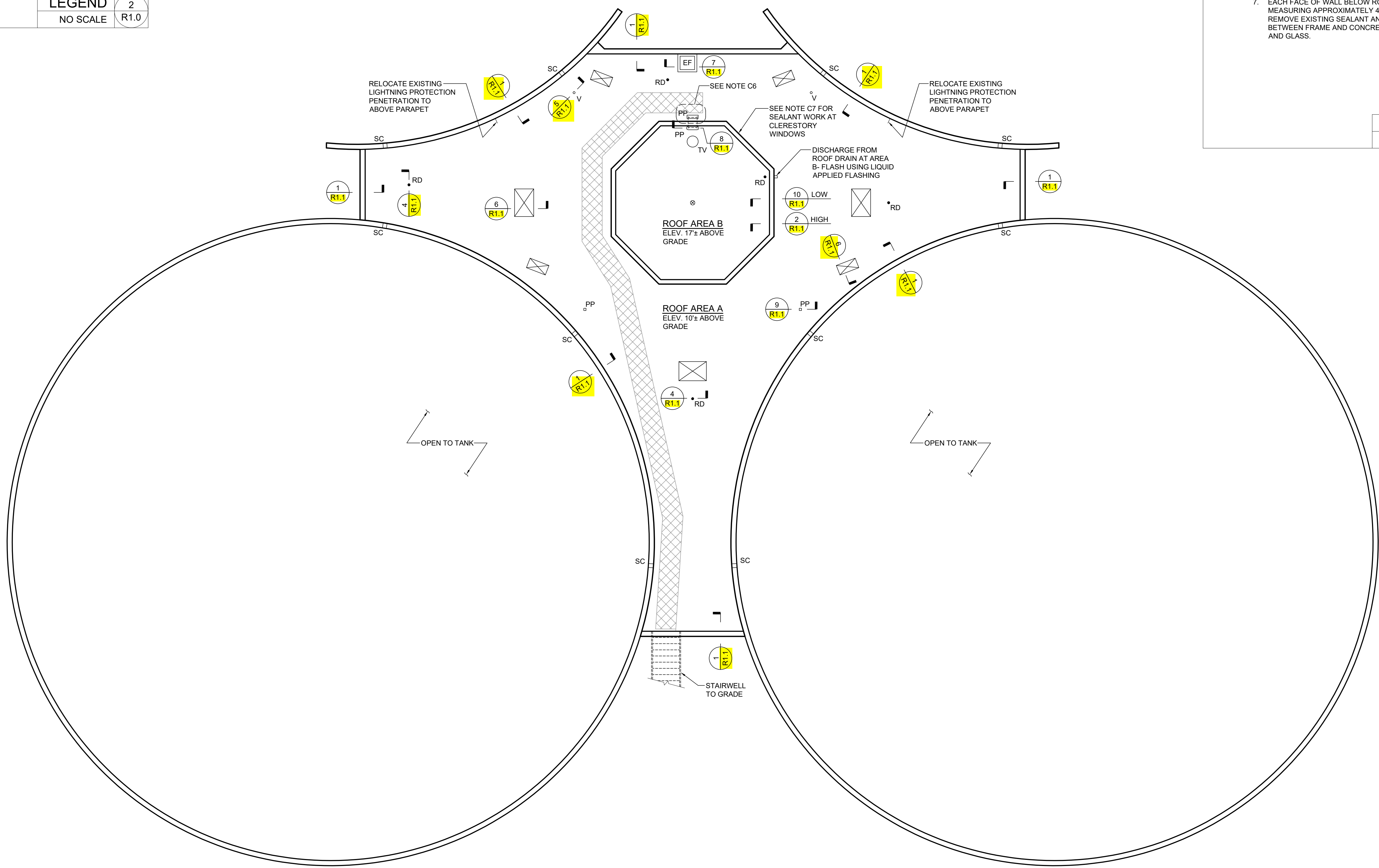
**SHEET TITLE**  
 NCSBC SUMMARIES

- ° PP PENETRATION POCKET- FLASH PER 14/R1.4
- TV EXIST. TURBINE VENTILATOR
- ° V EXIST. VENT THRU ROOF
- ⊗ EXIST. CURB AND OPENING AT ABANDONED PENETRATION - APPLY MEMBRANE TO ALL SIDES
- EF EXIST. EXHAUST FAN ON CURB
- RD EXIST. PRIMARY ROOF DRAIN
- SC EXIST. SCUPPER
- ▨ NEW WALKWAY PAD
- EXIST. OBJECT ABOVE SURFACE OF ROOF



**NEW ROOF ASSEMBLY AT TRANSFER BUILDING** 3  
3" = 1'-0" R1.0

**LEGEND** 2  
NO SCALE R1.0



- A. NOTES: EXISTING CONDITIONS**
- EXISTING ROOF COMPOSITION AT ALL AREAS:  
ASPHALT ROOF MEMBRANE ADHERED TO CONCRETE ROOF DECK.
- B. NOTES: DEMOLITION**
- EXCEPT WHERE SPECIFICALLY NOTED ALL EXISTING ROOFING AND BASE FLASHINGS ARE TO BE REMOVED.
  - ENSURE BUILDING IS PROTECTED DURING TEAR-OFF AND ROOF REPLACEMENT.
- C. NOTES: NEW WORK**
- CONTRACTOR IS TO INSTALL NEW MEMBRANE AND COVER BOARD AS SHOWN ON DRAWINGS AND INDICATED IN THE SPECIFICATIONS FOR A COMPLETE ROOF SYSTEM.
  - ALL EXHAUST FANS, TURBINE VENTS, PLUMBING VENTS, MECHANICAL EQUIPMENT, ETC., SHOWN ON THIS ROOF PLAN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE (SEE LEGEND). LIGHTNING PROTECTION SHALL BE REMOVED AND REINSTALLED TO THE EXTENT NEEDED TO APPLY COATING.
  - FOLLOW RECOMMENDATIONS OF MEMBRANE MANUFACTURER, SPRI, NRCA, SMACNA, AND INDUSTRY STANDARDS UNLESS SHOWN OTHERWISE.
  - CONTRACTOR SHALL HAVE COATING MANUFACTURER CONDUCT ADHESION TESTS TO DETERMINE STRENGTH OF ADHESION TO CONCRETE DECK. SUBMIT RESULTS OF TESTS TO ENGINEER FOR REVIEW BEFORE INSTALLATION.
  - VERIFY ALL ROOF DRAINS ARE CLEAN, FULLY OPERATIONAL, AND WATERTIGHT.
  - WIRE BRUSH, PRIME AND PAINT EXISTING EXTERNAL FIXED LADDER. REPLACE TWO MISSING BOLTS CONNECTING BRACKETS TO STRINGER WITH 1/2" Ø EPOXY BOLTS INTO EXISTING CONCRETE WALL. EACH FACE OF WALL BELOW ROOF AREA B HAS A CLERESTORY WINDOW MEASURING APPROXIMATELY 4'-7" H x 8'-0" W WITH ONE VERTICAL MULLION. REMOVE EXISTING SEALANT AND INSTALL NEW SEALANT AT INTERFACE BETWEEN FRAME AND CONCRETE AND INTERFACE BETWEEN FRAME AND GLASS.

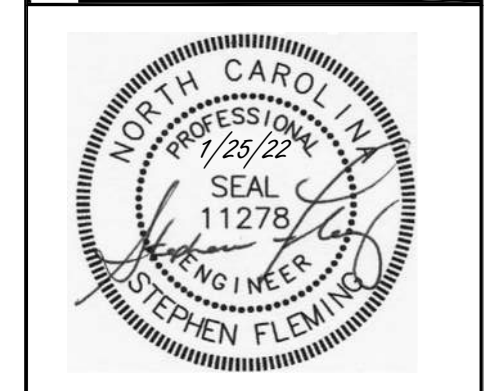
**GENERAL NOTES** 4  
NO SCALE R1.0

**FLEMING & ASSOCIATES, P.A.**  
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN

1004 HAY STREET, FAYETTEVILLE, NC 28305  
OFFICE 910-433-2825  
FAX 910-433-2604  
www.flemingandassociates.com

This drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming, 2022

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING,**  
**THICKENING BUILDING, WATER RESOURCES**  
**VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301



**PROJECT TEAM**  
DRAWN BY: R. TUCKER, RBEC  
CHECKED BY: S. FLEMING, PE, RBEC

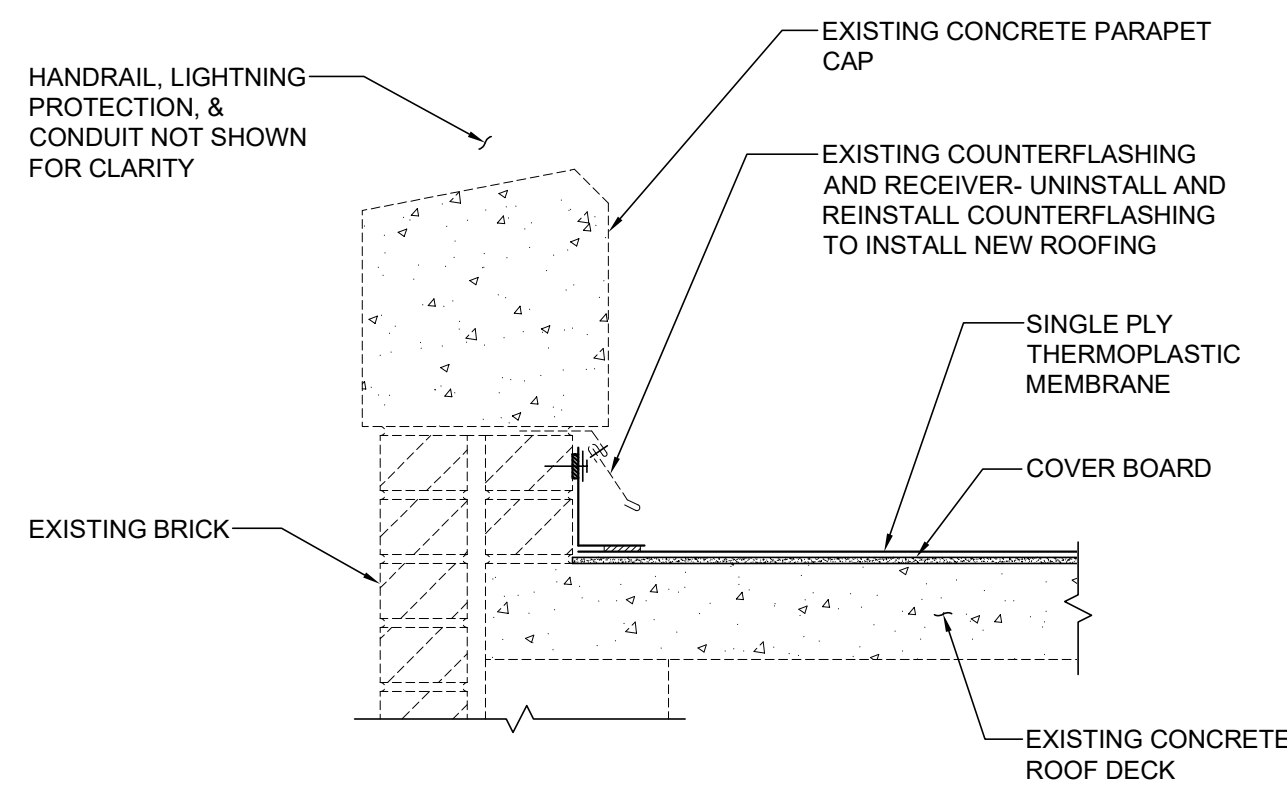
NO.	REASON	DATE

**TRANSFER BUILDING**  
**ROOF PLAN,**  
**NOTES, AND**  
**LEGEND**

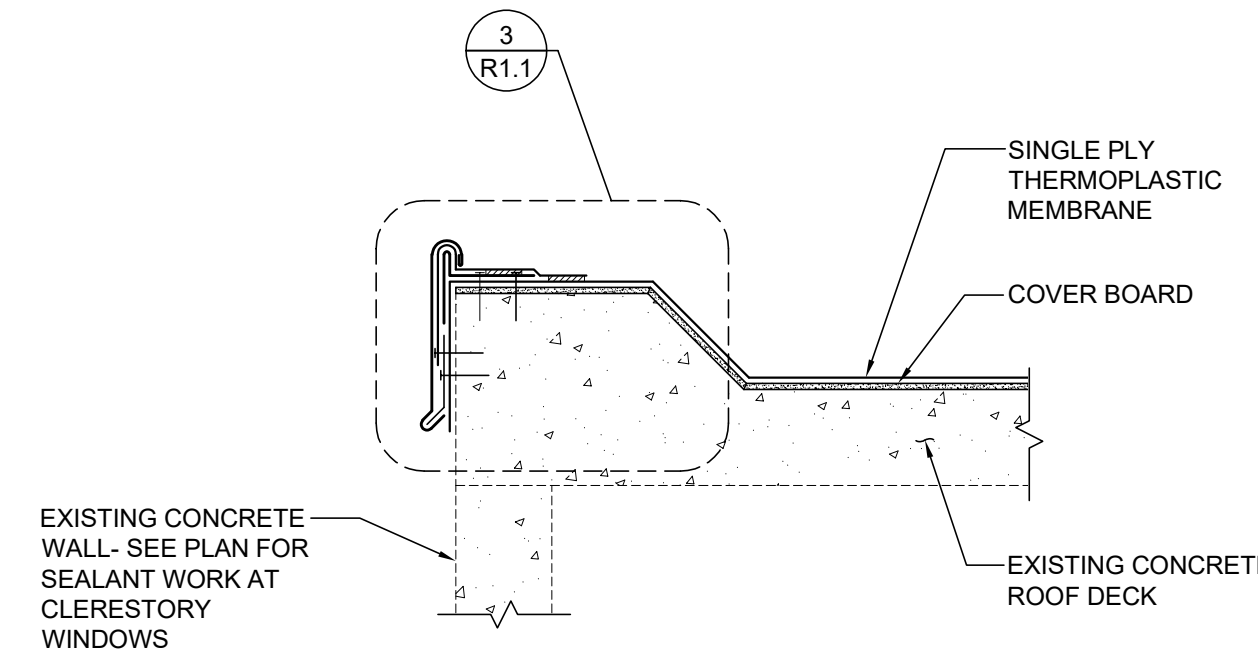
DATE: 1/25/2022 SHEET NUMBER: 1  
PROJECT NO: **R1.0**  
21-81

**TRANSFER BUILDING ROOF PLAN** 1  
1/8" = 1'-0" R1.0

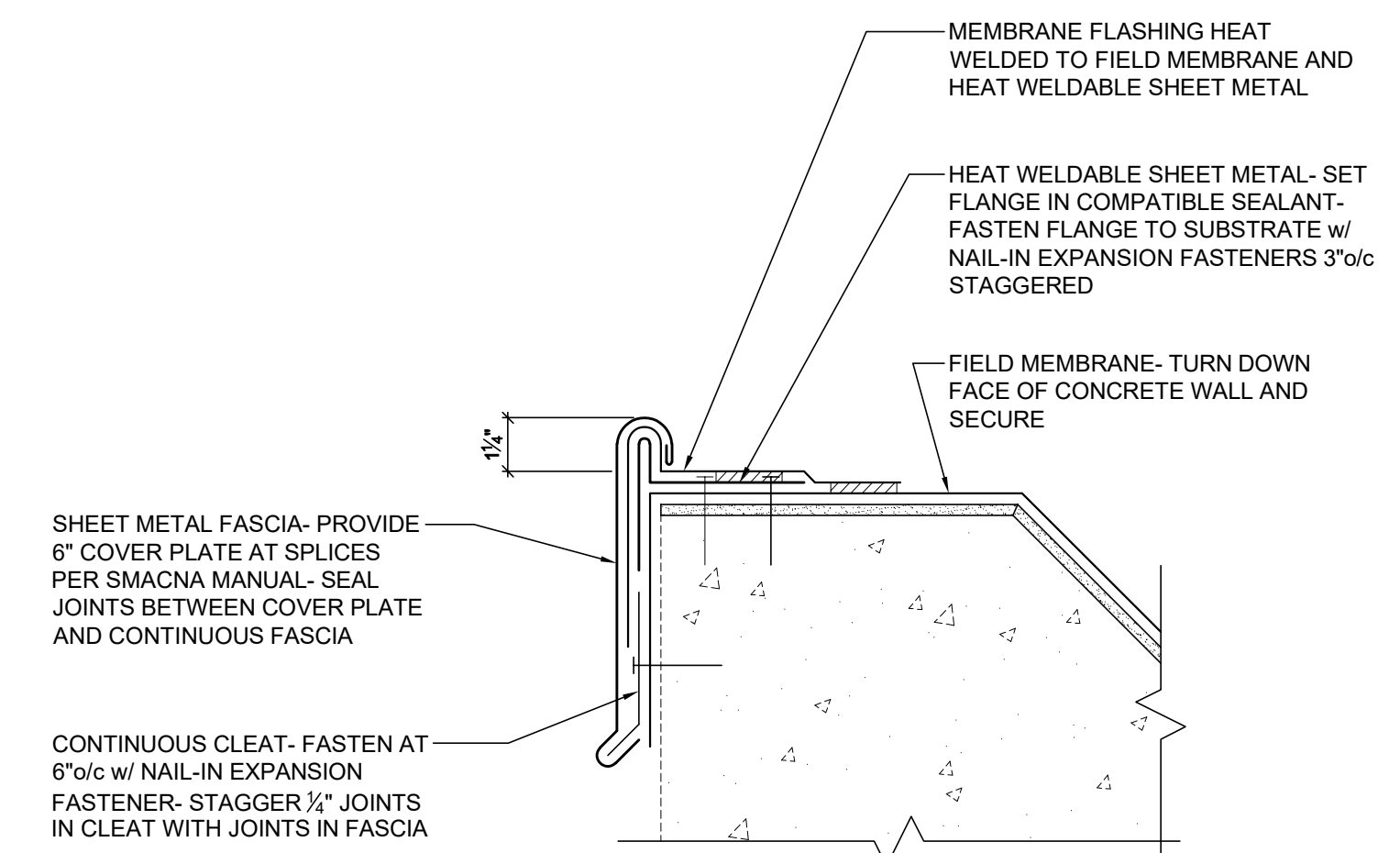




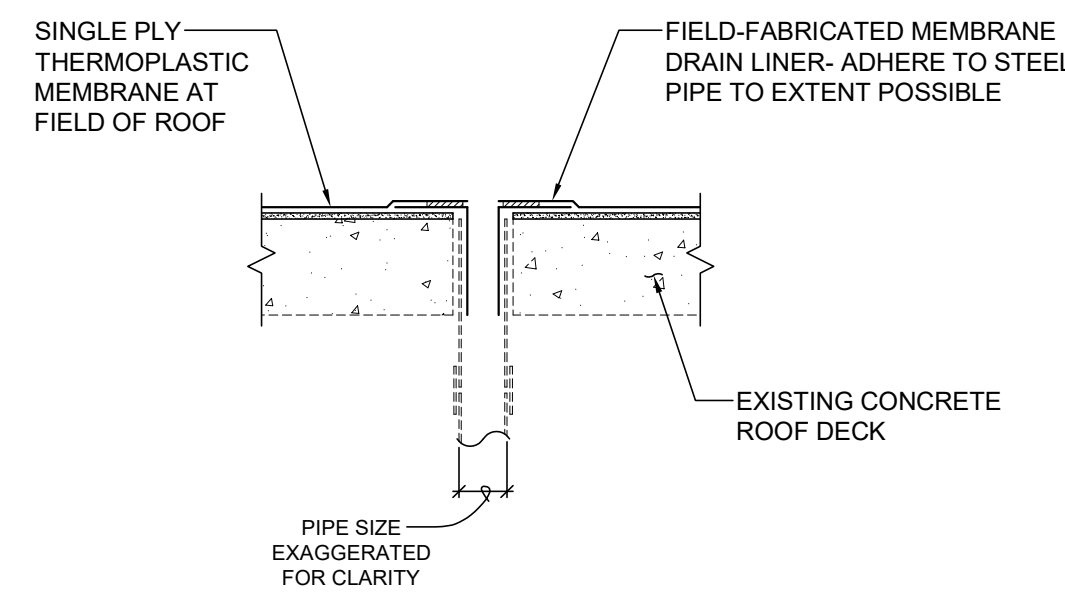
DETAIL AT PARAPET AND TANKS AT AREA A  
1 1/2" = 1'-0" R1.1



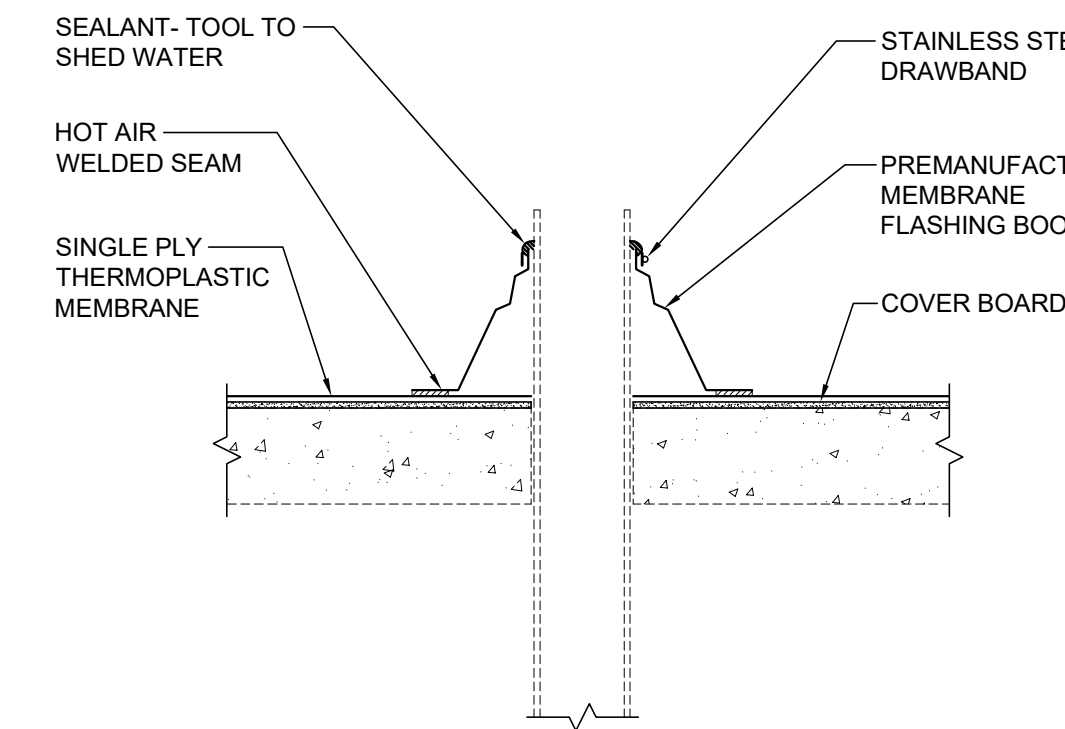
DETAIL AT ROOF EDGE AT AREA B  
1 1/2" = 1'-0" R1.1



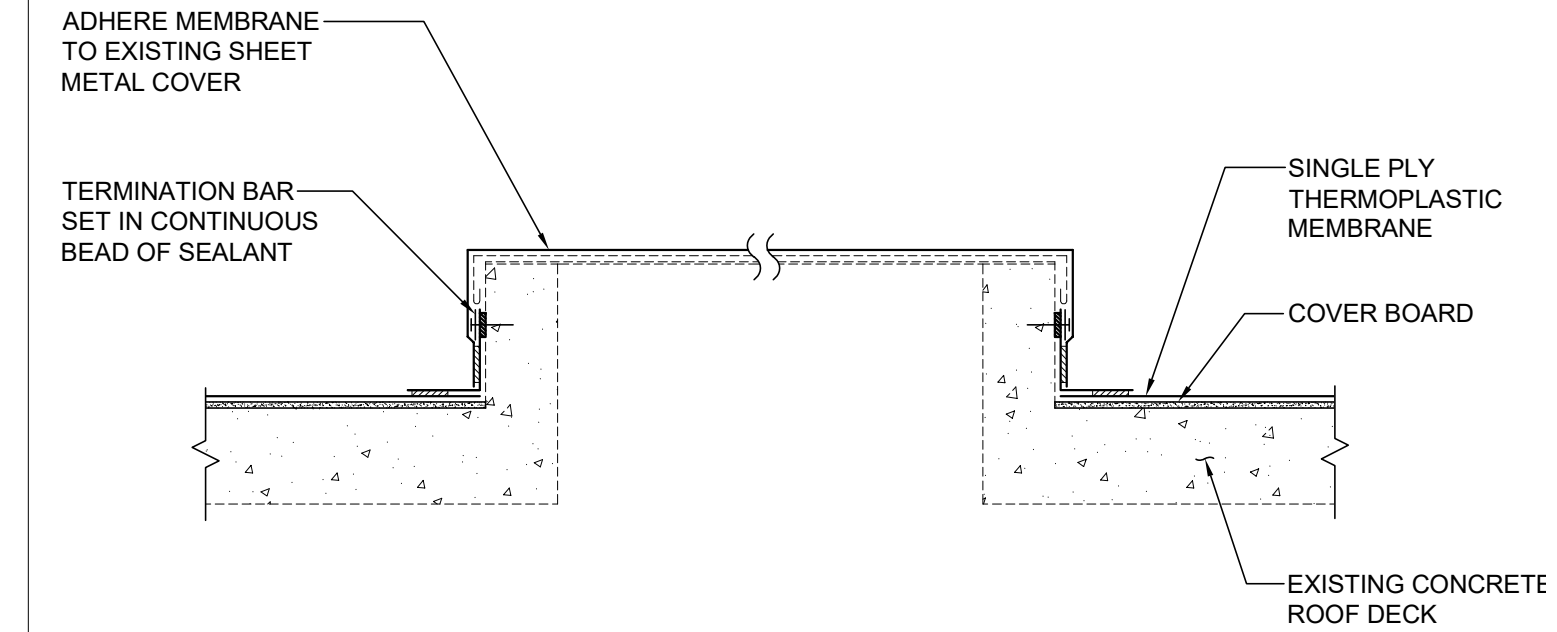
DETAIL AT ROOF EDGE AT AREA B  
3" = 1'-0" R1.1



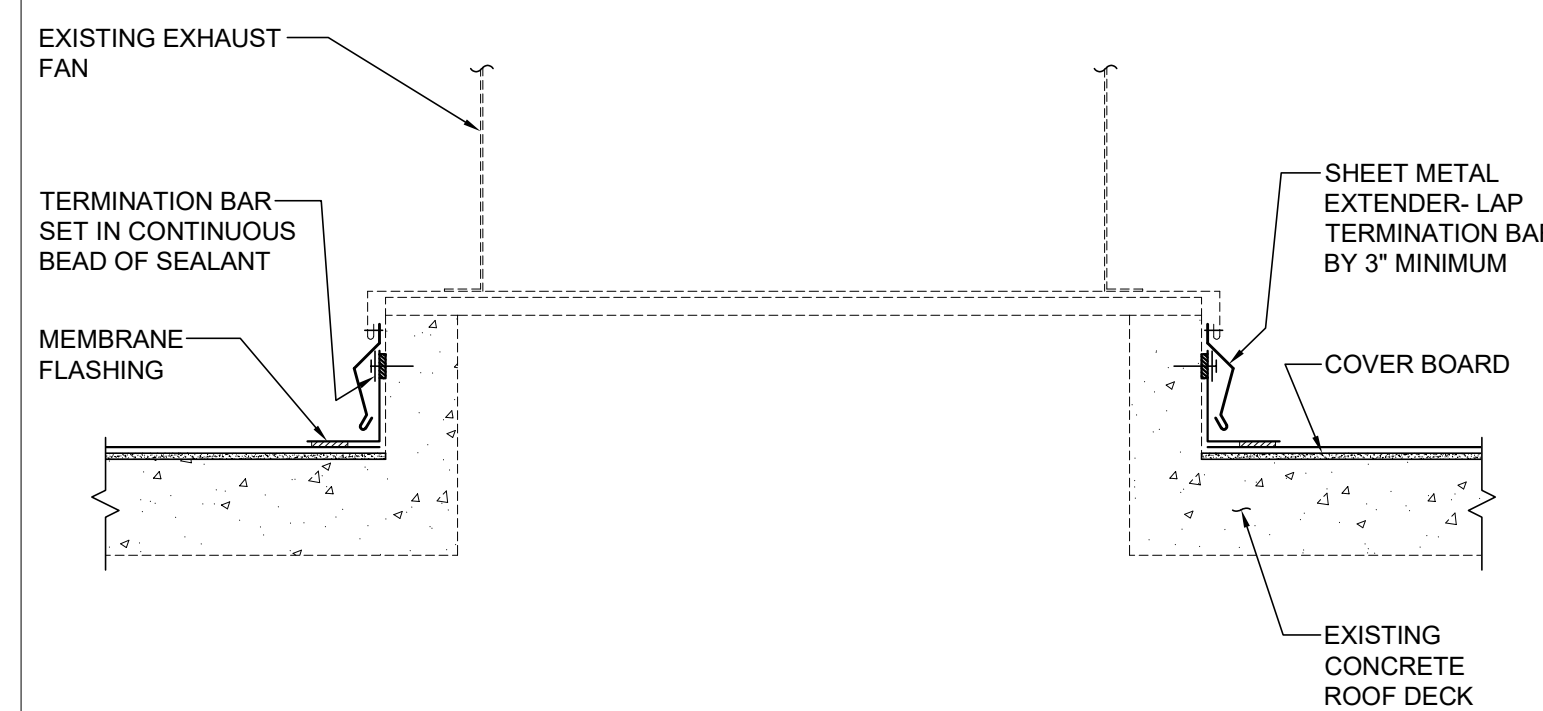
DETAIL AT INTERNAL ROOF DRAIN  
1 1/2" = 1'-0" R1.1



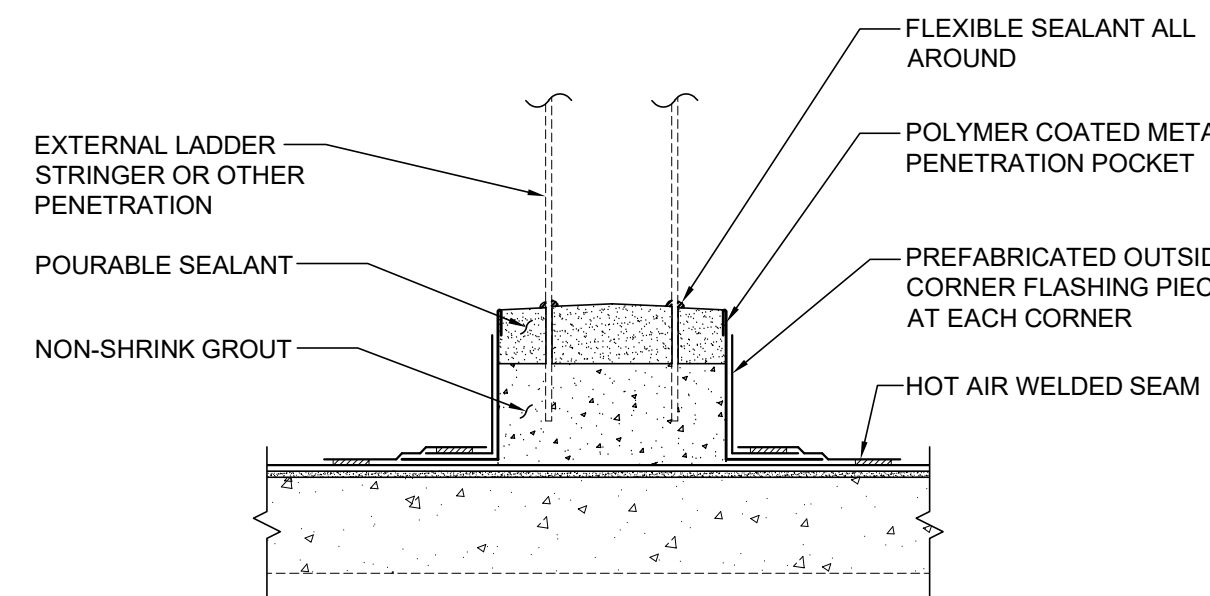
DETAIL AT PLUMBING VENT OR PIPE PENETRATION  
SIMILAR AT TURBINE VENT  
1 1/2" = 1'-0" R1.1



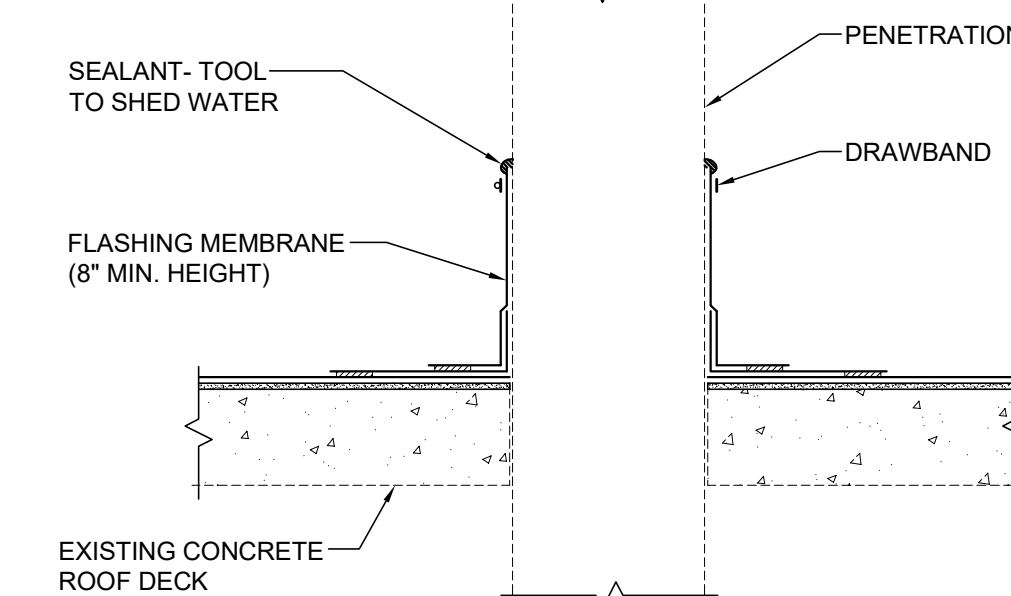
DETAIL AT ABANDONED PENETRATION  
1 1/2" = 1'-0" R1.1



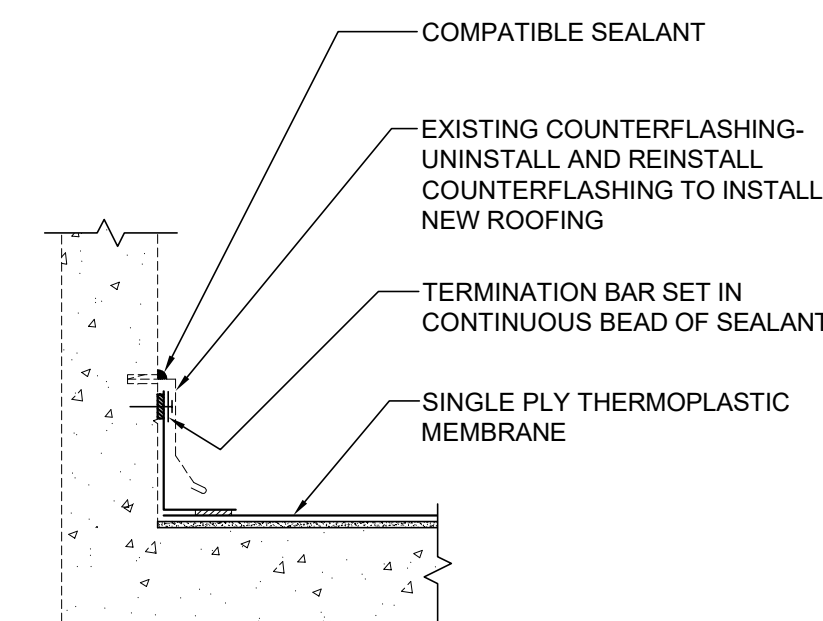
DETAIL AT CURB  
1 1/2" = 1'-0" R1.1



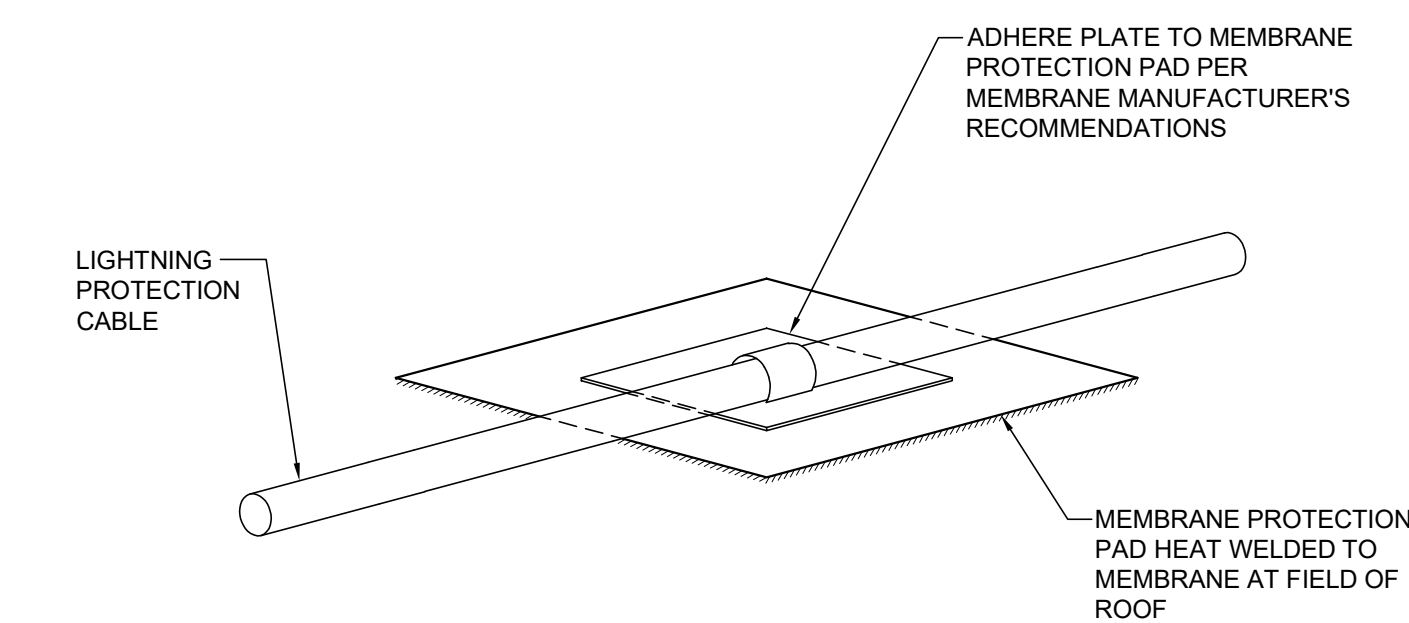
DETAIL AT EXTERNAL LADDER STRINGERS  
1 1/2" = 1'-0" R1.1



DETAIL AT FIELD-WRAPPED PENETRATION  
1 1/2" = 1'-0" R1.1



DETAIL AT TRANSITION  
1 1/2" = 1'-0" R1.1



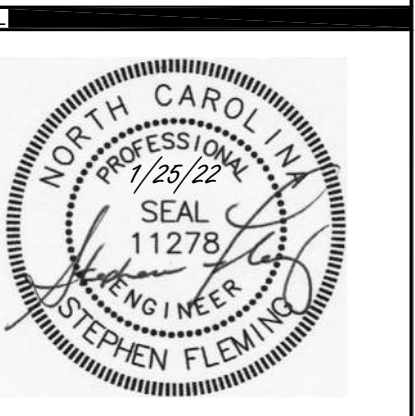
DETAIL AT LIGHTNING PROTECTION  
1 1/2" = 1'-0" R1.1

**FLEMING & ASSOCIATES, P.A.**  
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
1004 HAY STREET, FAYETTEVILLE, NC 28305  
OFFICE 910-433-2825  
FAX 910-433-2604  
www.flemingandassociates.com



This drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming 2022

FAYETTEVILLE PUBLIC WORKS COMMISSION  
RE-ROOFING AT TRANSFER BUILDING,  
THICKENING BUILDING, WATER RESOURCES  
VEHICLE SHED, AND ELECTRIC VEHICLE SHED  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301

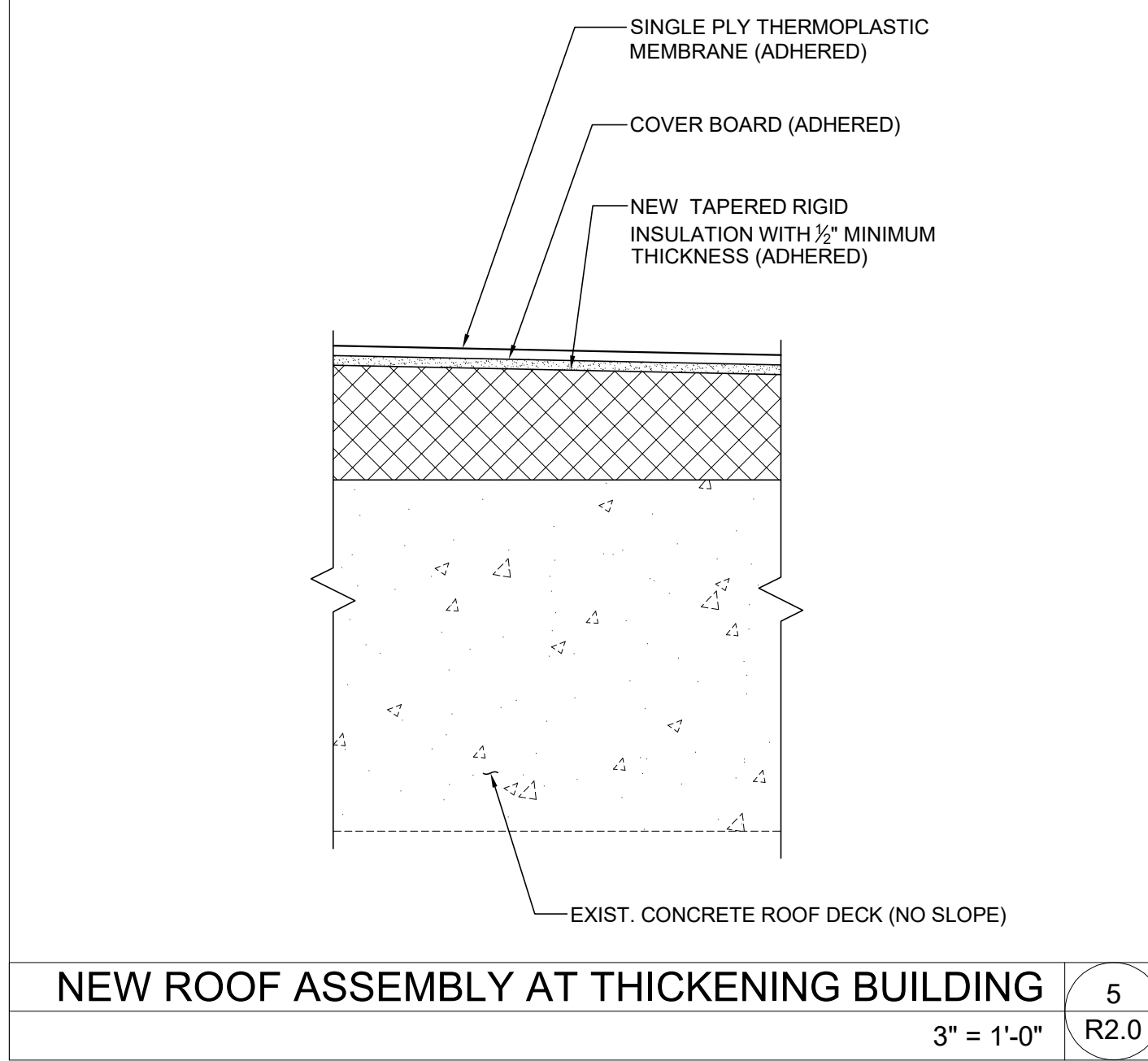


PROJECT TEAM  
DRAWN BY: R. TUCKER, RBEC  
CHECKED BY: S. FLEMING, PE, RBEC

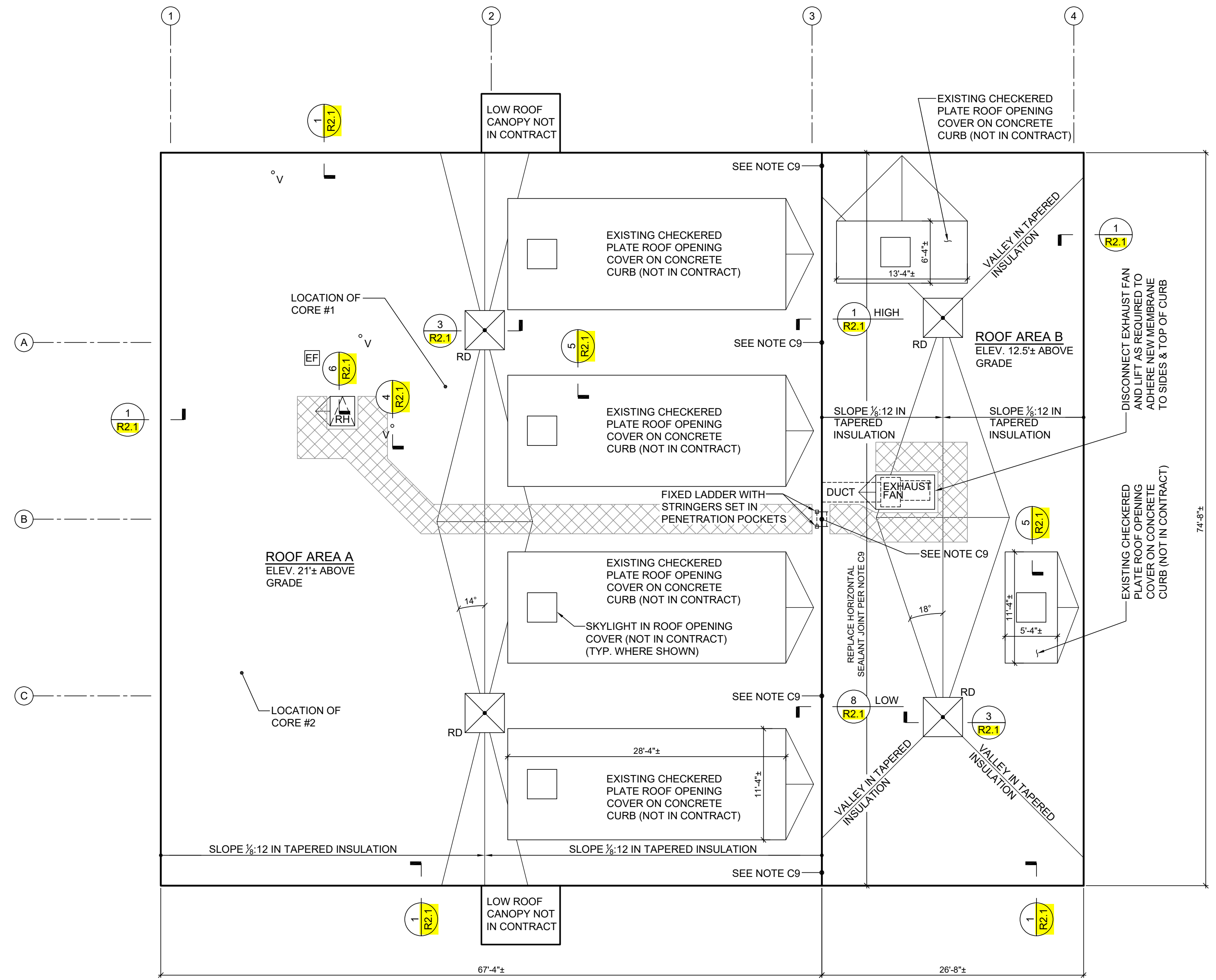
NO.	REASON	DATE

SHEET TITLE  
**TRANSFER BUILDING DETAILS**

DATE: 1/25/2022  
PROJECT NO: 21-81  
SHEET NUMBER: **R1.1**

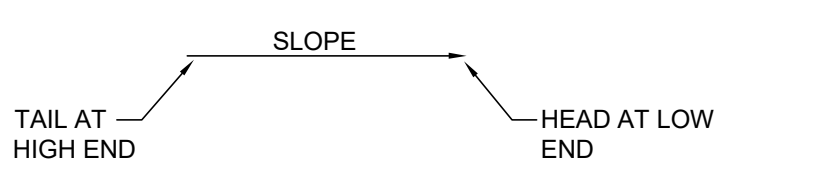


**NEW ROOF ASSEMBLY AT THICKENING BUILDING** 5  
3" = 1'-0" R2.0



**THICKENING BUILDING ROOF PLAN** 1  
1/8" = 1'-0" R2.0

- ° PP PENETRATION POCKET - FLASH PER 7/R2.1
- ° V EXIST. VENT THRU ROOF
- EF EXIST. EXHAUST FAN ON CURB
- \* RD EXIST. PRIMARY ROOF DRAIN
- RD EXIST. PRIMARY ROOF DRAIN w/ 4'-0" MIN. SQUARE SUMP
- RH EXIST. ROOF HATCH
- NEW WALKWAY PAD
- EXIST. OBJECT ABOVE SURFACE OF ROOF



**LEGEND** 2  
NO SCALE R2.0

TAPERED INSULATION SLOPES	
SLOPE AT FIELD OF ROOF (SHOWN ON PLAN)	MINIMUM SLOPE AT CRICKET OR SADDLE
1/8":12	1/4":12
1/4":12	3/8":12

- CRICKETS BETWEEN DRAINS ARE 14" (4-1) OR 18" (3-1), AS SHOWN ON ROOF PLAN.
- PROVIDE CRICKETS AT UPSLOPE SIDE OF ALL CURBS OR PENETRATIONS WIDER THAN 24". CRICKETS AT PENETRATIONS SHALL BE 45° (1-1) OR THE MAXIMUM WIDTH POSSIBLE.
- LAYOUT SHOWN ON THE DRAWINGS FOR NEW RIDGES, HIPS, VALLEYS & SADDLES IS FOR GENERAL REFERENCE ONLY. CONTRACTOR TO SUBMIT FINAL TAPERED INSULATION LAYOUT AND SHOP DRAWINGS FROM INSULATION SUPPLIER. SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR REVIEW BEFORE PLACING INSULATION ORDER AND BEFORE WORK BEGINS.

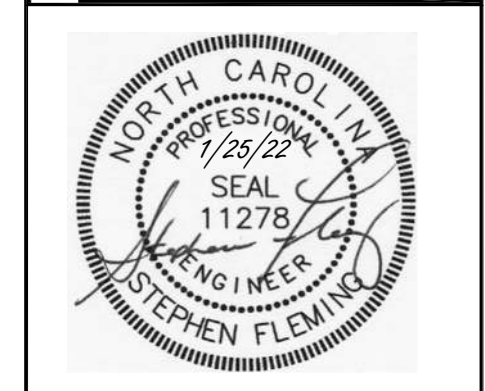
**SCHEDULE** 3  
NO SCALE R2.0

- A. NOTES: EXISTING CONDITIONS**
- EXISTING ROOF COMPOSITION AT ALL AREAS: SMOOTH SURFACE BUILT-UP ROOF WITH ALUMINUM COATING PERLITE INSULATION (TAPERED); 0.75" THICK AT CORE #1 AND 2.25" THICK AT CORE #2; AT BOTH CORE LOCATIONS, ALL LAYERS OF PERLITE WERE LOOSE LAID; AT ROOF AREA B, PERLITE WAS WET CONCRETE ROOF DECK (NO SLOPE)
- B. NOTES: DEMOLITION**
- EXCEPT WHERE SPECIFICALLY NOTED ALL EXISTING INSULATION, ROOFING, CANTS, CRICKETS, AND METAL FLASHING ARE TO BE REMOVED.
  - ENSURE BUILDING IS PROTECTED DURING TEAR-OFF AND ROOF REPLACEMENT.
  - EXISTING WOOD NAILERS TO REMAIN IF FOUND IN GOOD CONDITION.
- C. NOTES: NEW WORK**
- CONTRACTOR IS TO INSTALL NEW RIGID INSULATION, ROOFING, FASCIA, ETC., AS SHOWN ON DRAWINGS AND INDICATED IN THE SPECIFICATIONS FOR A COMPLETE ROOF SYSTEM.
  - ALL PLUMBING VENTS, MECHANICAL EQUIPMENT, ETC., SHOWN ON THIS ROOF PLAN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE (SEE LEGEND).
  - DIMENSIONS FOR NEW SHEET METAL COMPONENTS ARE TO BE FIELD VERIFIED BEFORE FABRICATION.
  - FOLLOW RECOMMENDATIONS OF MEMBRANE MANUFACTURER, SPRI, NRCA, SMACNA, AND INDUSTRY STANDARDS UNLESS SHOWN OTHERWISE.
  - CONTRACTOR SHALL HAVE ADHESIVE MANUFACTURER CONDUCT ADHESION TESTS TO DETERMINE STRENGTH OF ADHESIVE AND INSULATION TO CONCRETE DECK. SUBMIT RESULTS OF TESTS TO ENGINEER FOR REVIEW BEFORE INSTALLATION.
  - VERIFY ALL ROOF DRAINS ARE CLEAN, FULLY OPERATIONAL, AND WATERTIGHT.
  - ALL ROOF EDGING FLASHING SHALL COMPLY WITH SECTION 1504.5 OF THE NORTH CAROLINA BUILDING CODE AND BE TESTED FOR RESISTANCE IN ACCORDANCE WITH ANS/SPRI ES-1.
  - ALL NEW NAILERS AND ANCHORS SHOWN IN THE DETAILS ARE TO BE INCLUDED IN THE BASE BID. REPLACEMENT OF DAMAGED OR MISSING WOOD NAILERS OR ANCHOR BOLTS ABOVE BASE BID QUANTITIES SHALL BE HANDLED ON A UNIT PRICE BASIS.
  - REPLACE JOINT SEALANT AT EXTERIOR WALL TRANSITIONING BETWEEN ROOF AREAS A AND B. VERTICAL JOINTS LOCATED ON ROOF PLAN. REPLACE HORIZONTAL JOINT BETWEEN PRECAST CONCRETE AND BRICK VENEER NOT SHOWN ON PLAN. SEE 10/R2.1.

**GENERAL NOTES** 4  
NO SCALE R2.0

This drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming, 2022

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING,**  
**THICKENING BUILDING, WATER RESOURCES**  
**VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301

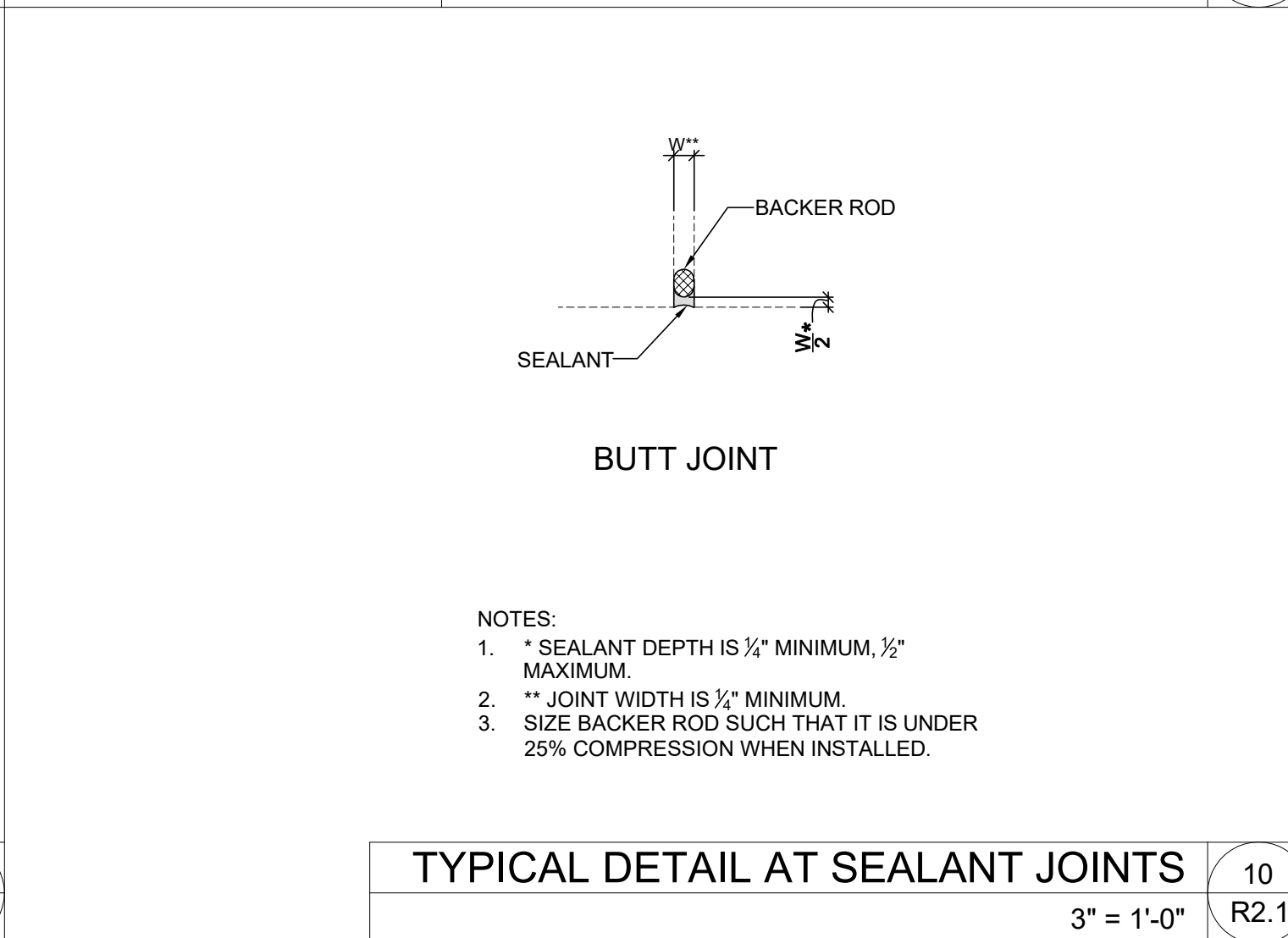
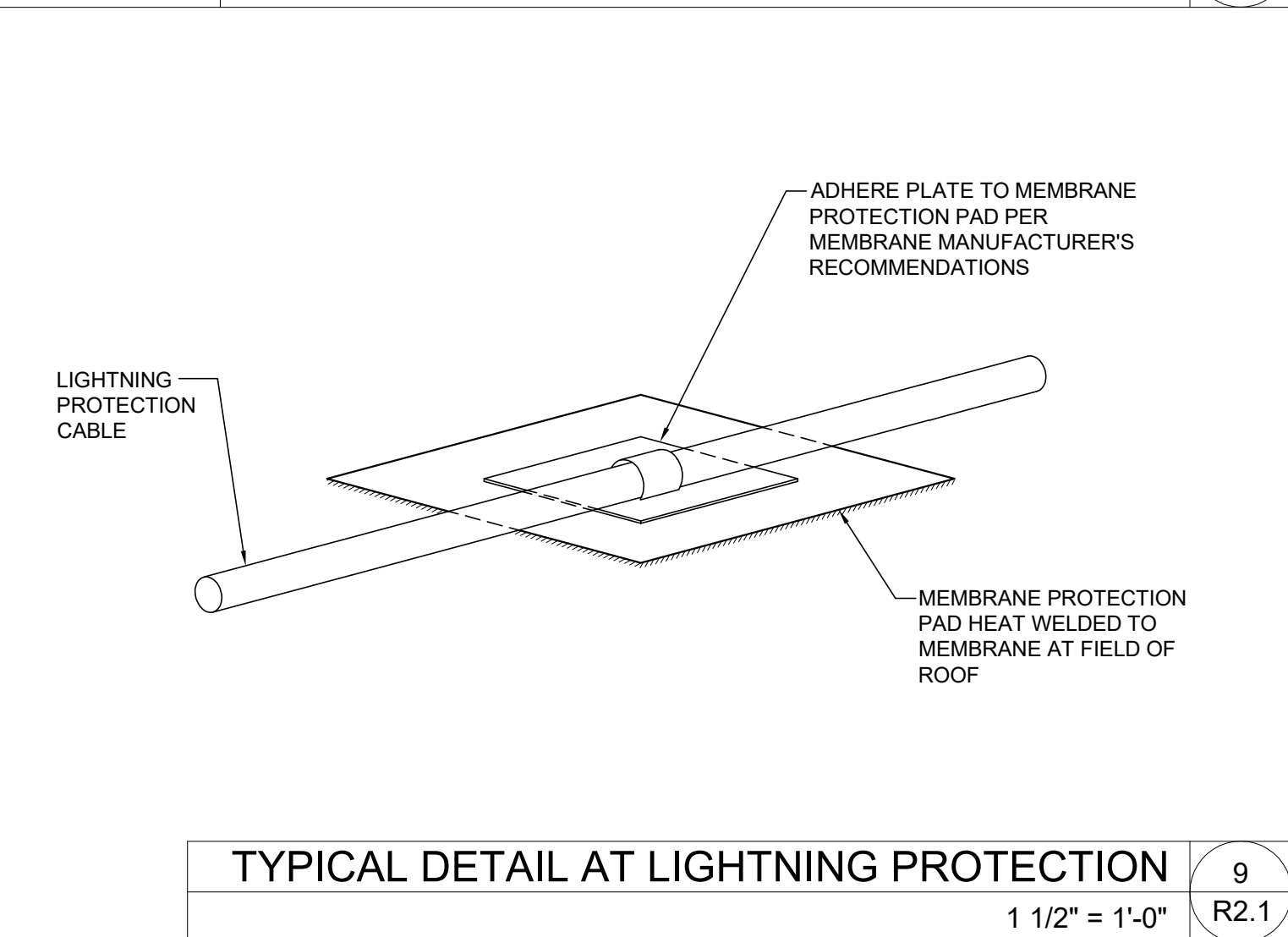
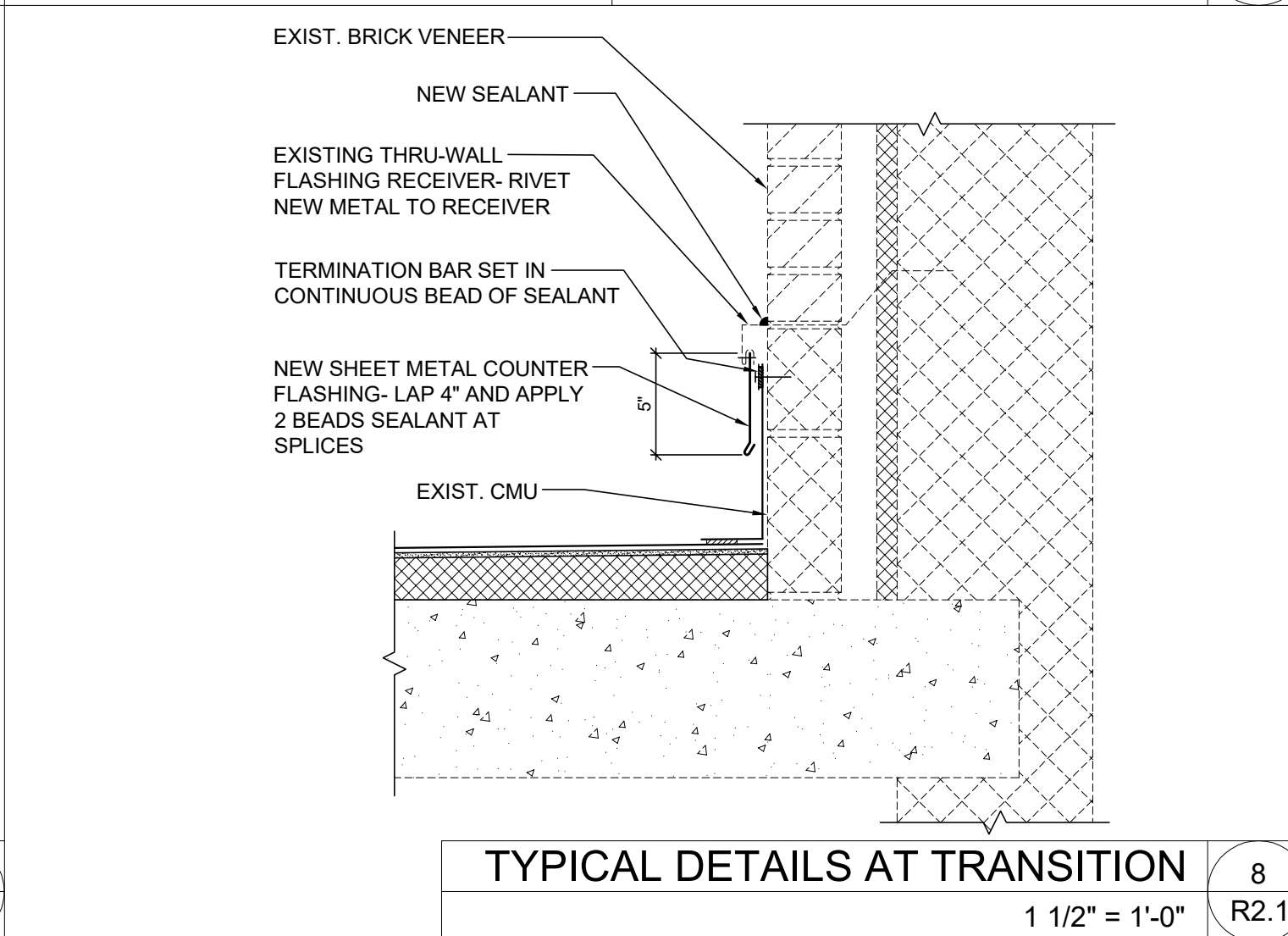
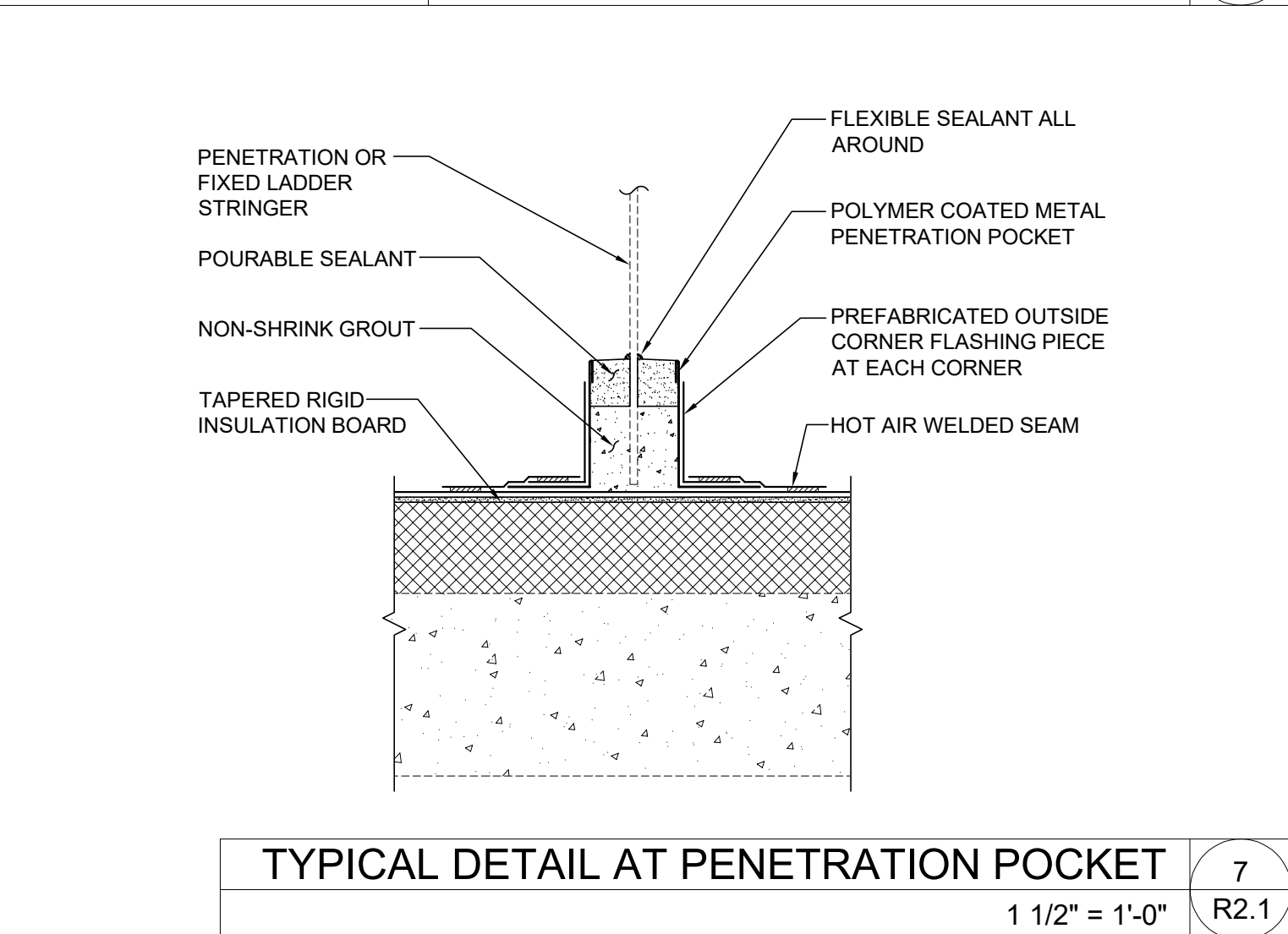
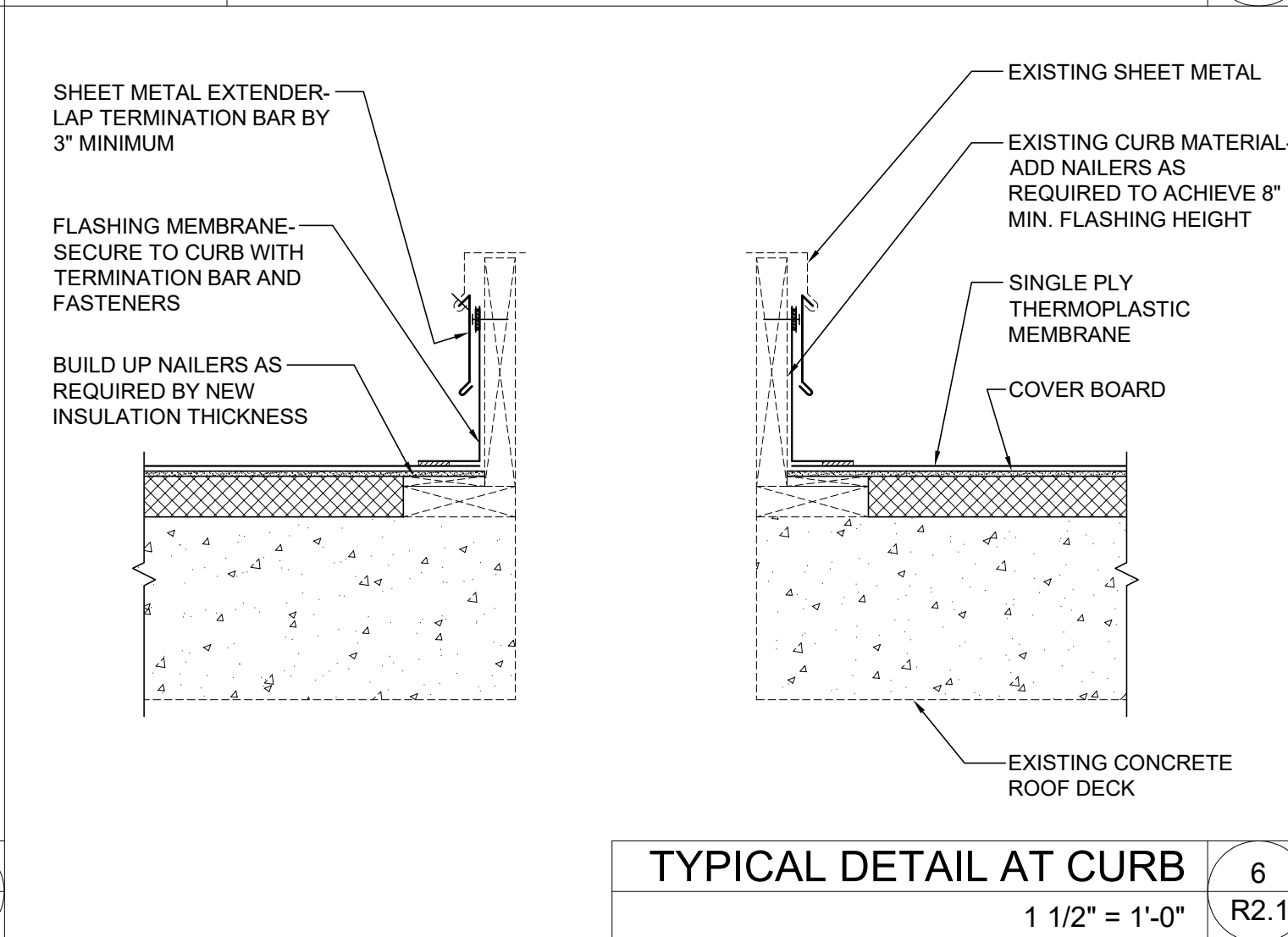
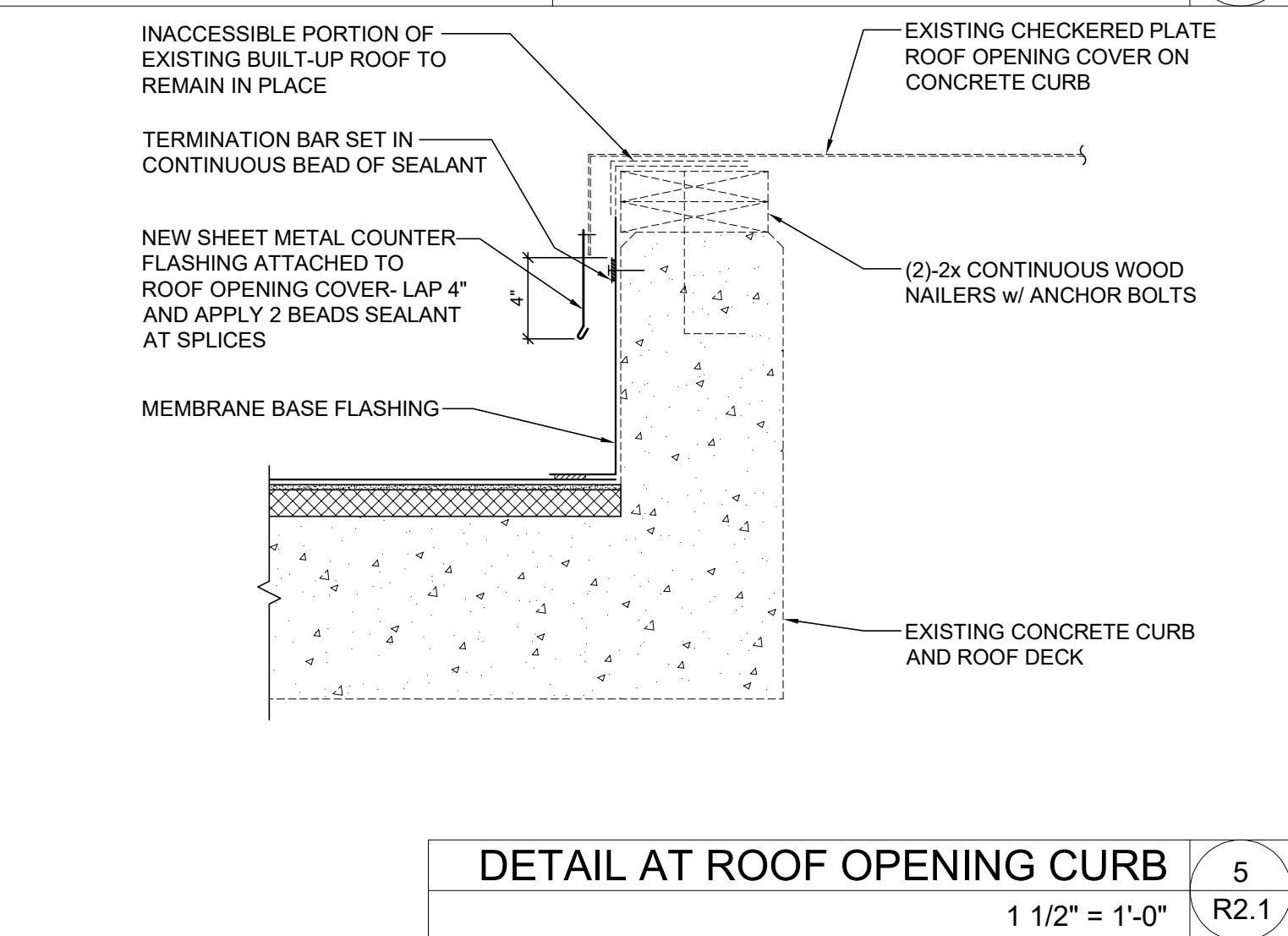
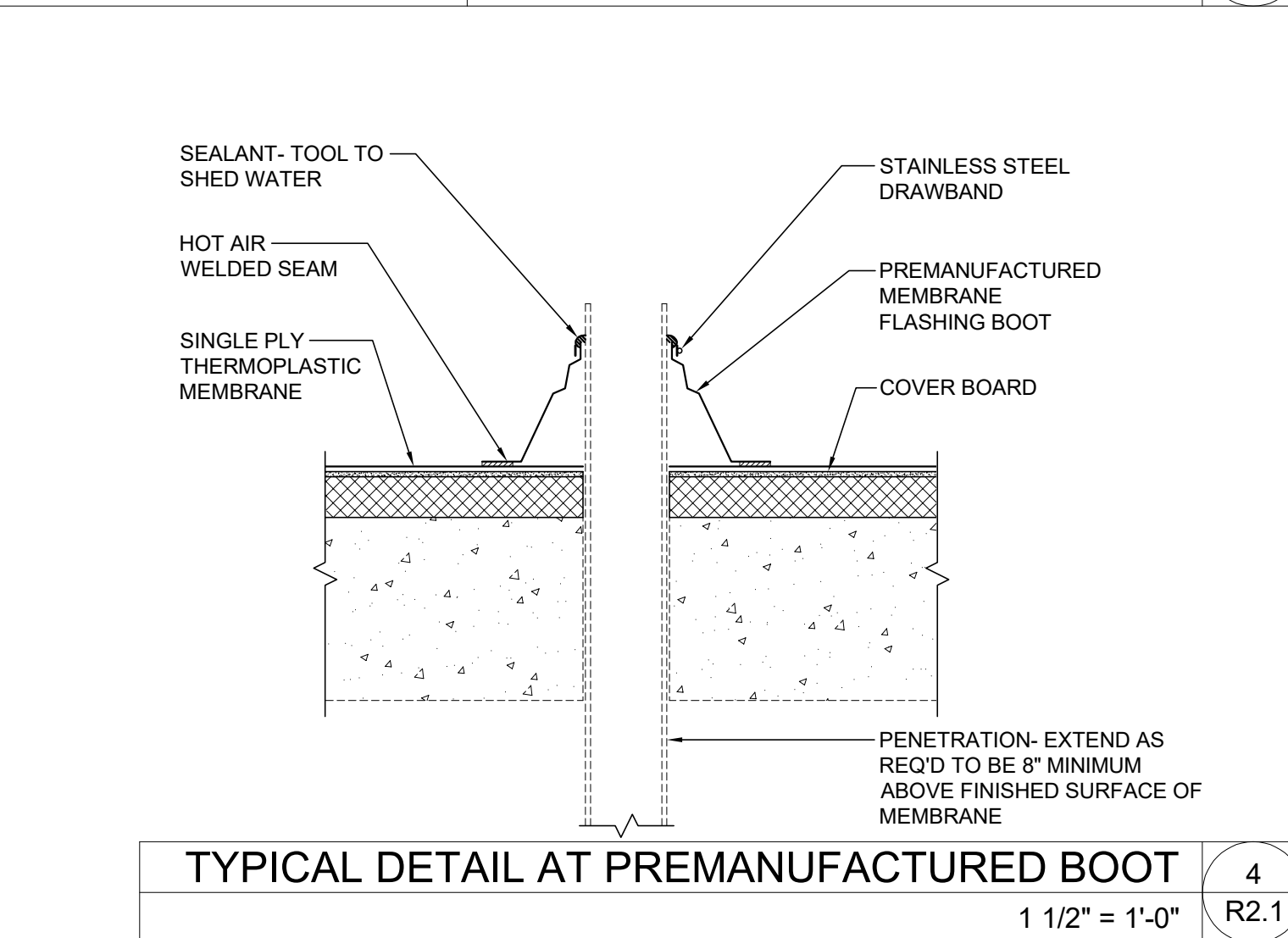
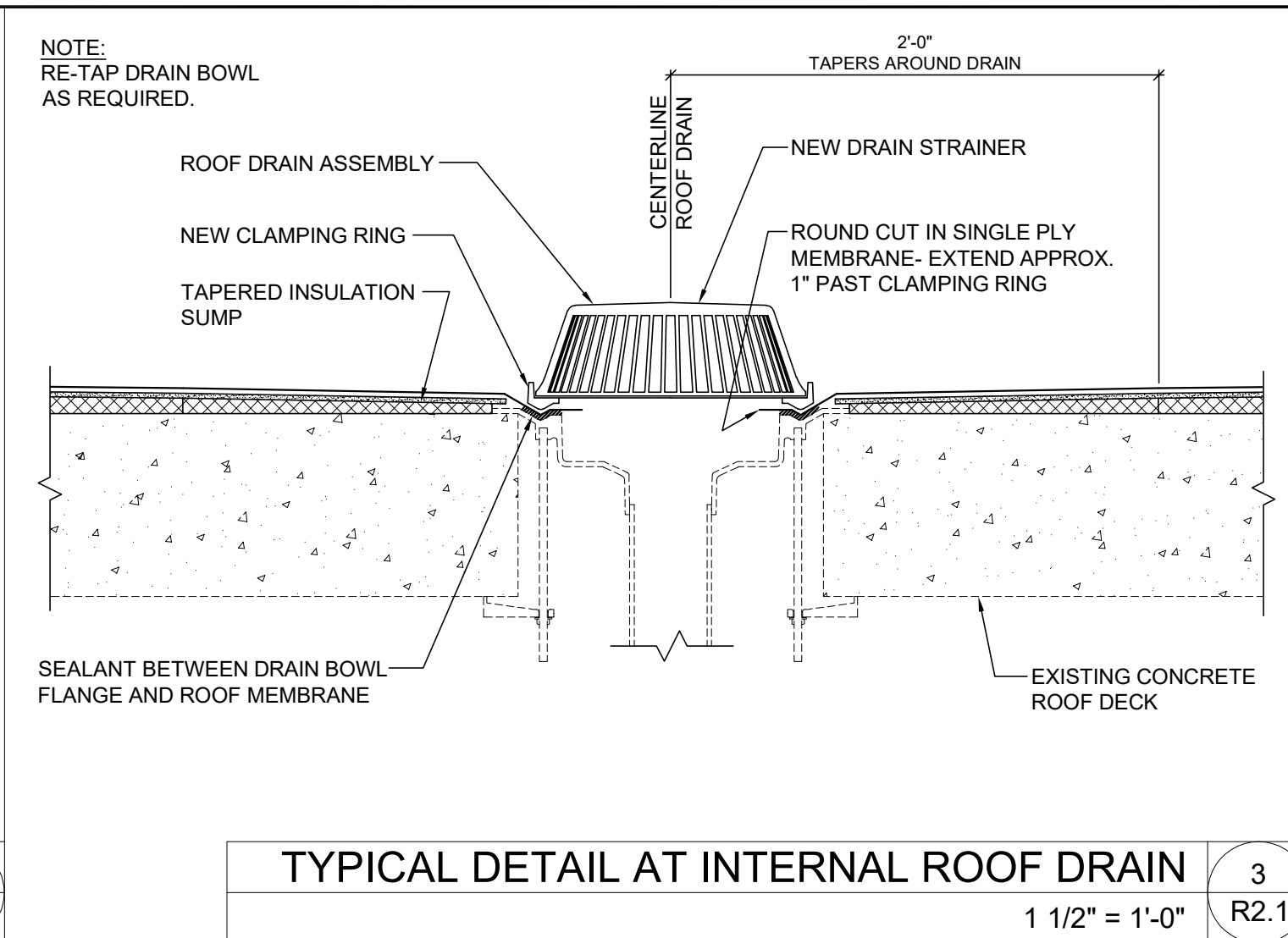
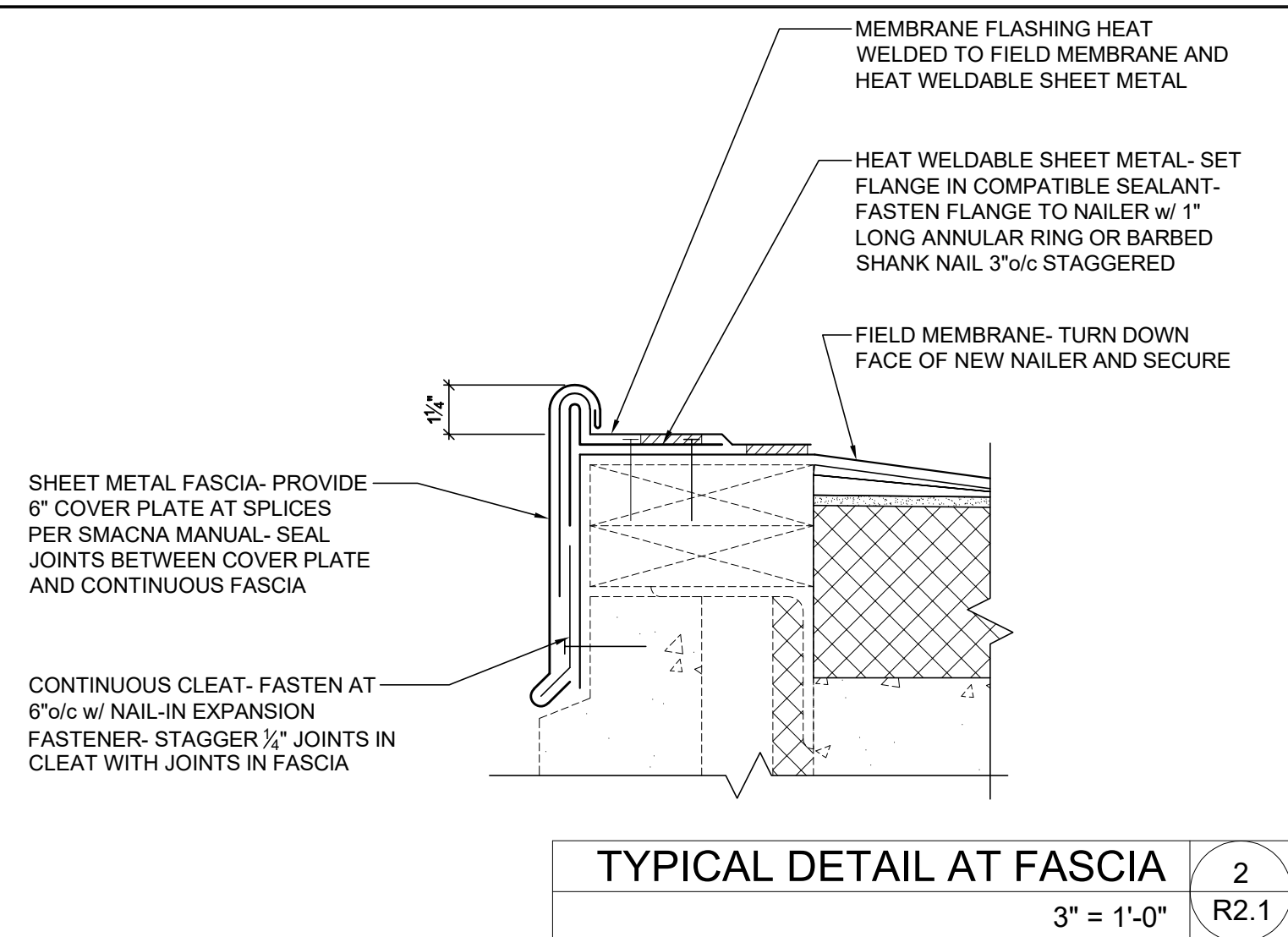
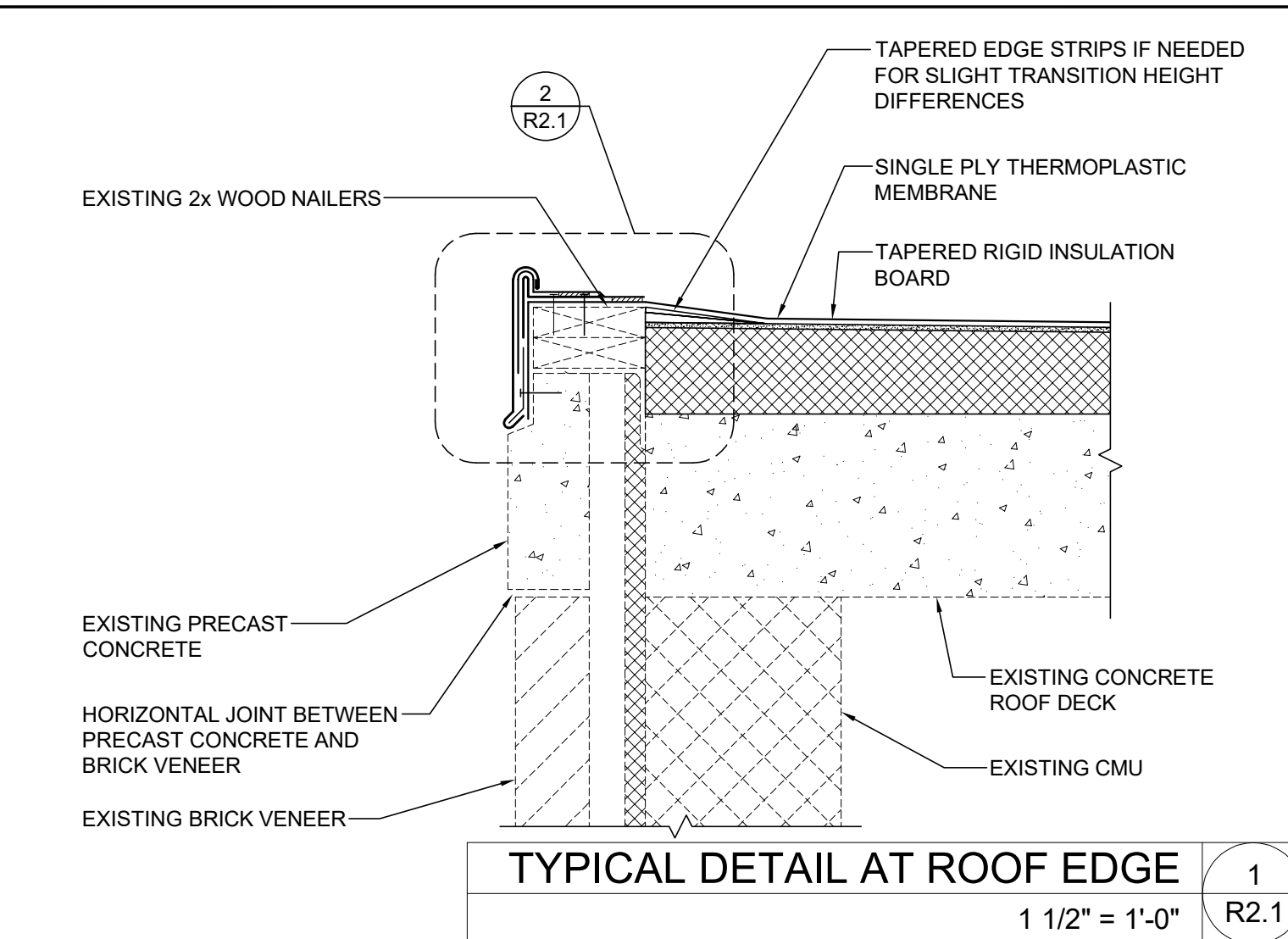


**PROJECT TEAM**  
DRAWN BY: R. TUCKER, RBEC  
CHECKED BY: S. FLEMING, PE, RBEC

NO.	REASON	DATE

**SHEET TITLE**  
**THICKENING BUILDING ROOF PLAN, NOTES, AND LEGEND**





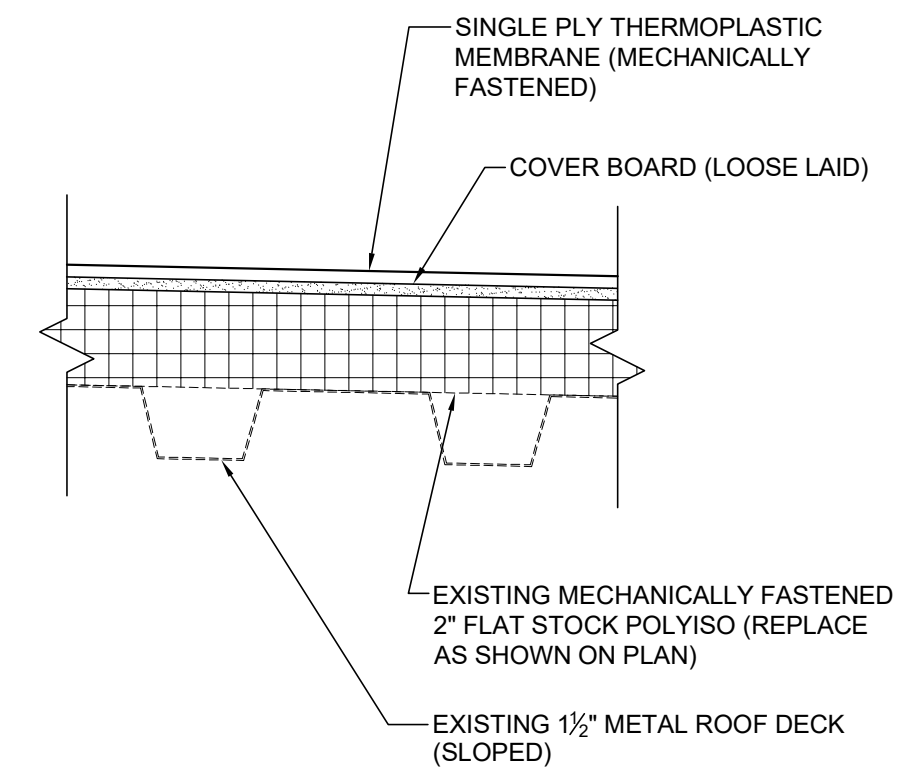
**FLEMING & ASSOCIATES, P.A.**  
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
1004 HAY STREET, FAYETTEVILLE, NC 28305  
OFFICE 910-433-2825  
FAX 910-433-2604  
www.flemingandassociates.com

**FF**  
This drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming 2022

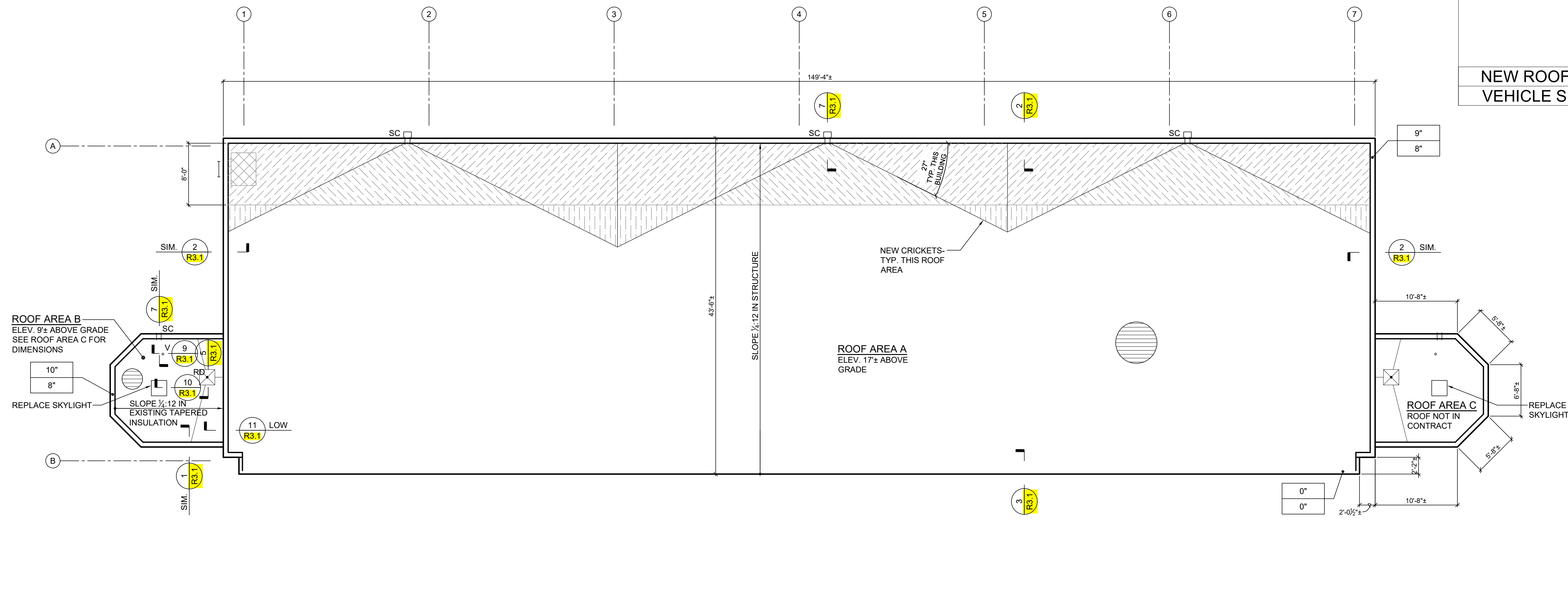
**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING,**  
**THICKENING BUILDING, WATER RESOURCES**  
**VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301



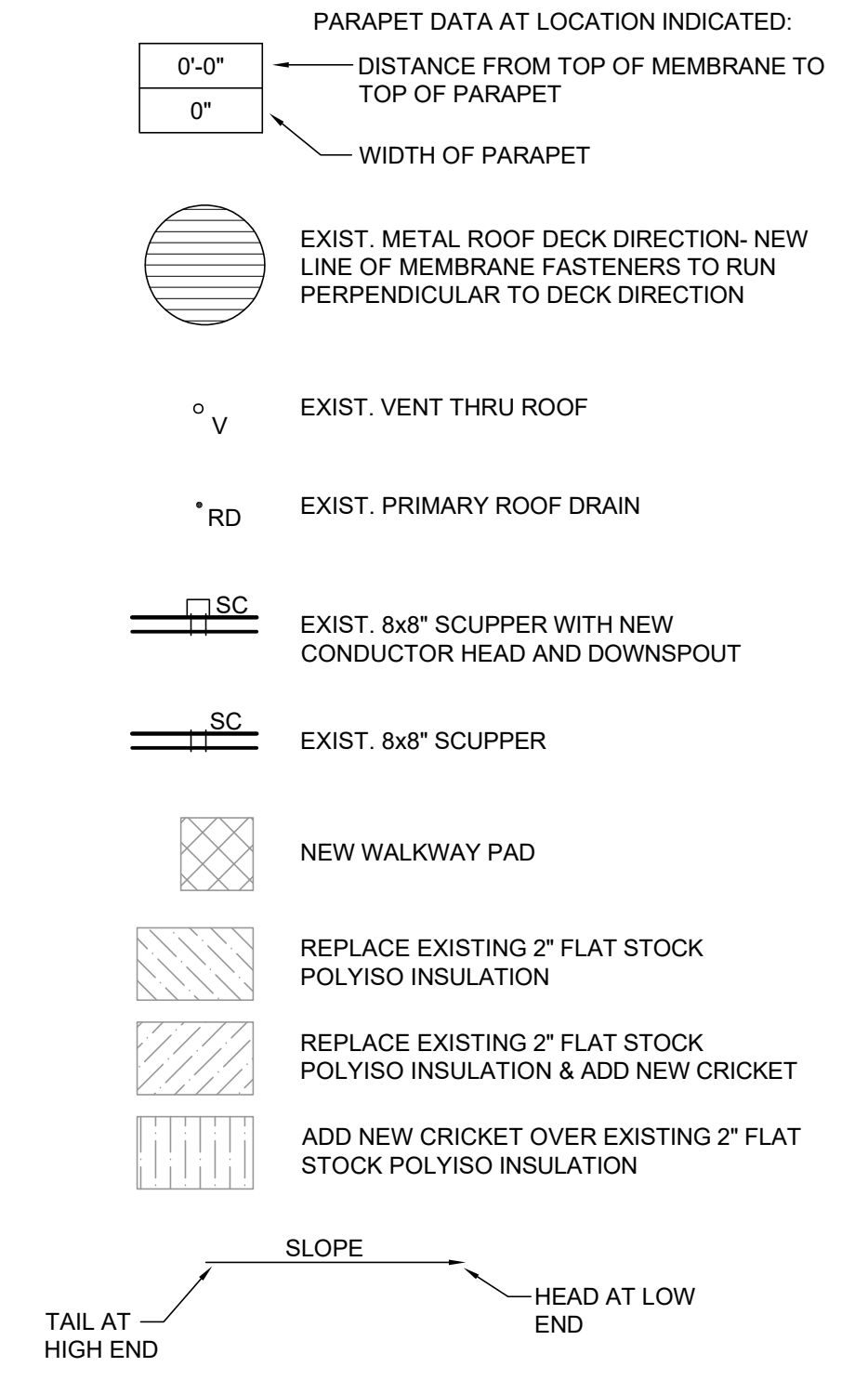
PROJECT TEAM		
DRAWN BY: R. TUCKER, RBEC		
CHECKED BY: S. FLEMING, PE, RBEC		
REVISIONS		
NO.	REASON	DATE
SHEET TITLE		
<b>THICKENING BUILDING DETAILS</b>		
DATE	SHEET NUMBER	
1/25/2022		
PROJECT NO.	<b>R2.1</b>	
	21-81	



**NEW ROOF ASSEMBLY AT WATER RESOURCES VEHICLE SHED** 3  
3" = 1'-0" R3.0



**WATER RESOURCES VEHICLE SHED ROOF PLAN** 1  
1/8" = 1'-0" R3.0



**LEGEND** 2  
NO SCALE R3.0

TAPERED INSULATION SLOPES	
SLOPE AT FIELD OF ROOF (SHOWN ON PLAN)	MINIMUM SLOPE AT CRICKET OR SADDLE
1/8:12	1/4:12
1/4:12	3/8:12

1. CRICKETS BETWEEN DRAINS SHOWN ON PLAN ARE 27" (2:1) UNLESS NOTED OTHERWISE. LAYOUT SHOWN ON THE DRAWINGS FOR NEW CRICKETS IS FOR GENERAL REFERENCE ONLY. CONTRACTOR TO SUBMIT FINAL TAPERED INSULATION LAYOUT AND SHOP DRAWINGS FROM INSULATION SUPPLIER. SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR REVIEW BEFORE PLACING INSULATION ORDER AND BEFORE WORK BEGINS.

**SCHEDULE** 4  
NO SCALE R3.0

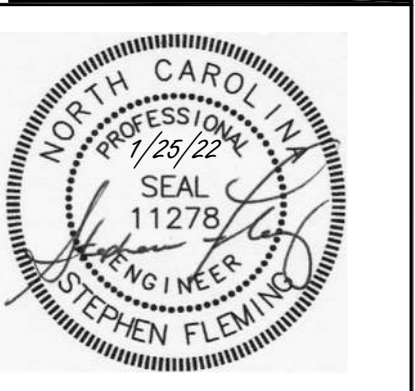
- A. NOTES: EXISTING CONDITIONS**
- EXISTING ROOF COMPOSITION AT ALL AREAS: SINGLE PLY THERMOPLASTIC MEMBRANE (MECH. FASTENED), 2" POLYISO INSULATION (MECH. FASTENED), 1/2" 20 GA. INTERMEDIATE RIB METAL ROOF DECK
- B. NOTES: DEMOLITION**
- REMOVE EXISTING SINGLE PLY MEMBRANE AND ALL FLASHINGS.
  - PROTECT BUILDING DURING TEAR-OFF AND ROOF REPLACEMENT.
  - EXISTING WOOD NAILERS TO REMAIN IF FOUND IN GOOD CONDITION.
- C. NOTES: NEW WORK**
- CONTRACTOR IS TO INSTALL COVER BOARD, INSULATION WHERE SHOWN, ROOFING, SHEET METAL, ETC., AS SHOWN ON DRAWINGS AND INDICATED IN THE SPECIFICATIONS FOR A COMPLETE ROOF SYSTEM.
  - MATCH BOTH EXISTING ROOF EDGE SHEET METAL COLORS.
  - ALL ROOF DRAINS, SCUPPERS, PLUMBING VENTS, MECHANICAL EQUIPMENT, ETC. SHOWN ON THIS ROOF PLAN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE (SEE LEGEND).
  - DIMENSIONS FOR NEW SHEET METAL COMPONENTS ARE TO BE FIELD VERIFIED BEFORE FABRICATION.
  - FOLLOW RECOMMENDATIONS OF MEMBRANE MANUFACTURER, SPRI, NRCA, SMACNA, AND INDUSTRY STANDARDS UNLESS SHOWN OTHERWISE.
  - FASTENER MANUFACTURER SHALL CONDUCT PULL TESTS TO DETERMINE STRENGTH OF FASTENERS CONNECTING MEMBRANE TO METAL DECK. SUBMIT FASTENER SAMPLE AND RESULTS OF PULL TESTS TO ENGINEER FOR REVIEW BEFORE INSTALLATION.
  - VERIFY ALL ROOF DRAINS ARE CLEAN, FULLY OPERATIONAL, AND WATERTIGHT.
  - ALL ROOF EDGING FLASHING SHALL COMPLY WITH SECTION 1504.5 OF THE NORTH CAROLINA BUILDING CODE AND BE TESTED FOR RESISTANCE IN ACCORDANCE WITH ANSIS/SPRI ES-1.
  - ALL NEW NAILERS AND ANCHORS SHOWN IN THE DETAILS ARE TO BE INCLUDED IN THE BASE BID. REPLACEMENT OF DAMAGED OR MISSING WOOD NAILERS OR ANCHOR BOLTS ABOVE BASE BID QUANTITIES SHALL BE HANDLED ON A UNIT PRICE BASIS.

**GENERAL NOTES** 5  
NO SCALE R3.0

**FLEMING & ASSOCIATES, P.A.**  
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
1004 HAY STREET, FAYETTEVILLE, NC 28305  
OFFICE 910-433-2825  
FAX 910-433-2604  
www.flemingandassociates.com

**F&A**  
The drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming 2022

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING, THICKENING BUILDING, WATER RESOURCES VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301



**PROJECT TEAM**  
DRAWN BY: R. TUCKER, RBEC  
CHECKED BY: S. FLEMING, PE, RBEC

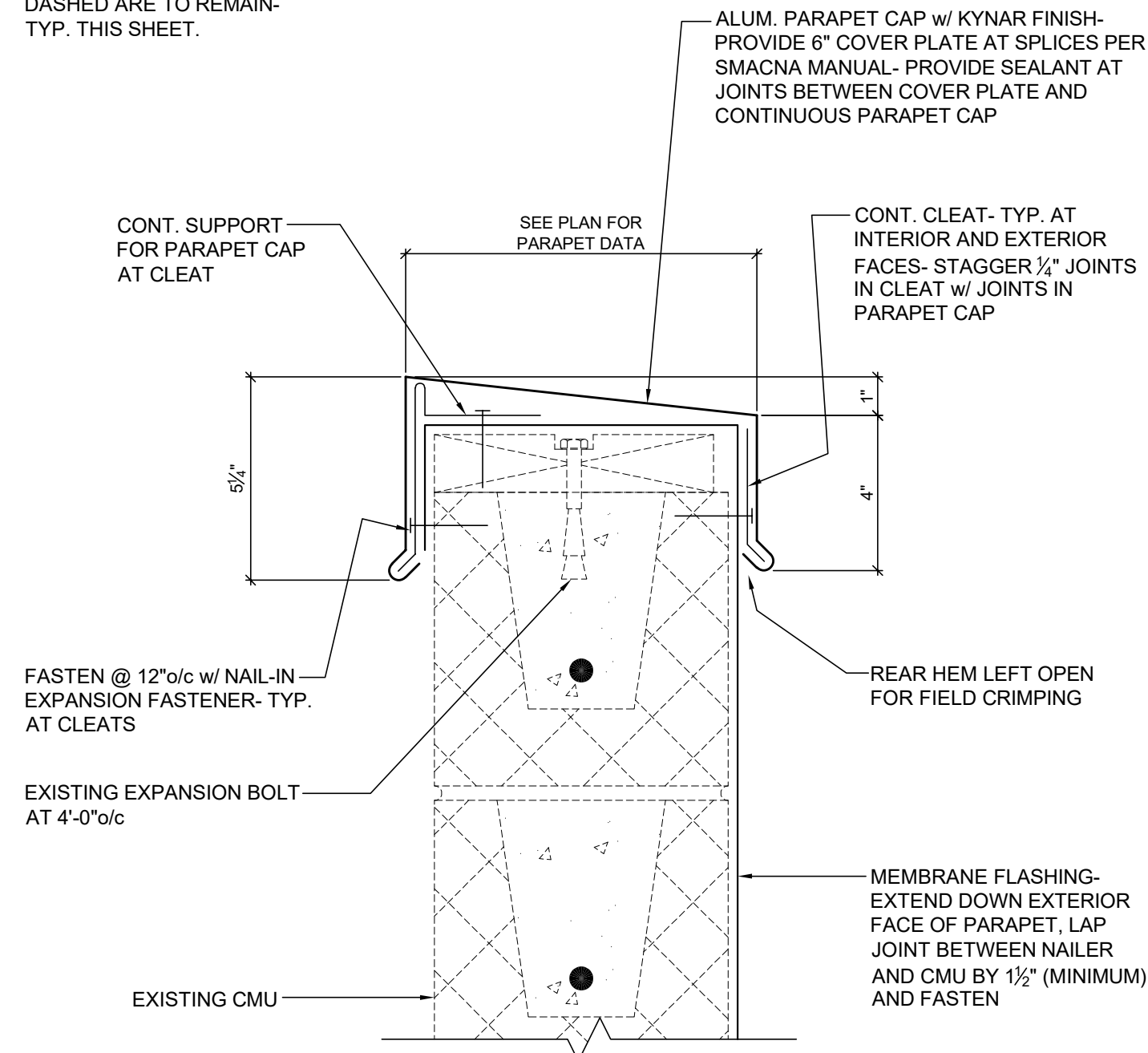
REVISIONS		
NO.	REASON	DATE

**WR VEHICLE SHED ROOF PLAN, NOTES, AND LEGEND**

DATE: 1/25/2022 SHEET NUMBER: R3.0  
PROJECT NO: 21-81

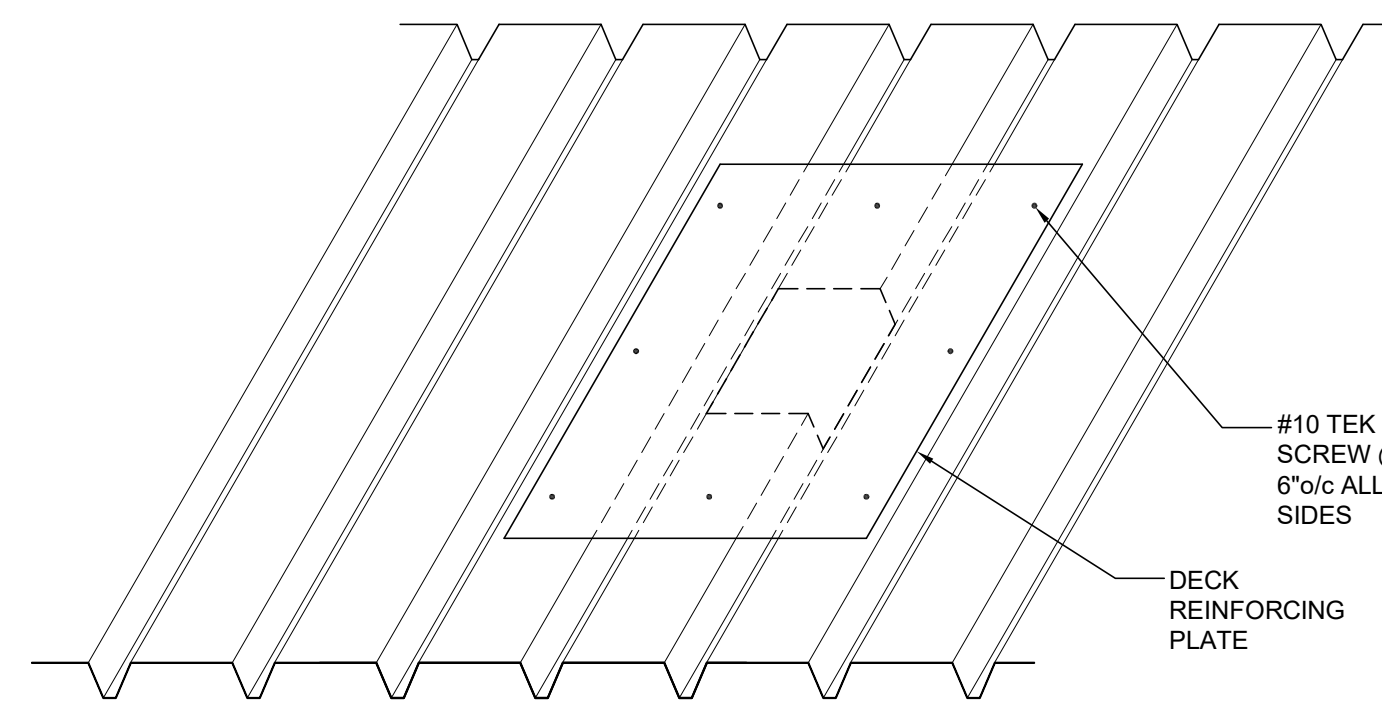


NOTE:  
EXISTING ITEMS SHOWN  
DASHED ARE TO REMAIN-  
TYP. THIS SHEET.

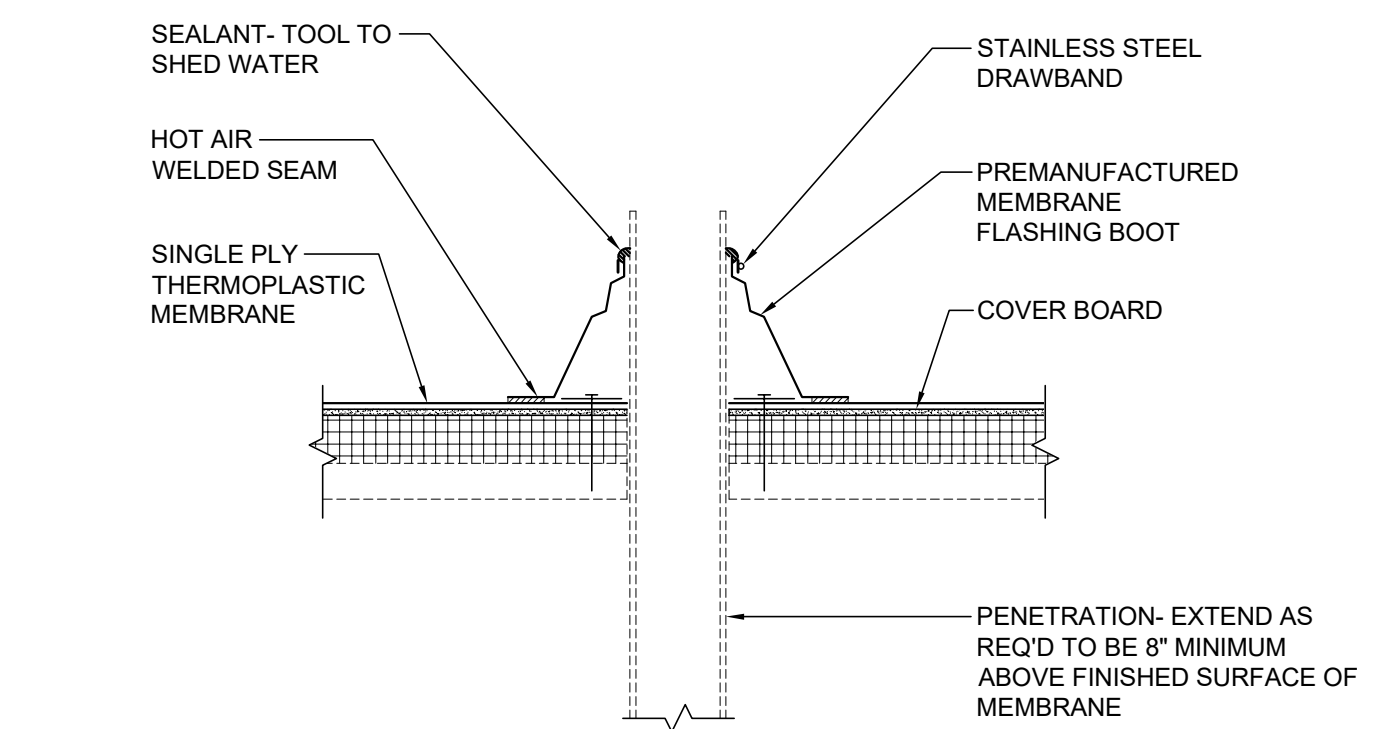


**DETAIL AT PARAPET CAP** 1  
3" = 1'-0" R3.1

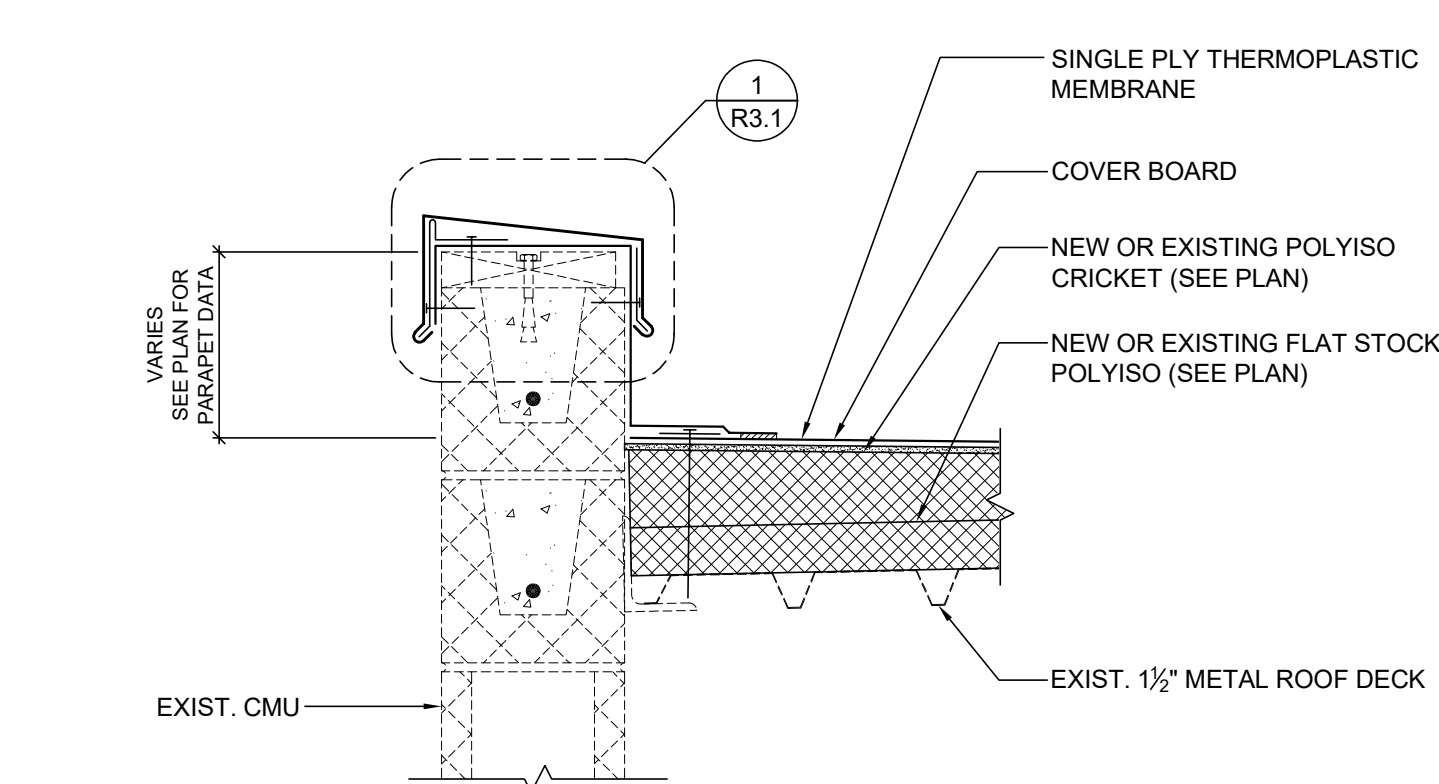
METAL DECK REINFORCING SCHEDULE		
UNIT PRICE DESCRIPTION	OPENING SIZE	INFILL MATERIAL (MINIMUM)
METAL DECK REPAIR	LESS THAN 13" DIAMETER	16 GA. GALVANIZED STEEL PLATE- FASTEN AS SHOWN IN DRAWING
METAL DECK REPLACEMENT	GREATER THAN 13" DIAMETER	1 1/2" GALVANIZED NARROW RIB METAL ROOF DECK- 22 GA. MIN.- FASTEN ENDS AT 6" o/c TO SUPPORTING STRUCTURE WITH #12 TEK SCREWS- INFILLED DECK TO EXTEND FROM SUPPORT TO SUPPORT



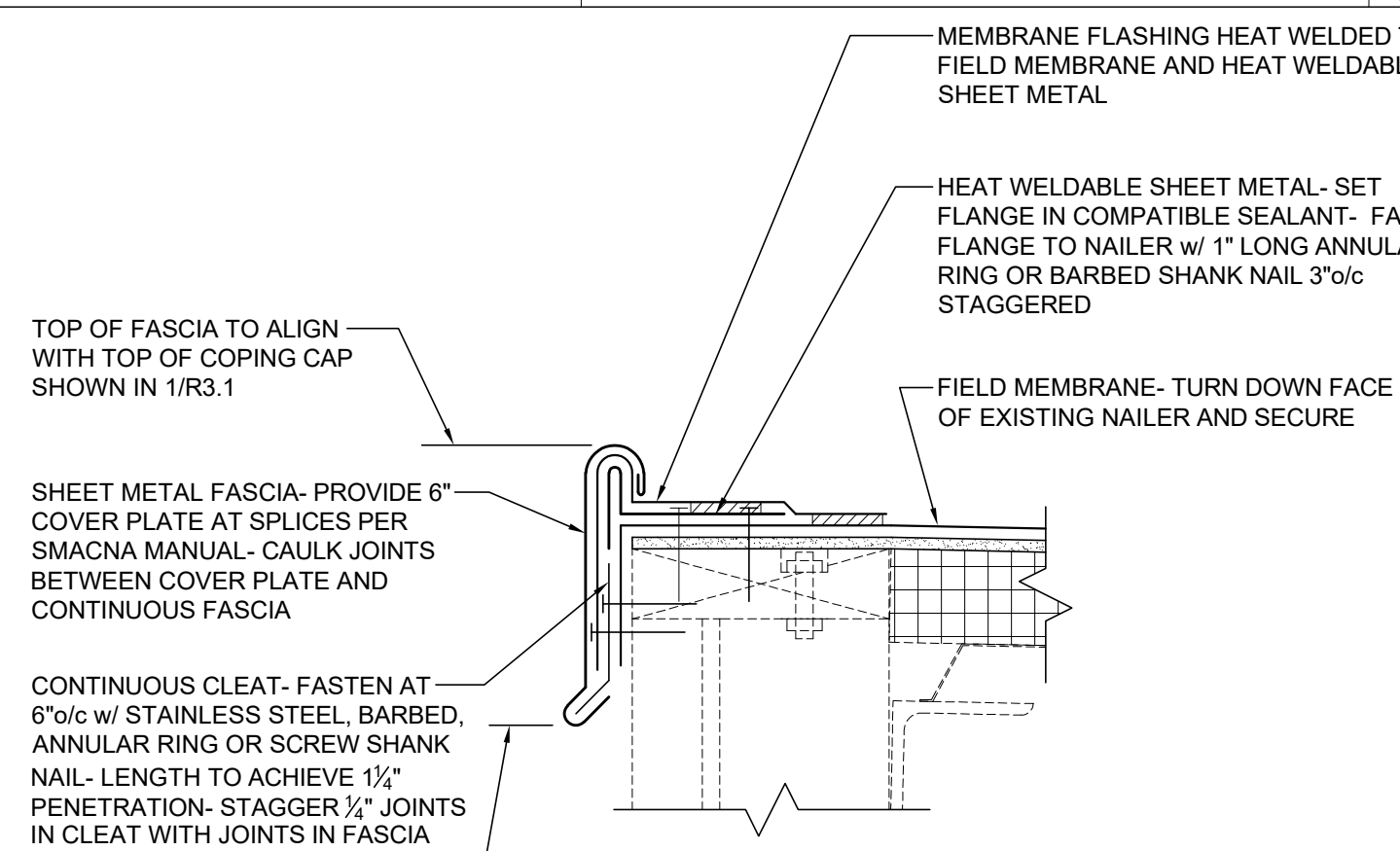
**TYPICAL DETAIL AT METAL DECK INFILL OR REPAIR** 6  
NO SCALE R3.1



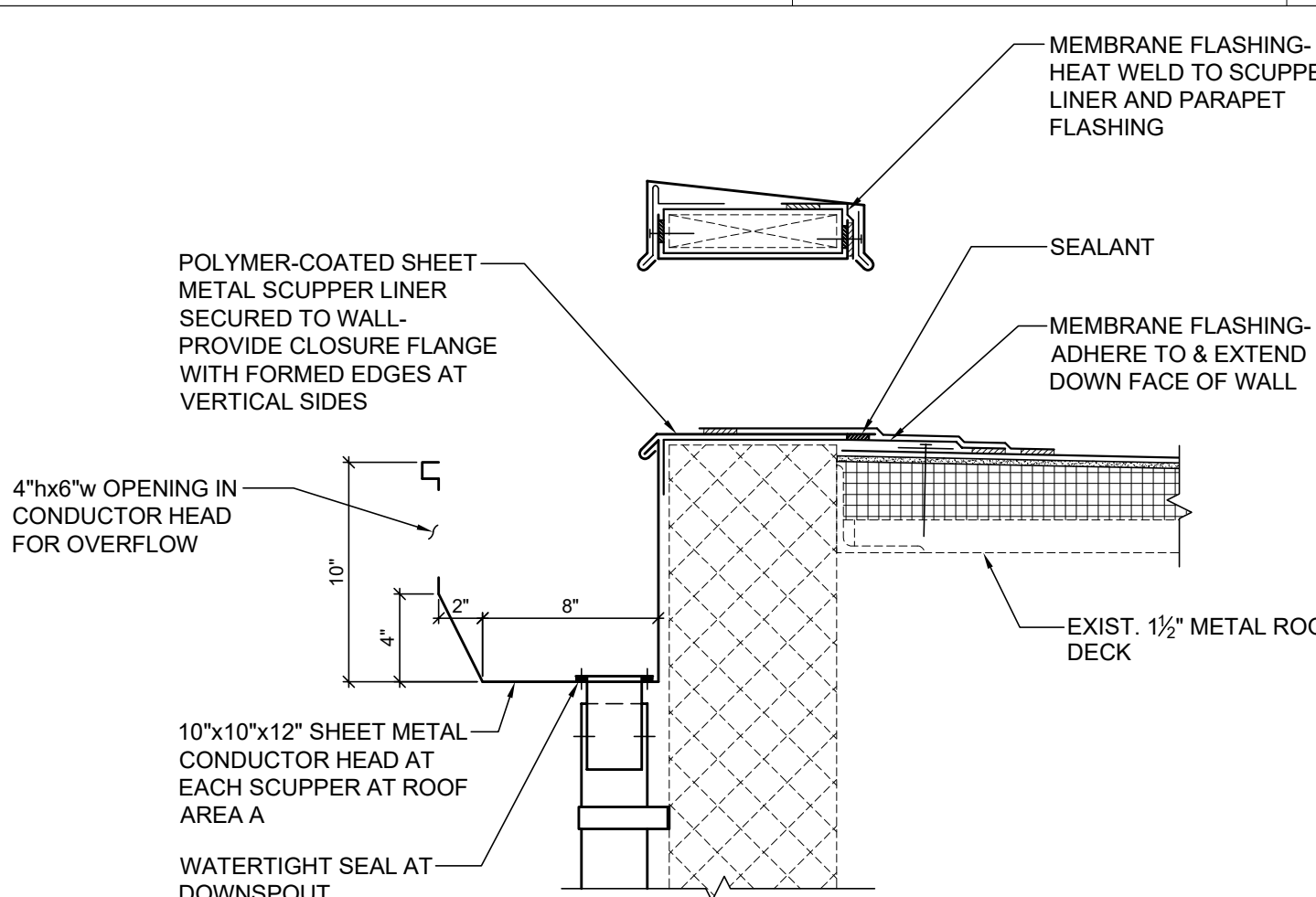
**DETAIL AT PREMANUFACTURED BOOT** 9  
1 1/2" = 1'-0" R3.1



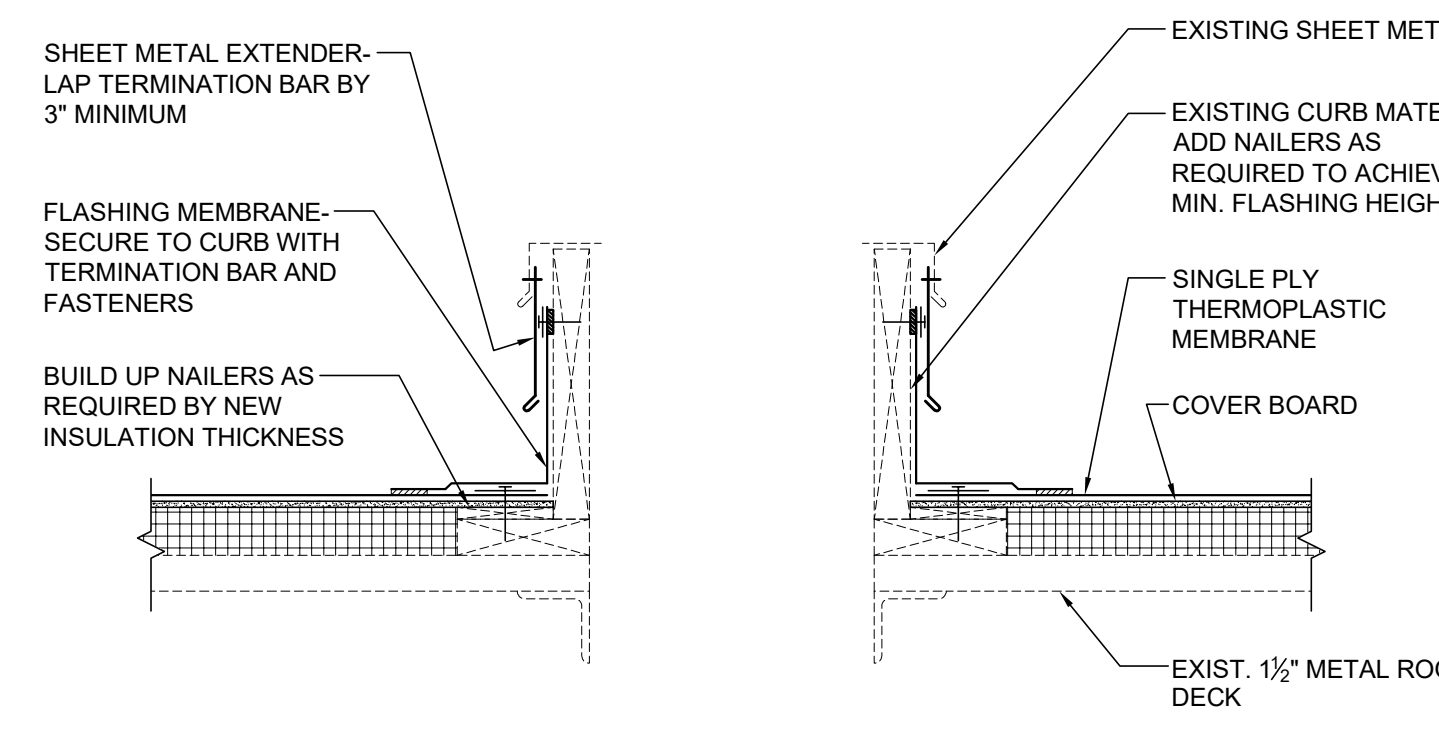
**TYPICAL DETAIL AT PARAPET** 2  
1 1/2" = 1'-0" R3.1



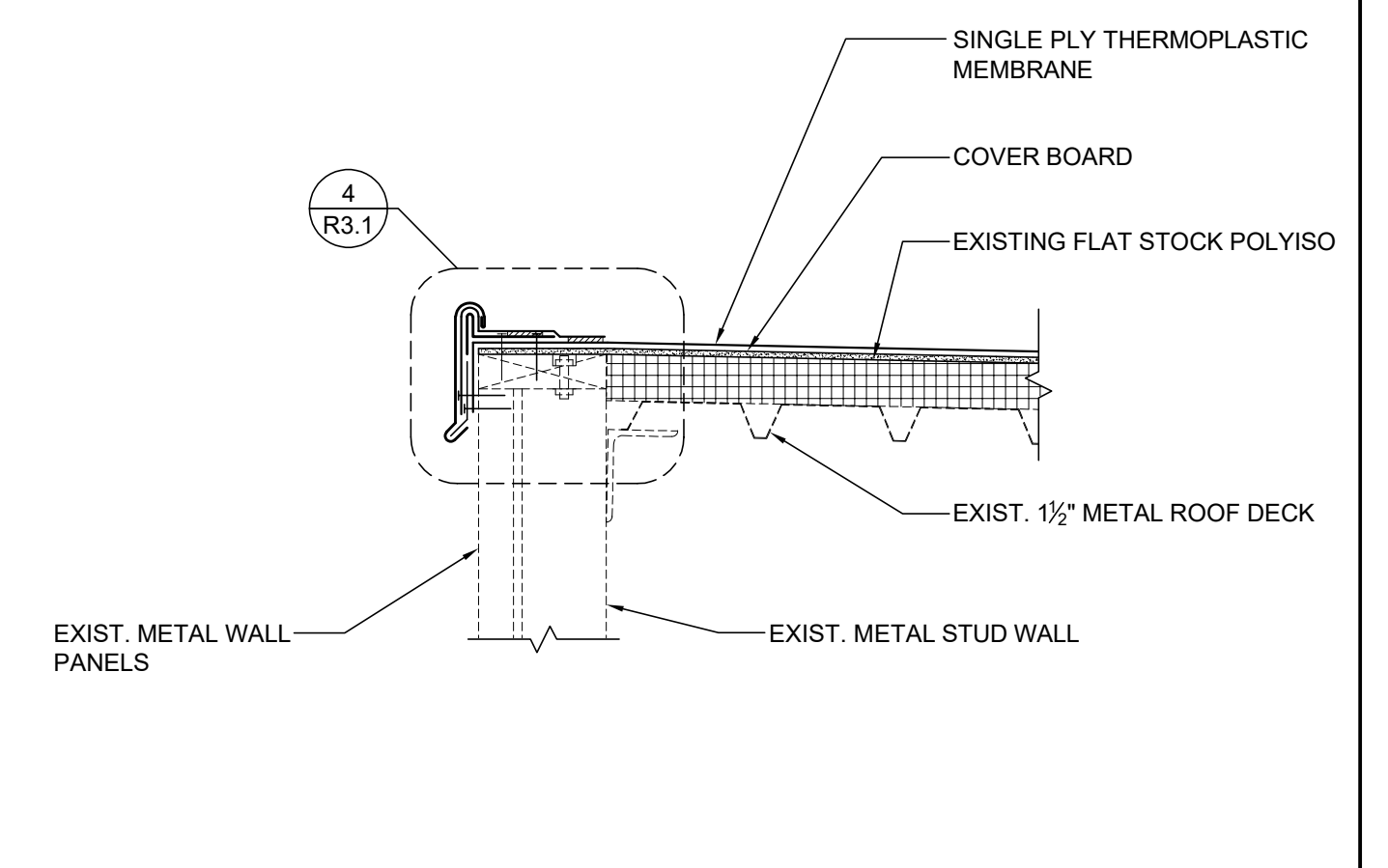
**DETAIL AT FASCIA** 4  
3" = 1'-0" R3.1



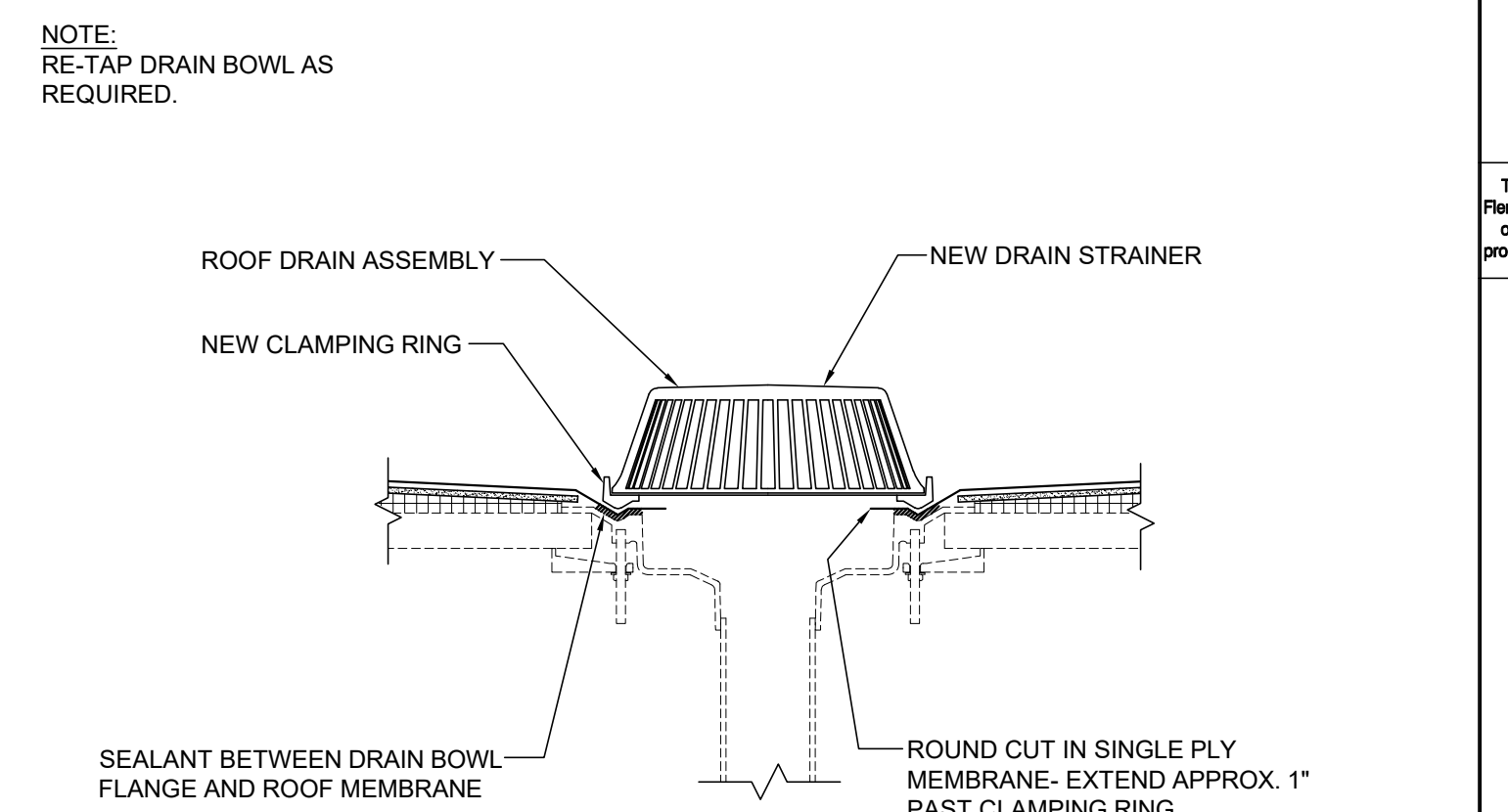
**DETAIL AT SCUPPER AND CONDUCTOR HEAD** 7  
1 1/2" = 1'-0" R3.1



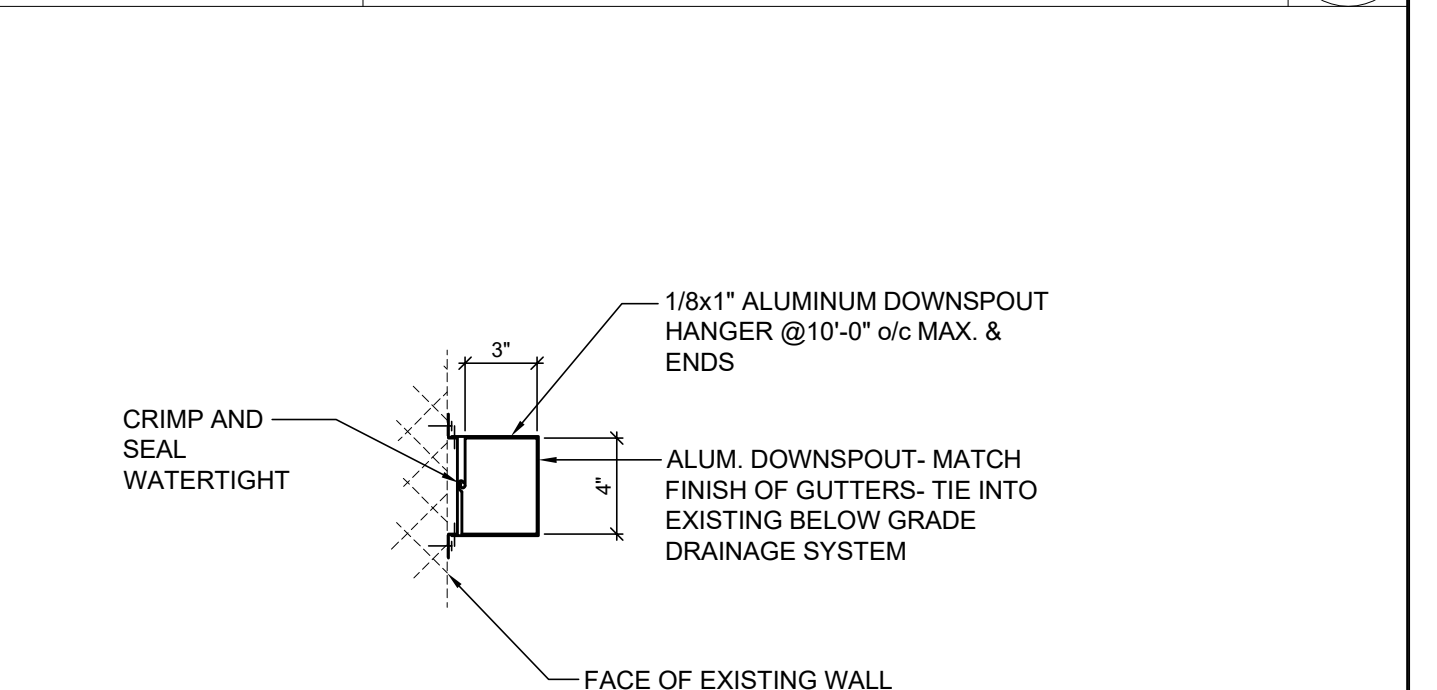
**DETAIL AT CURB** 10  
1 1/2" = 1'-0" R3.1



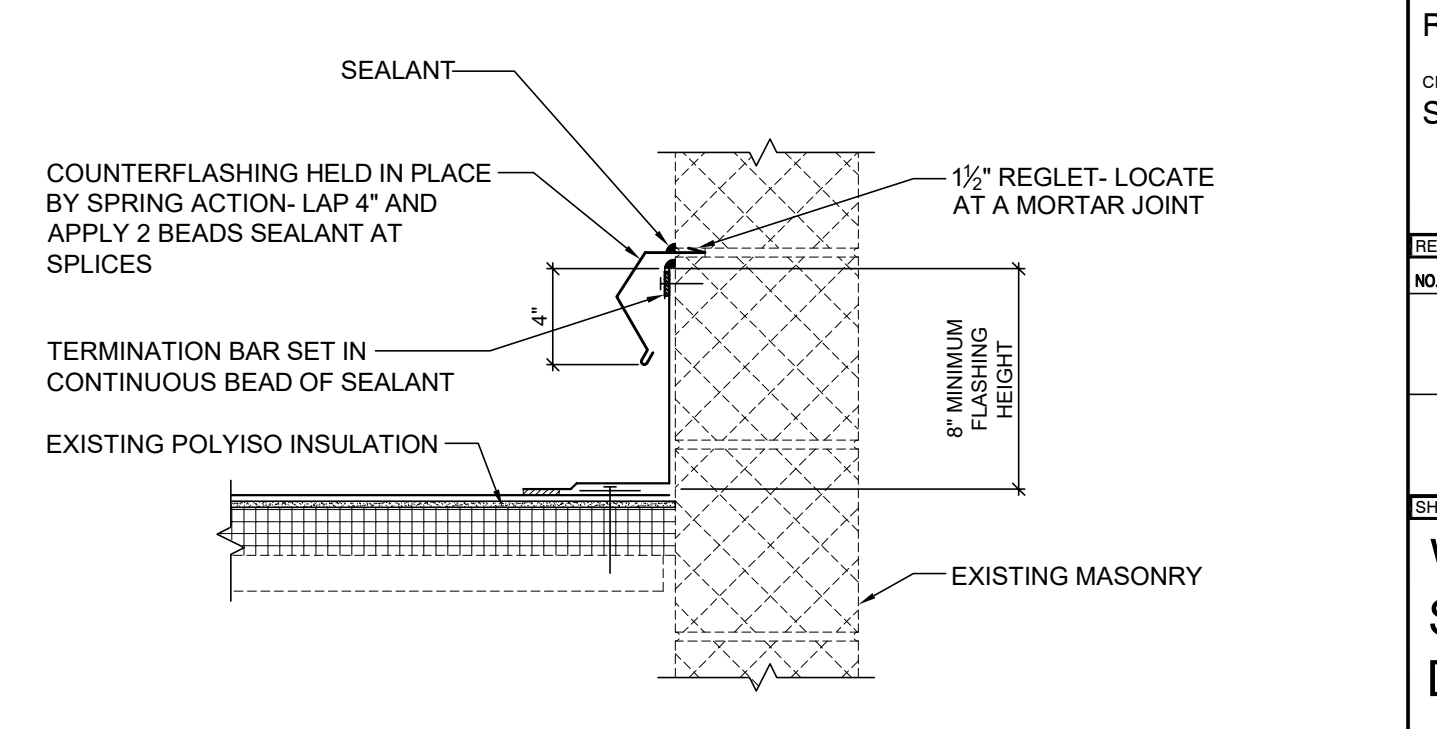
**DETAIL AT ROOF EDGE** 3  
1 1/2" = 1'-0" R3.1



**DETAIL AT INTERNAL ROOF DRAIN** 5  
1 1/2" = 1'-0" R3.1



**DETAIL AT DOWNSPOUT** 8  
1 1/2" = 1'-0" R3.1



**DETAIL AT TRANSITION** 11  
1 1/2" = 1'-0" R3.1

**FLEMING & ASSOCIATES, PA**  
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
1004 HAY STREET, FAYETTEVILLE, NC 28305  
OFFICE 910-433-2825  
FAX 910-433-2604  
www.flemingandassociates.com

**FF**  
This drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming 2022

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING,**  
**THICKENING BUILDING, WATER RESOURCES**  
**VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301

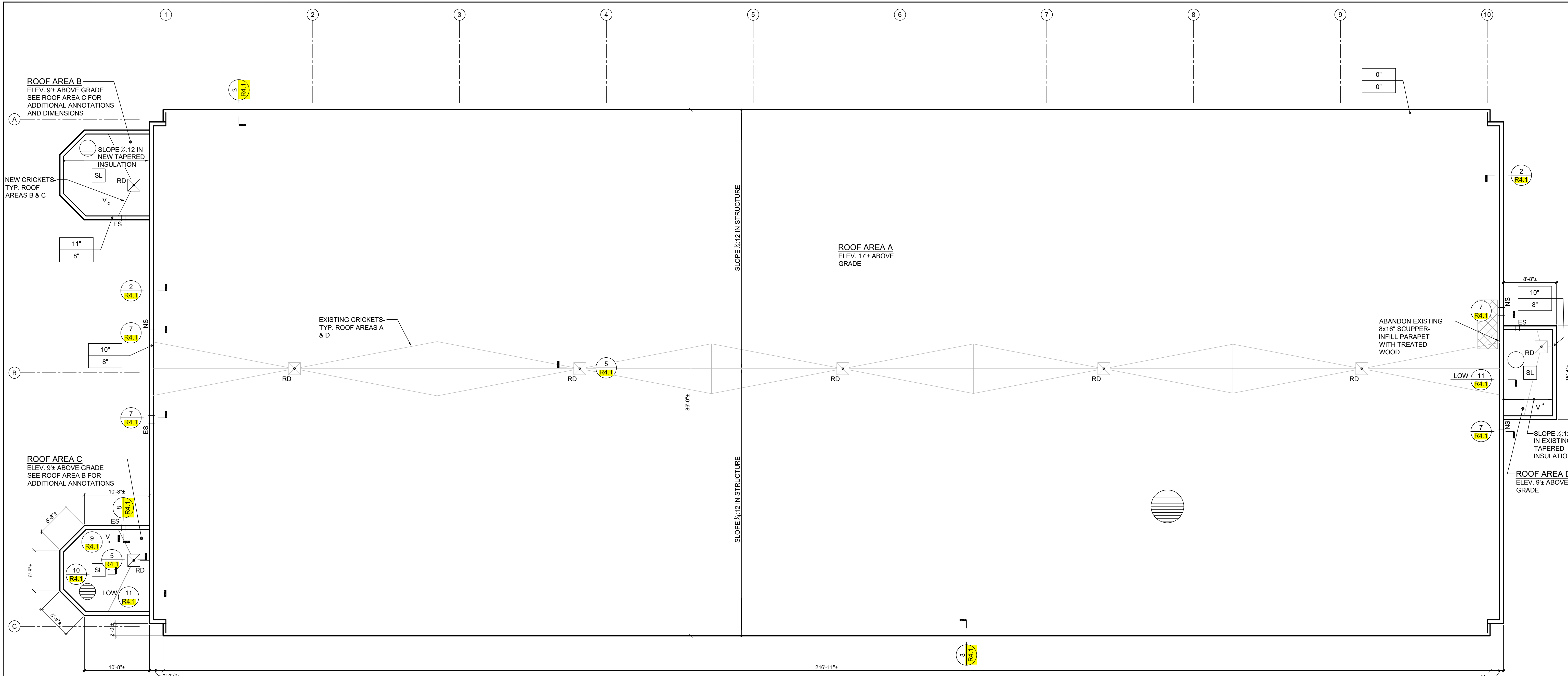
**PROFESSIONAL SEAL**  
NORTH CAROLINA  
REGISTERED PROFESSIONAL ENGINEER  
STEPHEN FLEMING  
11278  
1/25/22

**PROJECT TEAM**  
DRAWN BY: R. TUCKER, RBEC  
CHECKED BY: S. FLEMING, PE, RBEC

REVISIONS		
NO.	REASON	DATE

**SHEET TITLE**  
**WR VEHICLE SHED DETAILS**

**DATE** 1/25/2022  
**PROJECT NO.** 21-81  
**SHEET NUMBER** R3.1



**LEGEND** 2  
NO SCALE R4.0

PARAPET DATA AT LOCATION INDICATED:  
 0'-0" DISTANCE FROM TOP OF MEMBRANE TO TOP OF PARAPET  
 0" WIDTH OF PARAPET

EXIST. METAL ROOF DECK DIRECTION- NEW LINE OF MEMBRANE FASTENERS TO RUN PERPENDICULAR TO DECK DIRECTION

EXIST. VENT THRU ROOF

EXIST. SKYLIGHT TO BE REPLACED

EXIST. PRIMARY ROOF DRAIN w/ SUMP

EXIST. SCUPPER, 8x16" AT AREA A; 8x8" AT AREAS B, C, & D

NEW 16" WIDE SCUPPER CUT INTO CMU PARAPET

NEW WALKWAY PAD

TAIL AT HIGH END / HEAD AT LOW END

**TAPERED INSULATION SLOPES**

SLOPE AT FIELD OF ROOF (SHOWN ON PLAN)	MINIMUM SLOPE AT CRICKET OR SADDLE
1/4:12	1/4:12
1/8:12	3/8:12

**SCHEDULE** 3  
NO SCALE R4.0

**A. NOTES: EXISTING CONDITIONS**  
 1. EXISTING ROOF COMPOSITION AT ALL AREAS:  
 COATED SINGLE PLY THERMOPLASTIC MEMBRANE (MECHANICALLY FASTENED)  
 2" POLYISO INSULATION (MECHANICALLY FASTENED)  
 1 1/2", 20 GA. INTERMEDIATE RIB METAL ROOF DECK

**B. NOTES: DEMOLITION**  
 1. ENSURE BUILDING IS PROTECTED DURING MEMBRANE OVERLAY AT AREAS A AND D.  
 2. ENSURE BUILDING IS PROTECTED DURING TOTAL TEAR-OFF AND NEW ROOF INSTALLATION AT AREAS B AND C.

**C. NOTES: NEW WORK**  
 1. CONTRACTOR IS TO INSTALL NEW ROOF MEMBRANE, BASE FLASHINGS, SHEET METAL COUNTERFLASHING, ETC., AS SHOWN ON DRAWINGS AND INDICATED IN THE SPECIFICATIONS FOR A COMPLETE ROOF SYSTEM.  
 2. MATCH BOTH EXISTING ROOF EDGE SHEET METAL COLORS.  
 3. ALL PLUMBING VENTS, ROOF DRAINS, ETC., SHOWN ON THIS ROOF PLAN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE (SEE LEGEND).  
 4. DIMENSIONS FOR NEW SHEET METAL COMPONENTS ARE TO BE FIELD VERIFIED BEFORE FABRICATION.  
 5. FOLLOW RECOMMENDATIONS OF MEMBRANE MANUFACTURER, SPRI, NRCA, SMACNA, AND INDUSTRY STANDARDS UNLESS SHOWN OTHERWISE.  
 6. CONTRACTOR SHALL HAVE FASTENER MANUFACTURER CONDUCT PULL TESTS TO DETERMINE STRENGTH OF FASTENERS CONNECTING MEMBRANE TO METAL DECK. SUBMIT FASTENER SAMPLE AND RESULTS OF PULL TESTS TO ENGINEER FOR REVIEW BEFORE INSTALLATION.  
 7. ALL ROOF EDGING FLASHING SHALL COMPLY WITH SECTION 1504.5 OF THE NORTH CAROLINA BUILDING CODE AND BE TESTED FOR RESISTANCE IN ACCORDANCE WITH ANSIS/SPRI ES-1.  
 8. ALL NEW NAILERS AND ANCHORS SHOWN IN THE DETAILS ARE TO BE INCLUDED IN THE BASE BID. REPLACEMENT OF DAMAGED OR MISSING WOOD NAILERS OR ANCHOR BOLTS ABOVE BASE BID QUANTITIES SHALL BE HANDLED ON A UNIT PRICE BASIS.

**GENERAL NOTES** 4  
NO SCALE R4.0

**NEW ROOF ASSEMBLY AT ELECTRIC VEHICLE SHED AREA A** 5  
3" = 1'-0" R3.0

**NEW ROOF ASSEMBLY AT ELECTRIC VEHICLE SHED AREAS B & C** 6  
3" = 1'-0" R3.0

**NEW ROOF ASSEMBLY AT ELECTRIC VEHICLE SHED AREA D** 7  
3" = 1'-0" R3.0

**ELECTRIC VEHICLE SHED ROOF PLAN** 1  
1/8" = 1'-0" R4.0

**FLEMING & ASSOCIATES, P.A.**  
 STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN

1004 HAY STREET, FAYETTEVILLE, NC 28305  
 OFFICE 910-433-2825  
 FAX 910-433-2604  
 www.flemingandassociates.com

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING, THICKENING BUILDING, WATER RESOURCES VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
 TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
 VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301

**ELECTRIC VEHICLE SHED ROOF PLAN, NOTES, AND LEGEND**

DATE: 1/25/2022  
 PROJECT: R4.0  
 SHEET NUMBER: 21-81

**PROJECT TEAM**  
 DRAWN BY: R. TUCKER, RBEC  
 CHECKED BY: S. FLEMING, PE, RBEC

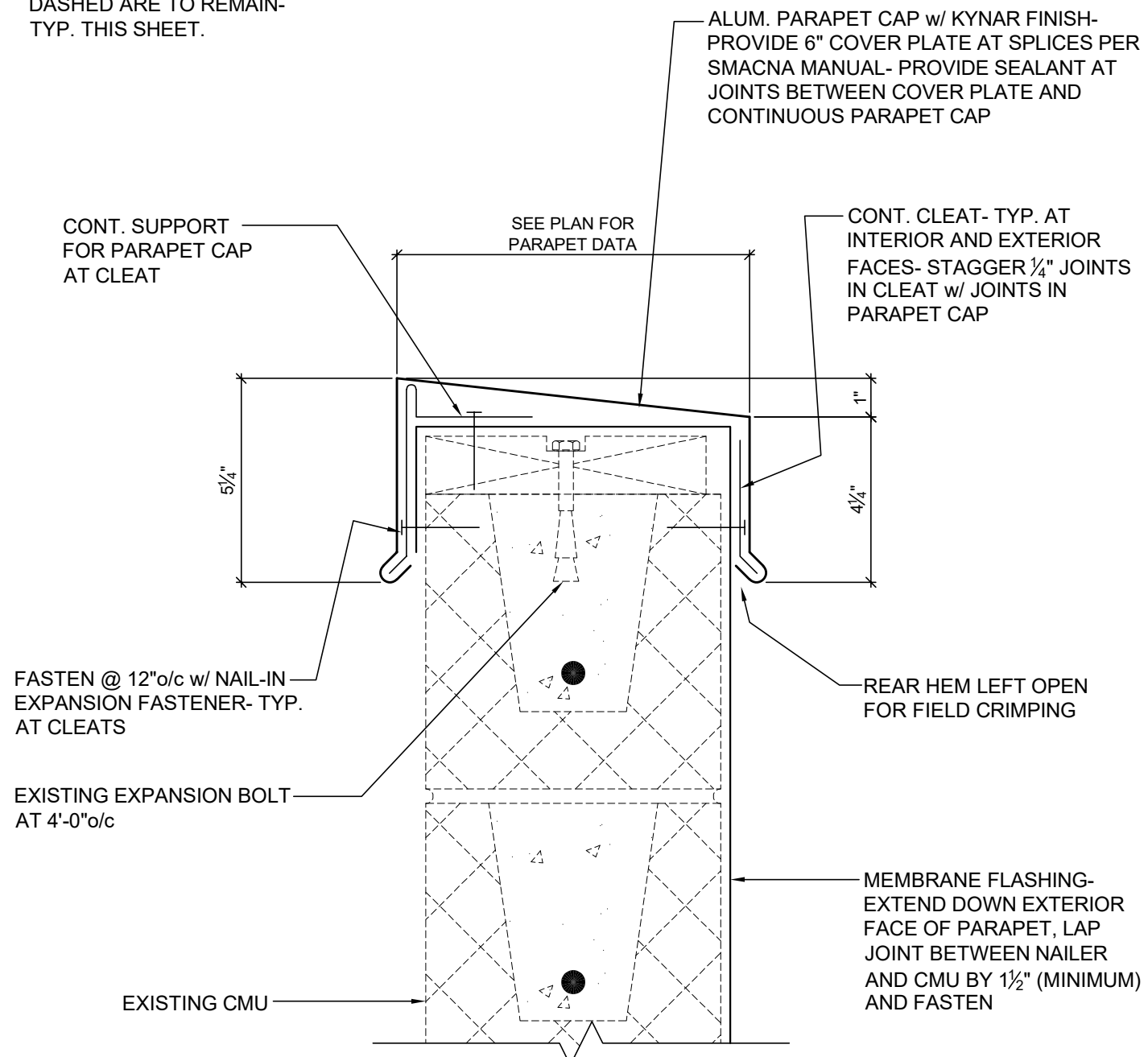
**REVISIONS**

NO.	REASON	DATE

**PROFESSIONAL SEAL**  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 11278  
 STEPHEN FLEMING

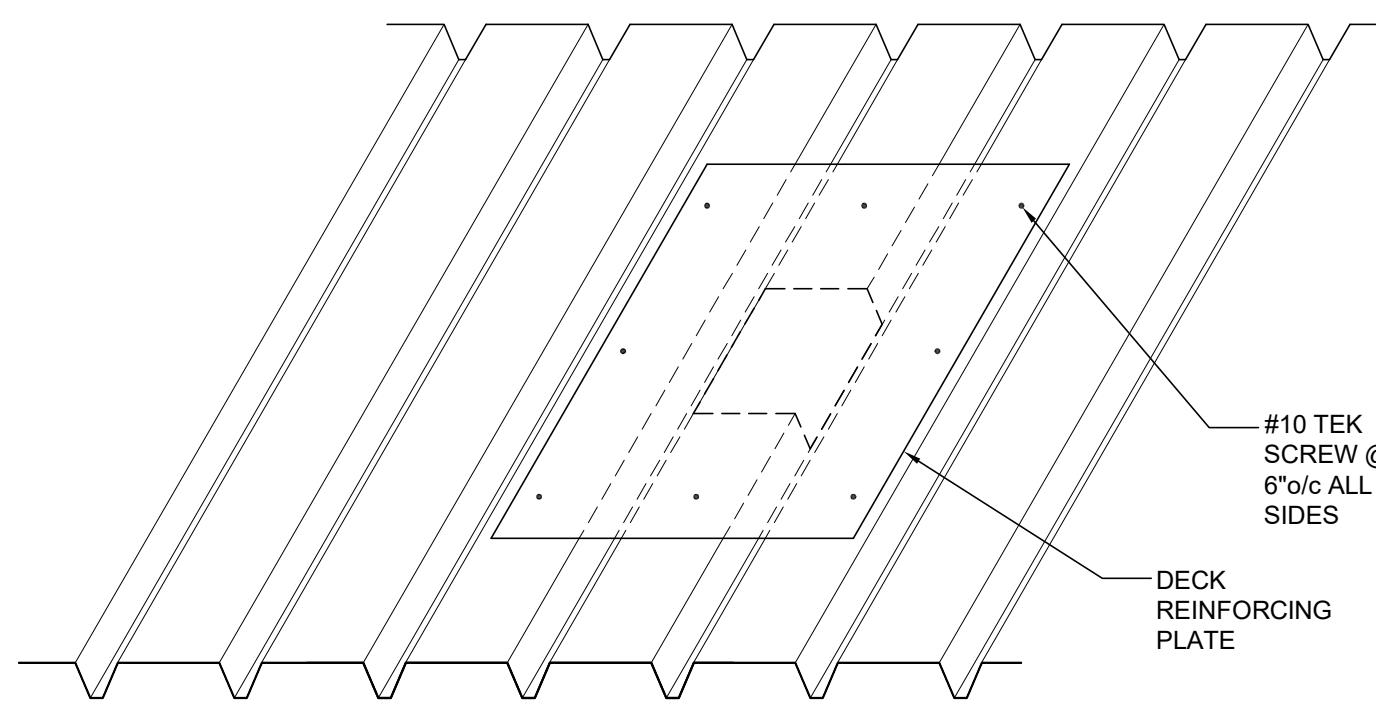


NOTE:  
EXISTING ITEMS SHOWN  
DASHED ARE TO REMAIN-  
TYP. THIS SHEET.

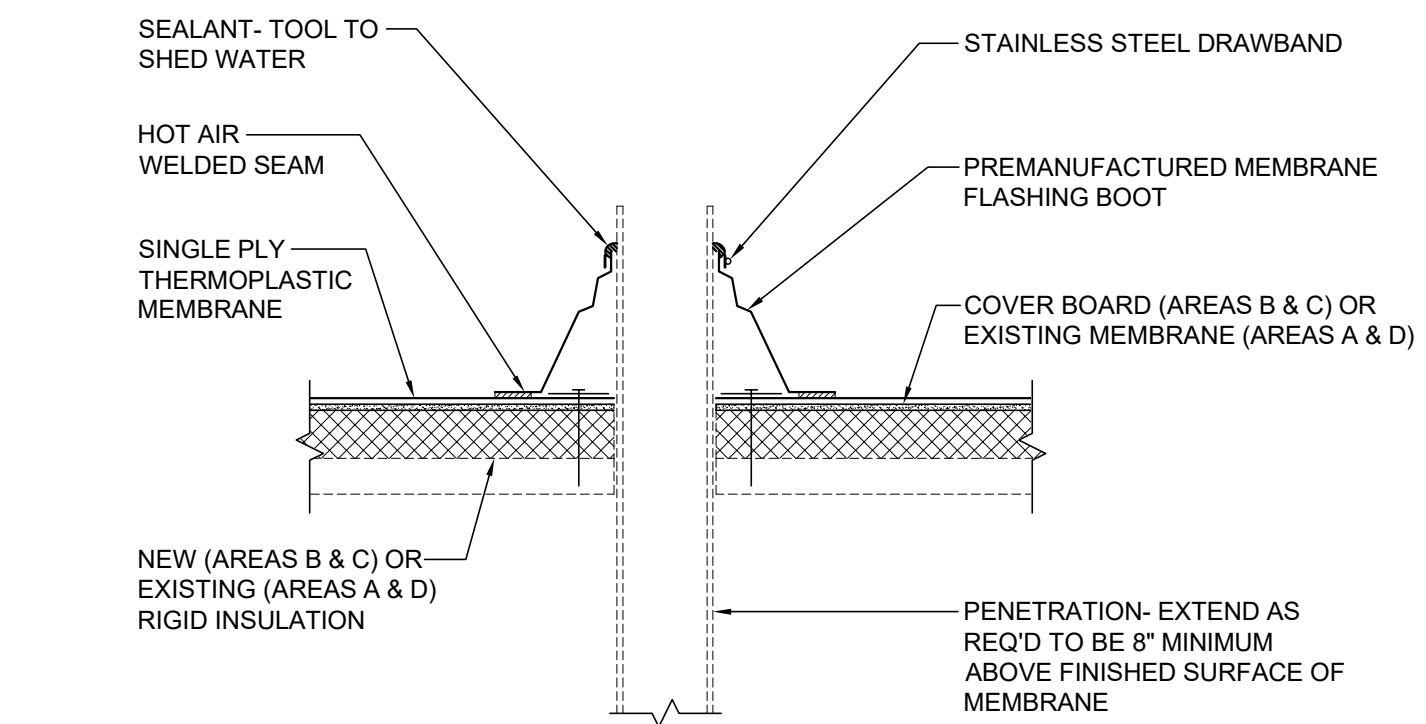


**DETAIL AT PARAPET CAP**  
3" = 1'-0" R4.1

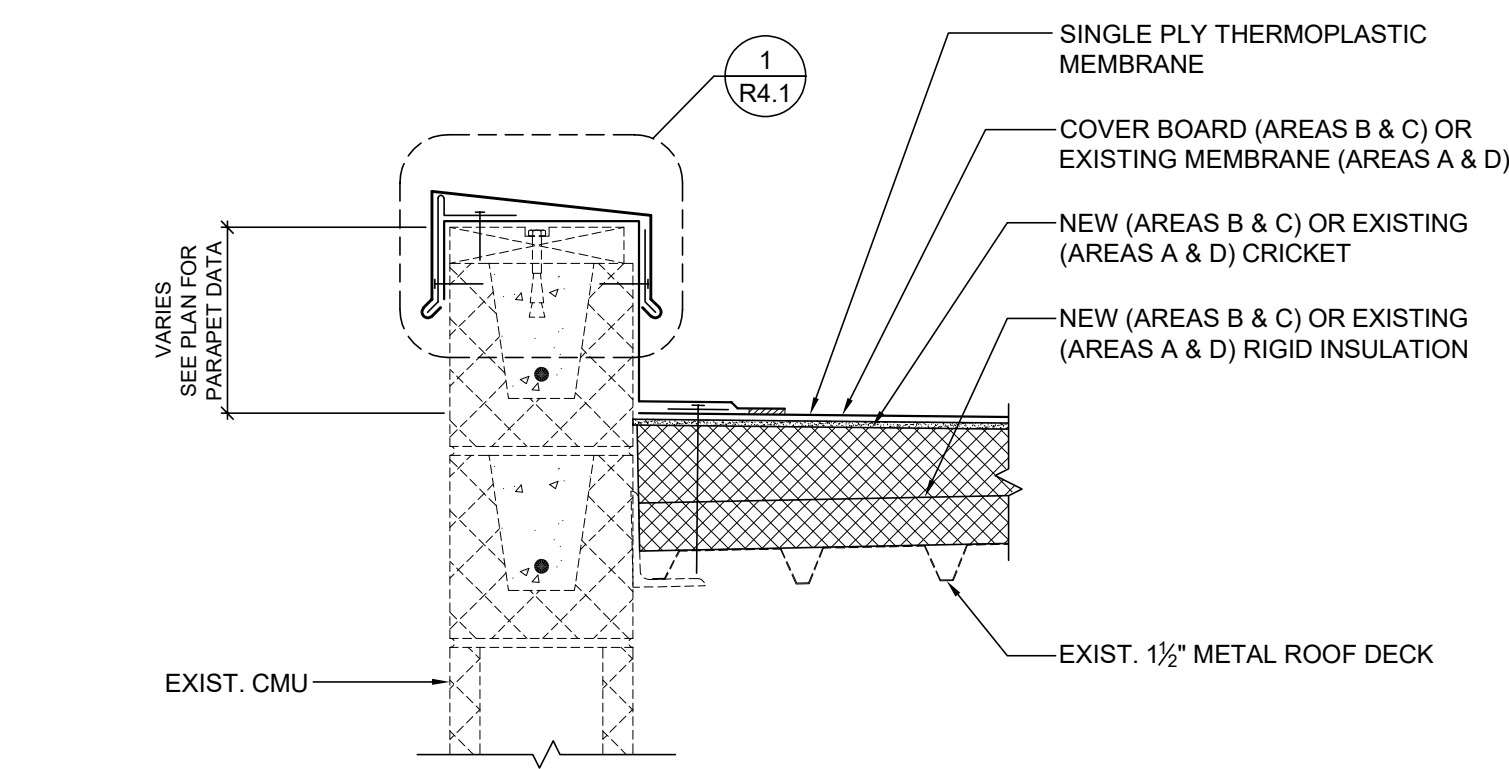
METAL DECK REINFORCING SCHEDULE		
UNIT PRICE DESCRIPTION	OPENING SIZE	INFILL MATERIAL (MINIMUM)
METAL DECK REPAIR	LESS THAN 13" DIAMETER	16 GA. GALVANIZED STEEL PLATE- FASTEN AS SHOWN IN DRAWING
METAL DECK REPLACEMENT	GREATER THAN 13" DIAMETER	1 1/2" GALVANIZED NARROW RIB METAL ROOF DECK- 22 GA. MIN.- FASTEN ENDS AT 6" TO SUPPORTING STRUCTURE WITH #12 TEK SCREWS- INFILLED DECK TO EXTEND FROM SUPPORT TO SUPPORT



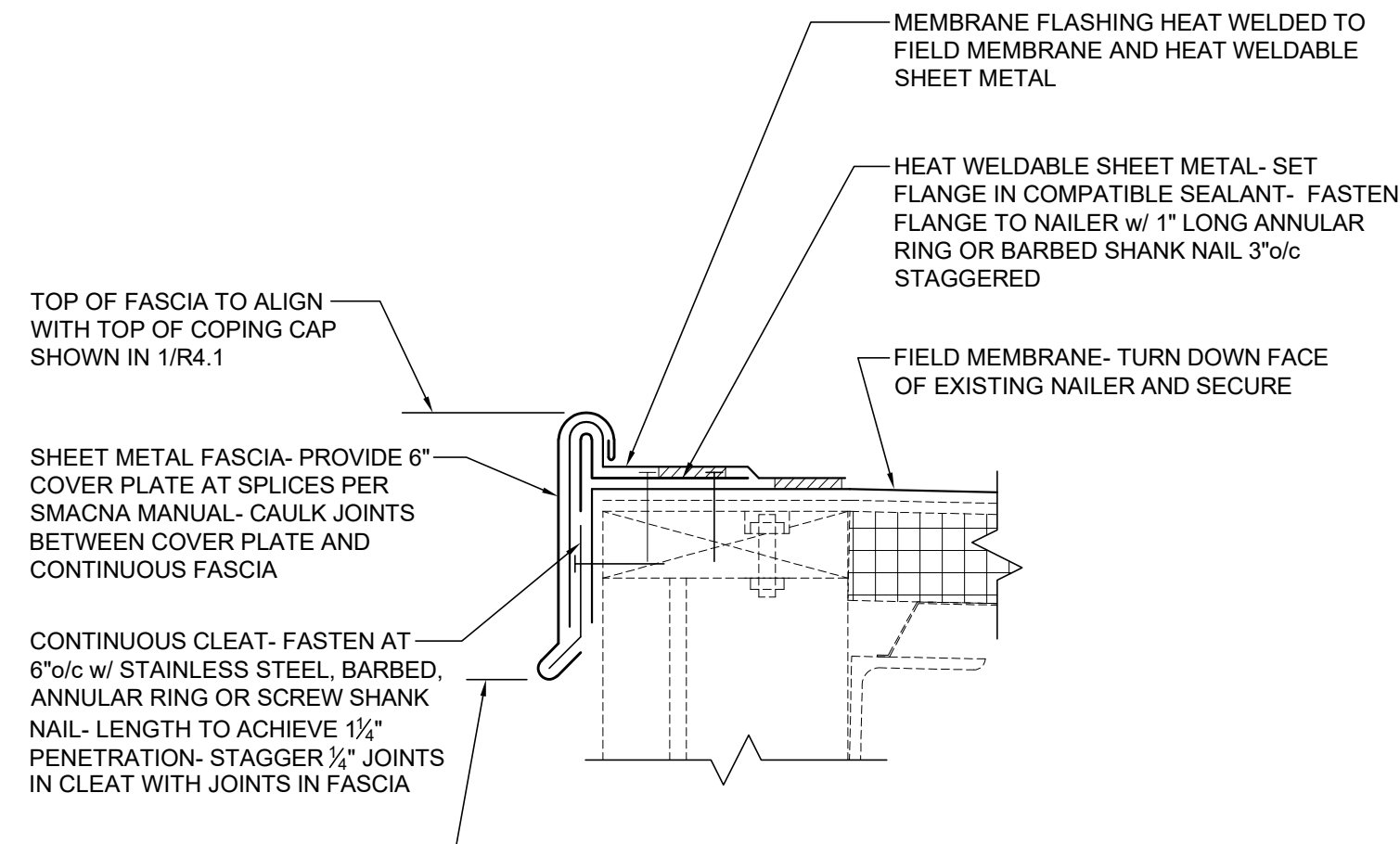
**TYPICAL DETAIL AT METAL DECK INFILL OR REPAIR**  
NO SCALE R4.1



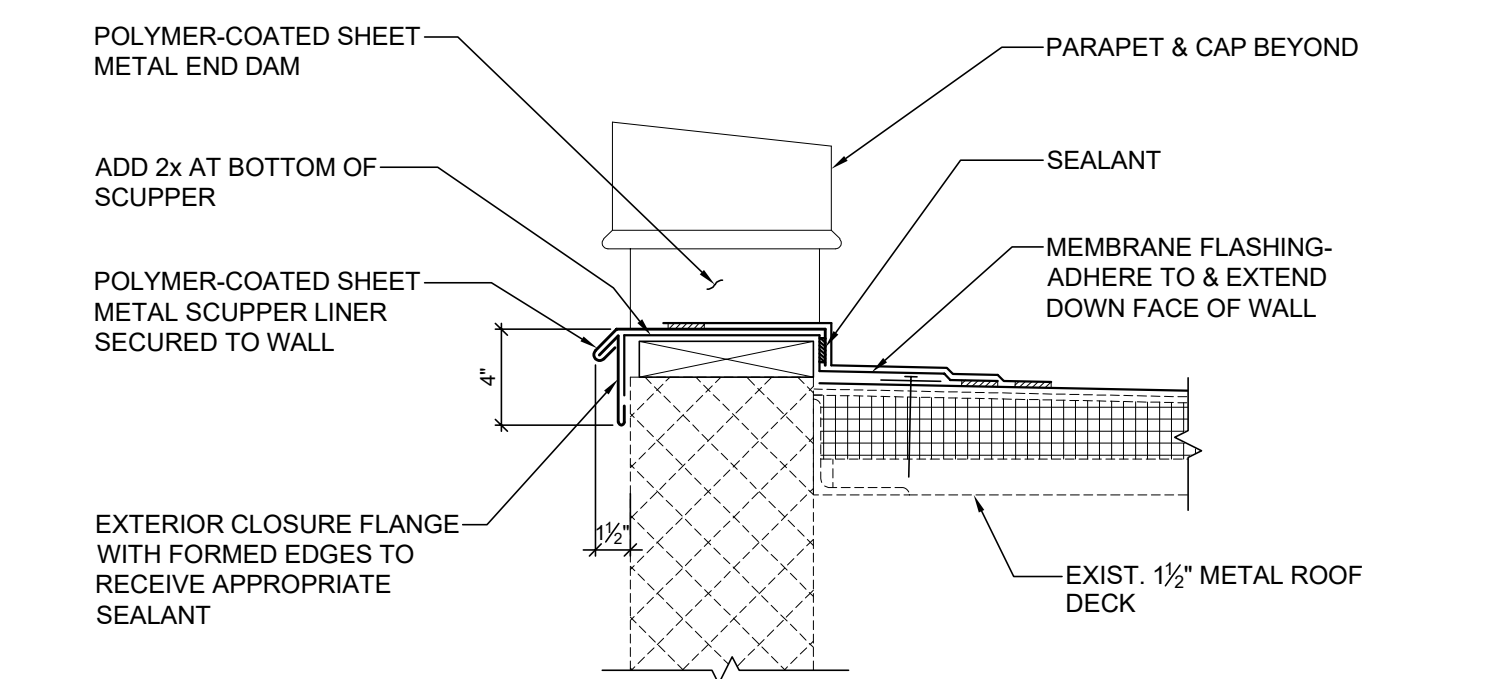
**DETAIL AT PREMANUFACTURED BOOT**  
1 1/2" = 1'-0" R4.1



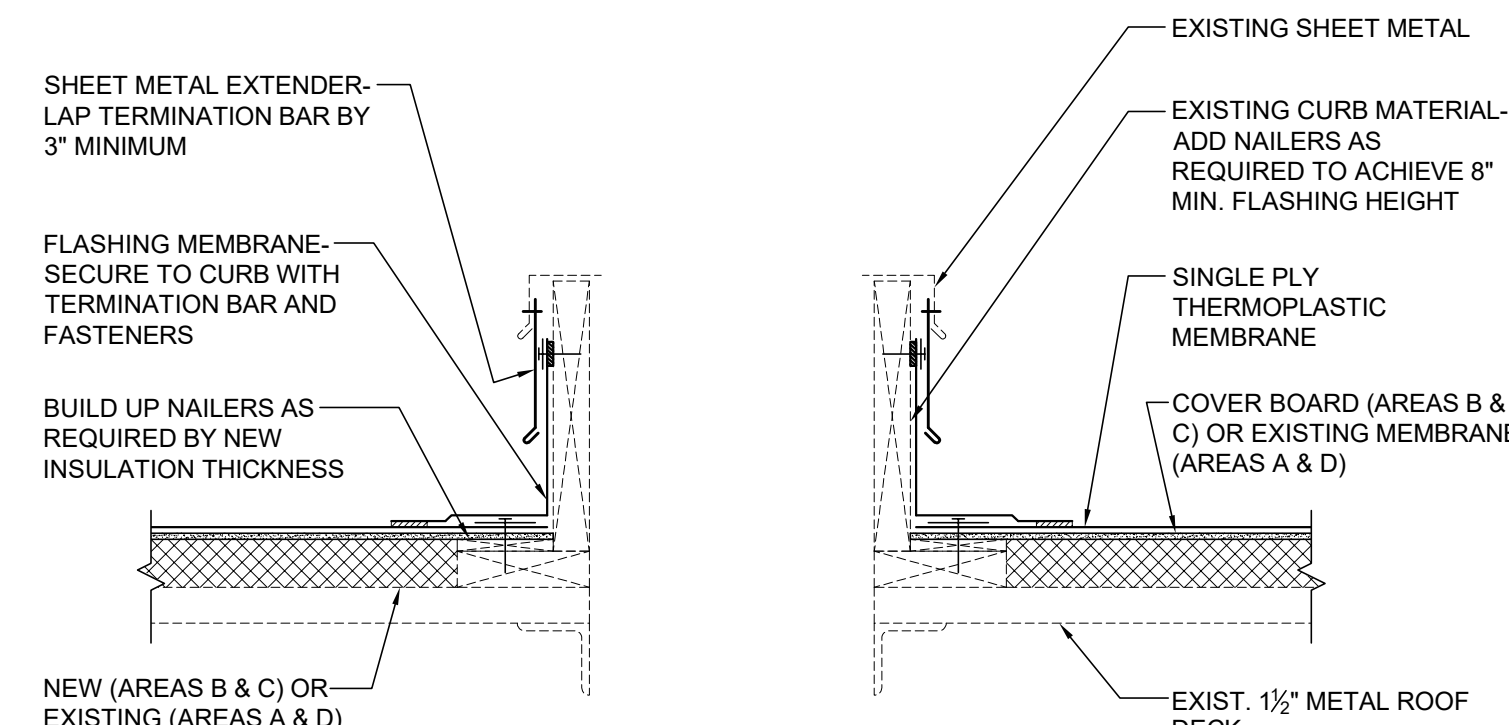
**TYPICAL DETAIL AT PARAPET**  
1 1/2" = 1'-0" R4.1



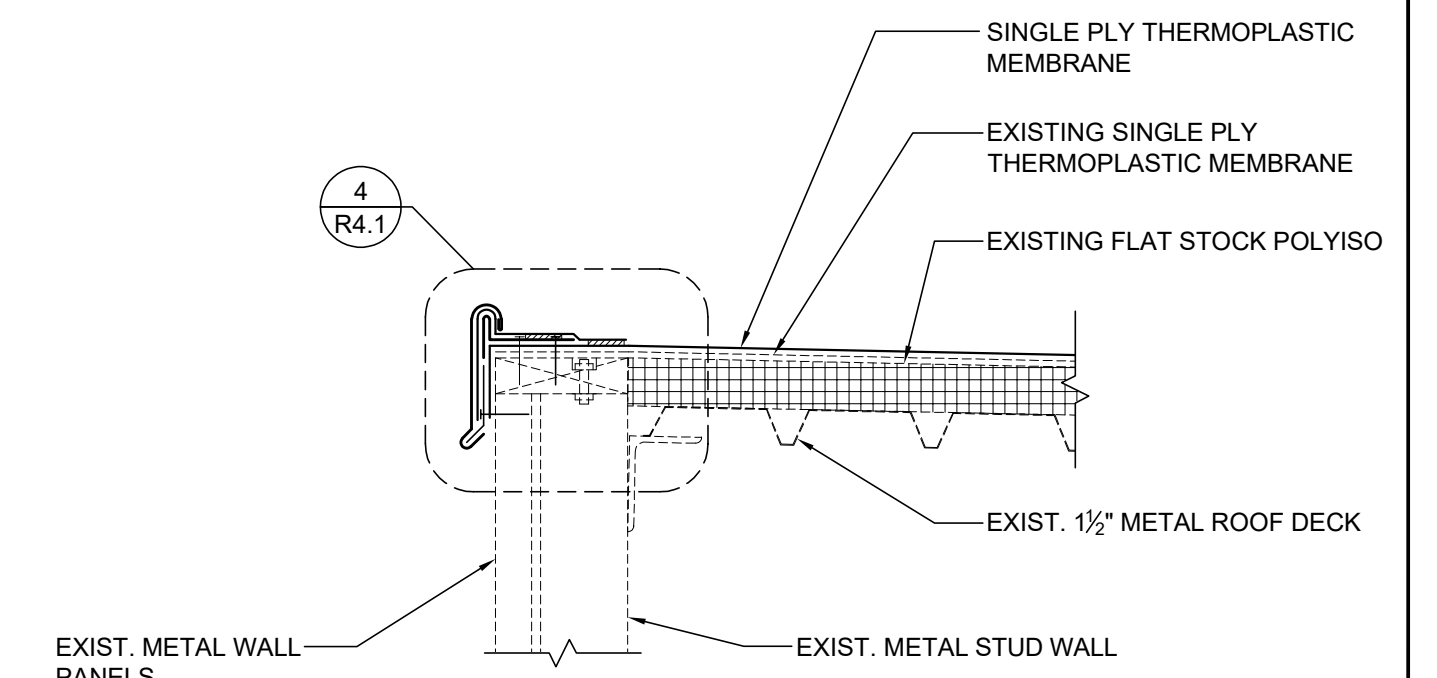
**DETAIL AT FASCIA**  
3" = 1'-0" R4.1



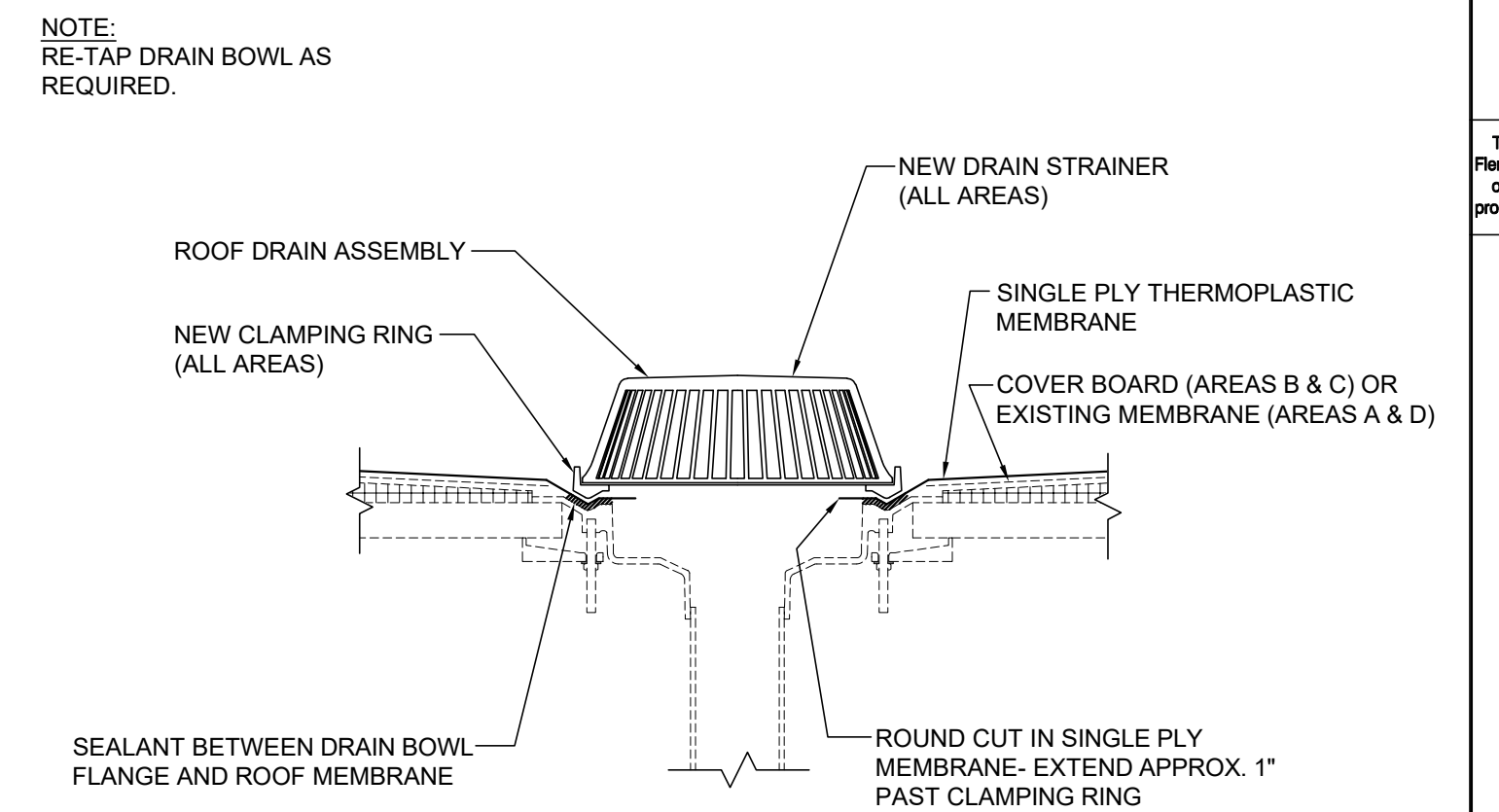
**DETAIL AT SCUPPER AT AREA A**  
1 1/2" = 1'-0" R4.1



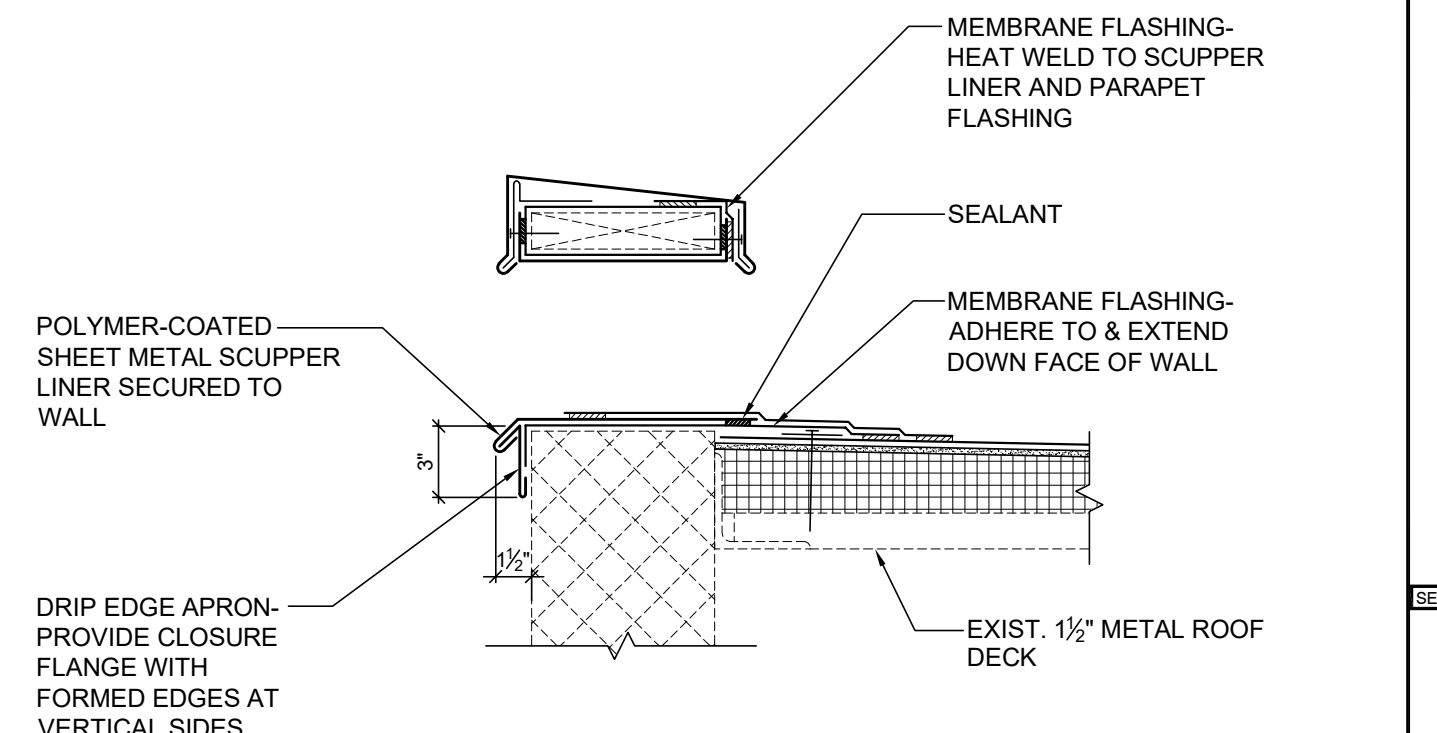
**DETAIL AT CURB**  
1 1/2" = 1'-0" R4.1



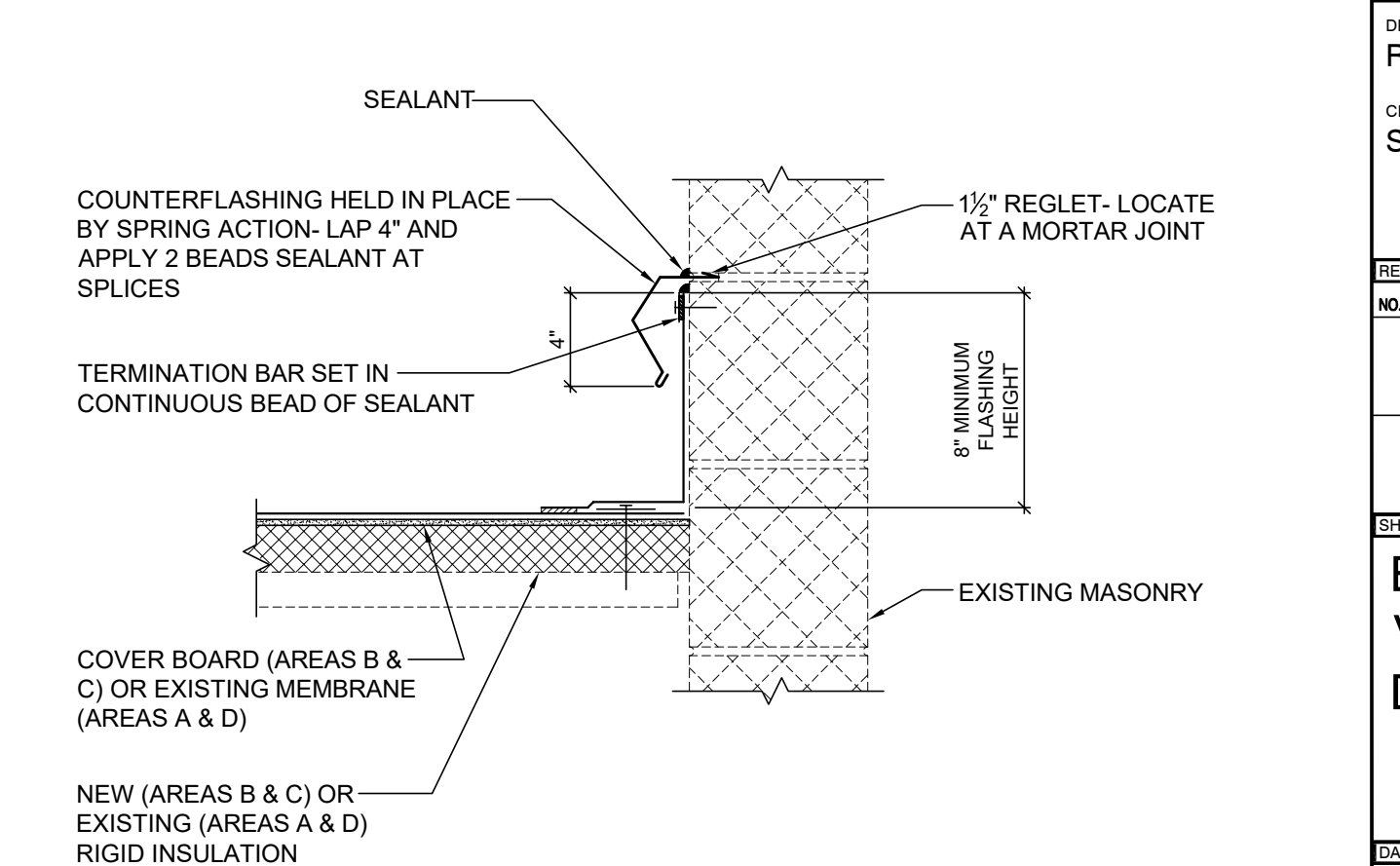
**DETAIL AT ROOF EDGE**  
1 1/2" = 1'-0" R4.1



**DETAIL AT INTERNAL ROOF DRAIN**  
1 1/2" = 1'-0" R4.1



**DETAIL AT SCUPPER AT AREAS B, C & D**  
1 1/2" = 1'-0" R4.1



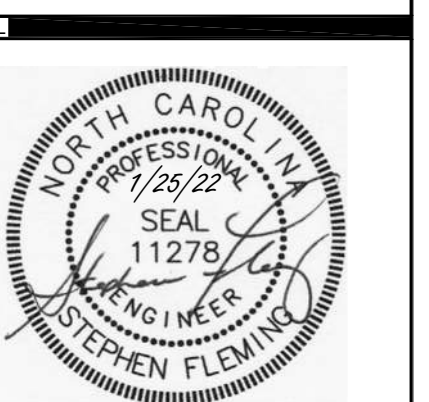
**DETAIL AT TRANSITION**  
1 1/2" = 1'-0" R4.1

**FLEMING & ASSOCIATES, PA**  
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN  
1004 HAY STREET, FAYETTEVILLE, NC 28305  
OFFICE 910-433-2825  
FAX 910-433-2604  
www.flemingandassociates.com



This drawing and the design shown are the property of Fleming and Associates, P.A. The reproduction, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.  
© Fleming 2022

**FAYETTEVILLE PUBLIC WORKS COMMISSION**  
**RE-ROOFING AT TRANSFER BUILDING,**  
**THICKENING BUILDING, WATER RESOURCES**  
**VEHICLE SHED, AND ELECTRIC VEHICLE SHED**  
TRANSFER & THICKENING BLDGS: 601 N. EASTERN BLVD., FAYETTEVILLE, NC 28301  
VEHICLE SHEDS: 955 OLD WILMINGTON RD., FAYETTEVILLE, NC 28301



PROJECT TEAM  
DRAWN BY: R. TUCKER, RBEC  
CHECKED BY: S. FLEMING, PE, RBEC

NO.	REASON	DATE

**ELECTRIC VEHICLE SHED DETAILS**

DATE: 1/25/2022  
PROJECT NO: 21-81  
**R4.1**