



DATE: August 3, 2018
FROM: REI Engineers
TO: Bidders of Record
REFERENCE: **Addendum No. 01**
Henderson County, North Carolina
Main Library Roof Replacement
REI Project No. 018CLT-069

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated July 13, 2018 as noted below.

This addendum consists of 1 page, Pre-bid Meeting Minutes, the attached revised Specification Sections 00 01 15 List of Drawings; 00 41 13 Bid Form; 07 54 00 Thermoplastic Single Ply Roofing and the attached revised Drawings XR-101 and XR-202.

CHANGES TO BIDDING REQUIREMENTS:

1. None

CHANGES TO SPECIFICATIONS:

2. 00 01 15 List of Drawings has been updated to match the drawing names.
3. 00 41 13 Bid Form has updated substantial completion date.
4. 07 54 00 Thermoplastic Single Ply Roofing now indicates PVC Fleece Back Membrane.

CHANGES TO CONTRACT DRAWINGS:

5. Revised sheet XR-101; Detail numbers 21 and 22 have been moved to their correct locations.
6. Revised sheet XR-202; Detail 8A has been revised to indicate replacement of the skylight domes on Area E with matching domes to be included in the base bid.

QUESTIONS/CLARIFICATIONS

7. Q. Can the Manufacturer's foam adhesive be used as membrane adhesive?
 - A. Yes; however, REI will require manufacturer's system data and a full adhesion, spatter pattern, or ribbon applied pattern with a density sufficient to prevent telegraphing of ribbon stripes to the roof surface.

ALL OTHER REQUIREMENTS AND PROVISIONS OF THE BIDDING DOCUMENTS REMAIN UNCHANGED. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM ON THE BID FORM. FAILURE TO DO SO MAY BE CAUSE FOR REJECTION OF THE BID.

END OF ADDENDUM

SECTION 00 01 15

LIST OF DRAWINGS

PART 1 GENERAL

The following drawings and details are included as part of the Contract Documents:

Drawing	Description	Date
XR101	Roof Plan/Roof Systems/Attachment Patterns	07/13/2018
XR201	Details	07/13/2018
XR202	Details	07/13/2018
XR203	Details	07/13/2018
XR204	Details	07/13/2018
XR205	Details	07/13/2018

END OF SECTION 00 01 15

SECTION 00 41 13

BID FORM (Addendum 01)

To: Mr. Thad Ninnemann
Project Manager
Henderson County Project Management
100 North King Street, Suite 206
Hendersonville, North Carolina 28792

Project: Henderson County
Main Library Roof Replacement
301 N Washington St, Hendersonville, NC 28739
REI Project No. 018CLT-069

Date: _____

Contractor: _____

Address: _____ Phone: (____) _____

_____ Fax: (____) _____

Email: _____

NC License No.: _____ Classification: _____ Limitation: _____

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto dated July 13, 2018 as prepared by REI Engineers, Inc., and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The Bidder proposes and agrees if this proposal is accepted to contract with the Owner in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools apparatus, means of transportation and labor necessary to complete the construction of the project with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the Contract Documents, for the sum of:

BASE BID: _____ (\$ _____ .____)
(Words) (Figures)

ALTERNATES:

Alternate No. 1: Replace skylight assemblies on Roof Area F as specified in Specification Section 08 45 23.

Add: Words: _____ Figures _____

ALLOWANCES:

Include in the Base Bid the \$30,000.00 Contingency Allowance specified in Section 01 21 00 of the Project Manual.

Include in the Base Bid the Quantity Allowances specified in Section 01 21 00 of the Project Manual.

Repair 1,000 sq. ft. of Steel Deck with Coating \$ _____

Repair 500 sq. ft. of Steel Deck with Steel Plates.....	\$ _____
Replace 500 bd. ft. of Damaged or Deteriorated Wood Blocking	\$ _____
Replace 250 sq. ft. of Damaged or Deteriorated Plywood.....	\$ _____

UNIT PRICES:

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the scope of the work all in accordance with the contract documents.

UP-1: Repair Steel Deck with Coating.....	\$ _____/SF
UP-2: Repair Steel Deck with Steel Plates.....	\$ _____/SF
UP-3: Replace Damaged or Deteriorated Wood Blocking.....	\$ _____/BF
UP-4: Replace Damaged or Deteriorated Plywood.....	\$ _____/SF

MANUFACTURERS:

Base bid shall utilize PVC membrane roofing materials manufactured by _____.
(One manufacturer only)

Base bid shall utilize Metal roofing materials manufactured by _____.
(One manufacturer only)

BID HOLDING TIME AND ACCEPTANCE:

The undersigned hereby agrees that this bid may not be revoked or withdrawn after the time set for the opening of bids but shall remain open during the bid holding period.

SCHEDULE OF COMPLETION:

The undersigned understands that time is of the essence and agrees to the Contract Time and liquidated damages as indicated in AIA Document A201, General Conditions of the Contract for Construction and Supplementary Conditions apply to this Work. The undersigned hereby agrees to commence work on this project within thirty (30) days following receipt of an Executed Owner/Contractor Agreement. Date of commencement will be established in a Notice to Proceed issued to Contractor. *All work to be accomplished under the Base Bid and all alternates accepted shall be completed by **January 29, 2018**.* Applicable liquidated damages shall be stated in the Section 00 73 00-Supplementary Conditions.

ADDENDUM:

Addendum received and used in computing bid:

Addendum No. 1 _____	Addendum No. 2 _____
Addendum No. 3 _____	Addendum No. 4 _____

SUBCONTRACTORS:

If subcontractors are to be utilized, the General Contractor shall fill out all blanks on the list below. All subcontractors shall be listed. The general contractor shall identify work by the general, subcontractor or not applicable. Do not list suppliers. All blanks must be filled in. Failure to do so may result in bid being declared non-responsive. If there is more than one subcontractor per trade identified below, list all. If no subcontractors are to be utilized, indicate by signing at the appropriate place at the bottom of this page.

Trade: _____	Company: _____
Trade: _____	Company: _____
Trade: _____	Company: _____
Trade: _____	Company: _____
Trade: _____	Company: _____
Trade: _____	Company: _____

We do not plan to use subcontract forces:

Contractor Signature (sign if applicable)

ENCLOSURES:

- Bid Bond
- Minority, Woman, and Small Business Submittals:
 - Identification to Minority Business Participation and
 - Affidavit A or Affidavit B
- Roof Manufacturer's Acknowledgement Form (Section 00 62 33)

Respectfully submitted this _____ day of _____, _____.

Company: _____

Printed Name: _____

Signature: _____

Title: _____

_____ Carolina

_____ County

I, _____, a Notary Public for _____ County, _____ Carolina, do hereby certify that _____ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this _____ day of _____, 20____.

Notary Public (OFFICIAL SEAL)

My commission expires _____, 20____.

END OF SECTION 00 41 13

SECTION 07 54 00

THERMOPLASTIC SINGLE-PLY ROOFING (Addendum 01)

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Areas A1, A2, B, C, D, E, F and H: Install a fully adhered *fleece back* thermoplastic membrane and flashings to provide a permanently watertight system.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
- | | | |
|----|--|---------------------|
| 1. | Lightweight Cellular Insulating Concrete | Section 03 52 16.13 |
| 2. | Steel Roof Deck Repair/Securement | Section 05 31 23 |
| 3. | Rough Carpentry | Section 06 10 00 |
| 4. | Preparation for Reroofing | Section 07 01 50 |
| 5. | Roof Insulation | Section 07 22 16 |
| 6. | Modified Bitumen Temporary Roofing | Section 07 27 13 |
| 7. | Sheet Metal Flashing and Trim | Section 07 62 00 |
| 8. | Roof Accessories | Section 07 72 00 |

1.03 REFERENCES

- A. Refer to the following references, current edition for specification compliance:
- | | |
|----|---|
| 1. | 2012 North Carolina Building Code |
| 2. | ASTM International |
| 3. | National Roofing Contractors Association (NRCA) |
| 4. | Underwriters Laboratory (UL) |
| 5. | FM Global |
| 6. | Single Ply Roofing Institute |

1.04 SUBMITTALS

- A. Refer to Section 01 33 00-Submittal Procedures for Submittals.
- B. Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Manufacturer's Product Data Sheets for all materials specified certifying material complies with all specified requirements.
- D. Submit documentation of approved, tested roof system to meet the specified requirements for the following:
- | | |
|----|---------------------------|
| 1. | Wind uplift pressures |
| 2. | UL Fire Resistance Rating |

1.05 DELIVERY, STORAGE AND HANDLING

- A. All products delivered to the job site shall be in the original unopened containers or

wrappings bearing all seals and approvals.

- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.
- D. All adhesives shall be stored at temperatures approved for the product.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- F. All materials which are determined to be damaged by the Engineer or membrane manufacturer are to be removed from the job site and replaced at no cost to the Owner.

1.06 PROJECT CONDITIONS

- A. Roofing shall not be applied during precipitation. Contractor assumes all responsibility for starting installation in the event there is a probability of precipitation occurring during application.
- B. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be cleaned and heat welded before leaving the job site that day.
- C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.
- D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.
- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- G. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A protection layer of plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.
- H. Prior to and during application, all dirt, debris and dust shall be removed from surfaces, either by vacuuming, sweeping, blowing with compressed air and/or similar methods.
- I. Contaminants, such as grease, fats, oils, and solvents, shall not be allowed to come into

contact with the roofing membrane. All rooftop contamination that is anticipated or that is occurring shall be reported to the Engineer and membrane manufacturer to determine the corrective steps to be taken.

- J. If any unusual or concealed condition is discovered, the contractor shall stop work, notify Owner of such condition immediately, and in writing within 24 hours.
- K. The roofing membrane shall not be installed under the following conditions without consulting the membrane manufacturer's technical department for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.
 - 2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
 - 3. The wall/deck intersection permits air entry into the wall flashing area.
- L. Precautions shall be taken when using membrane adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.

1.07 QUALITY ASSURANCE

- A. Manufacturer Requirements:
 - 1. Manufacturer must have written contractor/installer approval program.
 - 2. Products manufactured by other manufacturers and private labeled are not acceptable.
 - 3. See materials section for general product description and specified requirements.
- B. Contractor Requirements:
 - 1. This roofing system shall be applied only by a Contractor authorized by the membrane manufacturer prior to bid.
 - 2. Application of the roofing system shall be accomplished by a primary roofing contractor, his roofing foreman, and sufficient applicator technicians who all have been trained and approved by the manufacturer of the single ply roofing system. Contractor to submit evidence of qualification from the manufacturer.
- C. Upon completion of the installation an inspection shall be made by a representative of the membrane manufacturer to review the installed roof system and list all deficiencies.
- D. There shall be no deviation made from the Contract Documents or the approved shop drawings without prior written approval by the Engineer.
- E. All work shall be completed by personnel trained and authorized by the membrane manufacturer.
- F. Contractor to provide manufacturer written verification indicating all seams have been probed and are watertight.
- G. Install roofing system to meet UL 790 Class A Fire Rating.
- H. Wind Design: Install roofing system to meet or exceed the requirements of the current adopted version of ASCE-7, and shall be an approved assembly tested to the wind uplift pressures listed below:

1. Field of Roof: - 18 psf.
2. Perimeter of Roof: - 29 psf.
3. Corner of Roof: - 44 psf.

1.08 WARRANTIES

- A. Manufacturer's Guarantee: Manufacturer's standard form, non-pro-rated, without monetary limitation or deductibles, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks or breaches in the primary roof membrane causing moisture to enter the substrate below (even if visible leaks are not observed inside the facility). Warranty to remain in effect for wind speeds up to 72 mph. Warranties requiring the Owner's signature will not be acceptable.
1. Warranty to include but not be limited to membrane, insulation, adhesives, fasteners, sealants, flashings, polymer clad sheet metal, etc.
 2. Warranty Period: Twenty years from date of Substantial Completion.
 3. Manufacturer's Representative shall attend two post construction field inspections: the first no earlier than twenty -three (23) months and no later than twenty-four (24) months after the date of Substantial Completion and the second no earlier than fifty-nine (59) months and no later than sixty (60) months. Submit a written report within seven (7) days of the site visits to the Engineer listing observations, conditions and any recommended repairs or remedial action.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Membrane materials shall be manufactured by the following:
1. Sika Sarnafil
 2. Fibertite
 3. Carlisle Syntec

2.02 MEMBRANE MATERIALS

- A. Fully Adhered Membrane and Components:
1. *Fleece Back Membrane*
 - a. *Sika Sarnafil 60 mil Feltback G410-15*
 - b. *Fibertite 45 mil SM-FB*
 - c. *Carlisle FleeceBACK PVC 135 mil*
 2. Membrane
 - a. Sika Sarnafil 60 mil G410
 - b. Fibertite 45 mil SM
 - c. Carlisle Sure-Flex PVC FRS 60 mil Membrane
 3. Membrane Adhesive: Shall be membrane manufacturer's water-based adhesive. Water based adhesive shall not be utilized in temperatures below 40 degrees F.
 - a. Sika Sarnafil Sarnacol 2121
 - b. Fibertite FTR 490
 - c. Carlisle Sure-Flex PVC Hydrobond Water Based Adhesive

RELATED MATERIALS

- A. Flashing/Stripping Membrane: Shall be a non-fleeceback, thermoplastic membrane reinforced with fiberglass. Utilize asphalt resistant flashing membrane where in contact with residual asphaltic materials or as required by the manufacturer.
 - 1. Sika Sarnafil 60 mil G410
 - 2. Fibertite 45 mil SM
 - 3. Carlisle Sure-Flex KEE HP 60 mil Membrane
- B. Asphalt Resistant Flashing/Asphalt Resistant Stripping Membrane: Shall be a 60-mil minimum thickness non-fleeceback, asphalt resistant, thermoplastic membrane reinforced with fiberglass or polyester.
- C. Flashing Adhesive: Shall be membrane manufacturer's solvent-based adhesive.
 - 1. Sika Sarnafil Sarnacol 2170
 - 2. Fibertite FTR 190e
 - 3. Carlisle Sure-Flex PVC Low VOC Bonding Adhesive
- D. Fluid Applied Flashing: Shall be roof system manufacturer's approved, reinforced, PMMA liquid applied flashing:
 - 1. Sika Sarnafil Liquid Flashing
 - 2. Fibertite – as approved by manufacturer.
 - 3. Carlisle– as approved by manufacturer.
- E. T-joint Patch: Shall be membrane manufacturer's circular patch welded over T-joints formed by overlapping thick membranes.
- F. Corner Flashing: Shall be membrane manufacturer's pre-formed inside and outside flashing corners that are heat-welded to membrane or polymer clad metal base flashings.
- G. Pipe Flashing: Shall be membrane manufacturer's pre-formed pipe boot flashing that is heat-welded to membrane and secured with a stainless-steel draw band and sealant.
- H. Termination Bar: Shall be manufacturer's 1/8" by 1" mill finish extruded aluminum bar with pre-punched slotted holes.
- I. Counterflashing Bar: Shall be a prefabricated extruded aluminum metal counterflashing and termination bar. 0.10"-0.12" thick bar with 2-1/4" profile, pre-drilled holes 8" on center and sealant kick out at top edge.
- J. Sealant: Shall be manufacturer's multi-purpose sealant.
- K. Fasteners:
 - 1. Flashing Membrane Termination Screws: #12 stainless steel hex or pan head screws with length to penetrate substrate a minimum of 1-1/2".
 - 2. Concrete and Masonry Flashing Membrane Termination Anchors:
 - a. 1/4" diameter metal-based expansion anchor with stainless steel pin of length to penetrate substrate a minimum of 1-1/2".
 - 3. Solid Concrete Deck Fasteners and Plates:

- a. Shall be nail-in, non-threaded fasteners with split bulb tip designed for securement of membrane and insulation to structural concrete roof decks, length to penetrate deck a minimum of 1" with plates as approved by roof membrane manufacturer.
- 4. Lightweight Insulating Concrete Fasteners and Plates: Shall be specially designed fastener with 0.71" diameter head and 3/8" diameter thread with CR-10 corrosion resistant coating approved by membrane manufacturer for lightweight insulating concrete attachment and of length to penetrate deck a minimum of 2" with 2" round plate approved for membrane attachment.
- L. Primary Membrane Cleaner: Shall be a high-quality solvent cleaner provided by membrane manufacturer and approved by engineer for use as a general membrane cleaner.
- M. Pre-weld Cleaner: Shall be a high-quality solvent-based seam cleaner with moderate evaporation rate provided by membrane manufacturer.
- N. Walkway Pad: Shall be walkway pad by manufacturer of membrane.
- O. Pre-Fabricated Expansion Joint: Shall be manufacturer's approved pre-fabricated expansion joint made with polyester reinforced membrane, neoprene foam and galvanized metal.
- P. Polymer Clad Metal: Refer to Section 07 62 00-Sheet Metal Flashing and Trim

PART 3 EXECUTION

3.01 SUBSTRATE PREPARATION

- A. Verify that the substrate is dry, clean, smooth, and free of loose material, oil, grease, or other foreign matter. Sharp ridges and other projections and accumulations of bitumen shall be removed to ensure a smooth surface before roofing.
- B. Asphalt roofing substrates shall be removed, covered, or flashed using compatible, approved materials. PVC shall not come in contact with substrates containing asphalt materials.
- C. Any deteriorated substrate shall be repaired.
- D. Beginning installation means acceptance of prepared substrate.
- E. Provide necessary protection from adhesive vapors to prevent interaction with foamed plastic insulation.

3.02 MEMBRANE INSTALLATION (ADHERED)

- A. The surface of the insulation or substrate shall be inspected prior to installation of the roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.
- B. Over the properly installed and prepared substrate, membrane adhesive shall be-spread in accordance with the manufacturer's instructions and application rates utilizing equipment as required by the manufacturer.

- 1. Do not allow adhesive to skin-over or surface-dry prior to installation of roof

- membrane.
 - 2. Water based membrane adhesive shall not be used if temperatures below 40° F (5° C) are expected during application or subsequent drying time.
 - 3. Adhesive application rates shall comply with the manufacturer's published requirements.
 - 4. The Applicator shall count the amount of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.
 - 5. No adhesive shall be applied in seam areas. All membrane shall be applied in the same manner.
 - 6. Notched squeegees shall be replaced each day or as notches are reduced below ¼".
- C. The roof membrane shall be unrolled into the adhesive. Adjacent rolls overlap previous rolls by 3 inches (75 mm). This process is repeated throughout the roof area. Immediately after placement of membrane, each roll shall be pressed firmly into place with the manufacturer's recommended roller by frequent rolling in two directions.

3.03 MEMBRANE TERMINATION

- A. Terminate membrane at all walls as shown in the contract drawings.
- 1. Roof Deck: Membrane shall be mechanically terminated using approved fasteners and plates six (6) inches on center.
 - 2. Wood Wall Substrate: Membrane shall be turned up wall one inch and mechanically terminated using approved screws eight (8) inches on center with a termination bar.
 - 3. Concrete/Masonry Wall Substrate: Membrane shall be turned up wall one inch and mechanically terminated using approved anchors eight (8) inches on center with a termination bar.
- B. Terminate membrane at all penetrations as shown in the contract drawings.
- 1. Membrane shall be fastened six inches on center or a minimum of four (4) fasteners per penetration into the structural deck using fasteners and plates as approved by the membrane manufacturer for the deck substrate.
- C. Membrane shall extend over roof edge a minimum of 2" below the perimeter wood blocking.

3.04 FLASHING INSTALLATION

- A. General
- 1. All flashings shall be installed concurrently with the roof membrane as the job progresses.
 - 2. No temporary flashings shall be allowed without the prior written approval of the Engineer and Manufacturer. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Contractor's expense.
 - 3. Seams shall not be "taped" as temporary measure but shall be fully completed before the end of each day.
 - 4. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces.
 - 5. Where substrates are incompatible with adhesives and PVC materials, the Contractor shall remove the incompatible materials and replace it with a

- compatible substrate or install compatible PVC flashing materials.
6. Use caution to ensure adhesive fumes are not drawn into the building.

B. Adhesive for Flashing Membrane

1. Over the properly installed and prepared flashing substrate, flashing adhesive shall be applied according to instructions found on the Product Data Sheet. The membrane adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies.
2. Only an area which can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
3. No adhesive shall be applied in seam areas that are to be welded.

C. All flashings shall mechanically terminated a minimum of 8 inches above the finished roofing surface using approved fasteners and counterflashing bar unless otherwise indicated in the Contract Drawings. Flashing heights less than 8" shall be accepted in writing by the Manufacturer's Technical Department.

D. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the (roof) membrane.

E. All flashings shall be hot-air welded at their joints and at their connections with the (roof) membrane.

F. All flashings that exceed 30 inches (0.75 m) in height shall receive additional securement. Consult Manufacturer's Technical Department for securement methods.

G. Corners shall be flashed using the membrane manufacturer's pre-formed corners.

H. Polymer Clad sheet metal incorporated into the roofing system shall be sealed off with a heat welded stripping ply. The stripping ply shall extend four inches beyond sheet metal onto roof membrane and fit closely to edge of sheet metal.

I. Roof Drain:

1. Mechanically attach membrane 6" on center into structural deck around drain sump. Fully adhere flashing membrane and hot-air weld to membrane a minimum of 4 inches.
2. Flashing membrane shall be set in a full bed of sealant under the clamping ring.
3. Refer to Section 22 14 00.

J. Soil Pipe/Pipe Penetration:

1. Provide field wrapped pipe penetration flashing or manufacturer's pre-fabricated pipe boot as shown in detail drawing.
2. Apply aluminum tape to penetration if asphalt contamination is present.
3. Horizontal flashing membrane shall be hot-air welded a minimum of four inches onto the membrane.
4. Vertical flashing membrane shall be fully adhered to pipe penetration and extend a minimum of 1.5" horizontal at the base of penetration. Hot-air weld vertical flashing membrane to horizontal flashing membrane.
5. Install stainless steel draw band and sealant or hot-air weld flashing cap to terminate top edge of pipe flashing.

3.05

HOT-AIR WELDING OF SEAM OVERLAPS

A. General

1. All seams shall be hot-air welded. Seam overlaps should be 3 inches (75 mm) wide when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.
2. Welding equipment shall be provided by or approved by the membrane manufacturer. All mechanics intending to use the equipment shall have successfully completed a training course provided by a membrane manufacturer's technical representative prior to welding.
3. All membrane to be welded shall be clean and dry.

B. Hand-Welding

1. Hand-welded seams shall be completed in two stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.
2. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
3. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1½ inch (40 mm) wide nozzle is recommended for use. For corners and compound connections, the ¾ inch (20 mm) wide nozzle shall be used.

C. Machine Welding

1. Machine welded seams are achieved by the use of automatic welding equipment. When using this equipment, instructions from the manufacturer shall be followed and local codes for electric supply, grounding and over current protection observed. Dedicated circuit house power or a dedicated portable generator is recommended. No other equipment shall be operated off the generator.
2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.

D. Quality Control of Welded Seams

1. The Applicator shall check all welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark grey material from the underside of the top membrane. On-site evaluation of welded seams shall be made daily by the Applicator to locations as directed by the Engineer or membrane manufacturer's representative. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Applicator at no extra cost to the Owner.

3.06

WALKWAY PAD INSTALLATION

- A. Roofing membrane to receive walkway pad shall be clean and dry.
- B. Place chalk lines on sheet to indicate location of Walkway.

- C. Apply a continuous coat of membrane adhesive to the sheet and the back of walkway pad in accordance with membrane manufacturer's technical requirements and press walkway pad into place with a water-filled, foam-covered lawn roller.
- D. Clean the membrane in areas to be welded. Hot-air weld the entire perimeter of the walkway to the roofing membrane.
- E. Check all welds with a rounded screwdriver. Re-weld any inconsistencies.
- F. Important: Check all existing membrane seams that are to be covered by walkway with rounded screwdriver and re-weld any inconsistencies before walkway installation.
- G. Provide walk pads where indicated in Contract Drawings and at the following locations:
 - 1. Around roof hatches.
 - 2. Around HVAC units.
 - 3. At door access to roof areas.

3.07 TEMPORARY CUT-OFF

- A. All flashings shall be installed concurrently, with the membrane in order to maintain a watertight condition as the work progresses.
- B. When a break in the day's work occurs in the central area of the project install a temporary watertight seal. An 8" strip of flashing membrane shall be welded 4" to the new field membrane. The remaining 4" of flashing membrane shall be sealed to the deck and/or the substrate so that water will not be allowed to travel under the new or existing membrane. The edge of the membrane shall be sealed in a continuous heavy application of pourable sealer of 6 inch width. When work resumes, the contaminated membrane shall be removed and disposed of. None of these materials shall be reused in the new work.
- C. If inclement weather occurs while a temporary water stop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- D. If any water is allowed to enter under the newly-completed system, the affected area shall be removed and replaced at the Contractor's expense.

3.08 CLEANING AND PROTECTION

- A. The Contractor shall be responsible for protecting the roof from construction related damages during the Work.
- B. The Contractor shall ensure trash and debris is removed from the roof daily.
- C. Metal scraps, nails, screws and other sharp damaging debris shall be kept off of the roof membrane surface during construction.
- D. The Contractor shall clean off/remove excess adhesive, sealant, stains and residue on the membrane and flashing surfaces.
- E. The Contractor shall repair or remove and replace damaged membrane, flashings and other membrane components. Repairs shall be approved by the Engineer and be in accordance with the membrane manufacturers repair instruction to comply with the specified warranty.
- F. The Contractor shall remove temporary coverings and masking protection from adjacent work areas upon completion.

END OF SECTION 07 54 00



1927 J.N. PEASE PLACE, SUITE 201,
CHARLOTTE, NC 28262

ROOFING, WATERPROOFING AND BUILDING ENVELOPE
ENGINEERS AND CONSULTANTS
www.reiengineers.com
AN EMPLOYEE-OWNED COMPANY

NORTH CAROLINA ENGINEERING
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4. ANY WHOLE OR PARTIAL INSULATION BOARD OR PORTION OF ANY BOARD WHICH FALLS IN THE PERIMETERS & CORNERS OUTLINED SHALL BE SUBJECT TO THE FASTENING REQUIREMENTS FOR THE HIGHEST WIND ZONE ENCOUNTERED, ACROSS THE ENTIRE BOARD.
5. PROVIDE NEW 4"x4" WOOD SLEEPER, SET ON SHEET OF SACRIFICIAL WALK PAD.
6. REMOVE EXISTING FOAM SEALANT, PROVIDE BACKER ROD AND SEALANT AS SPECIFIED IN SECTION 07 62 00.

PROJECT NAME:
**HENDERSON COUNTY
MAIN LIBRARY
ROOF REPLACEMENT**

301 N. WASHINGTON STREET
HENDERSONVILLE, NC 28739

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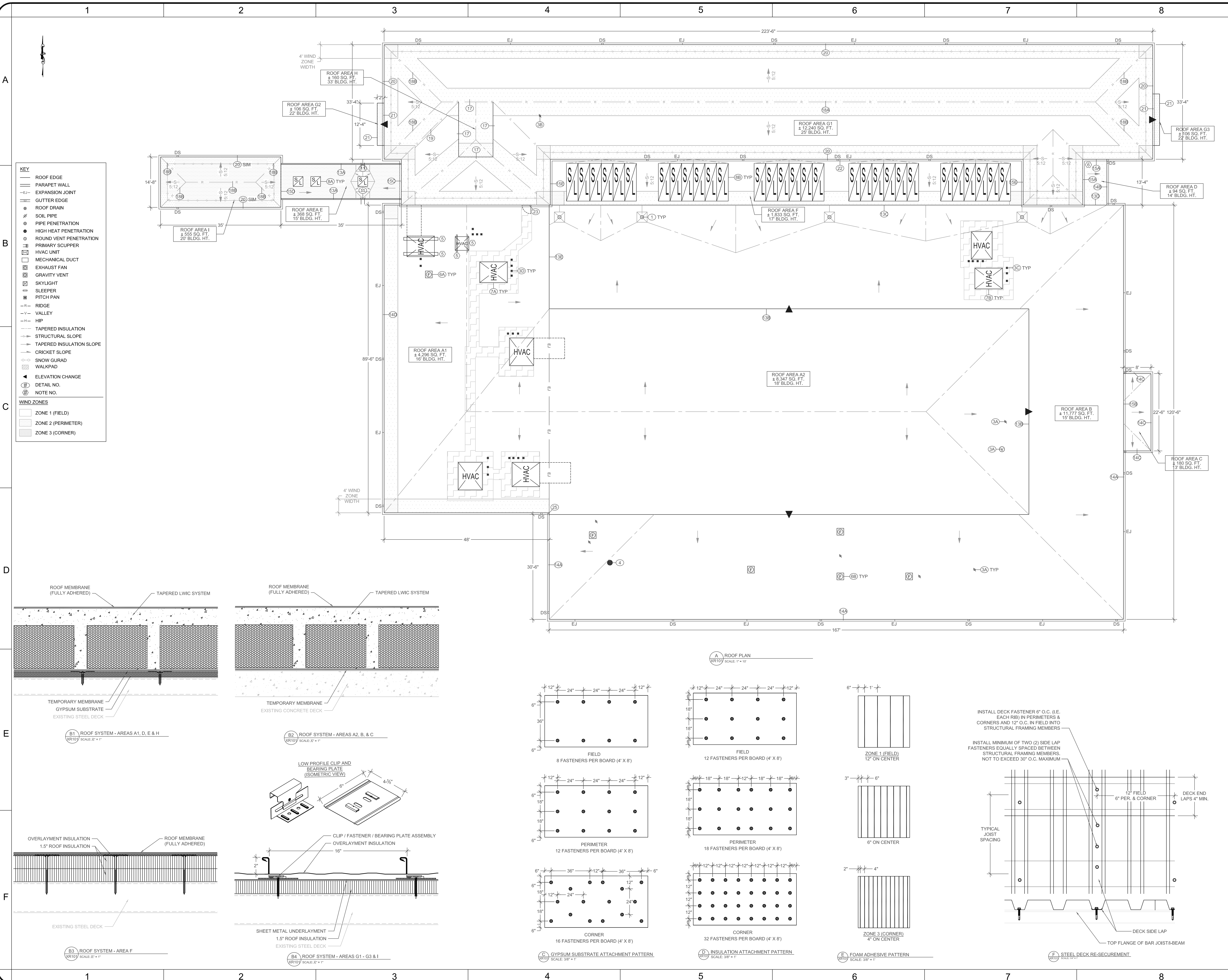
REVISIONS:		
NO.	DATE	DESCRIPTION
01	07/30/2018	CORRECTION OF DETAIL CALLOUT #21 & #22

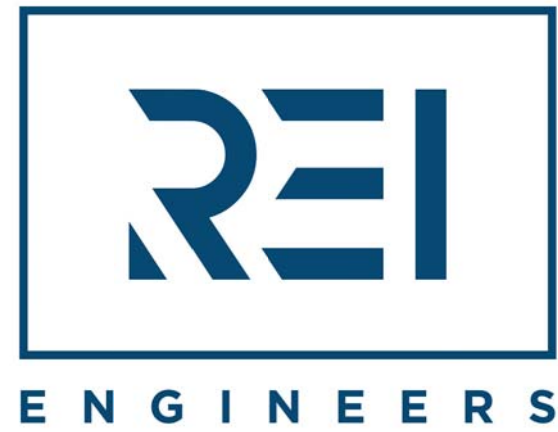
SHEET TITLE:
**ROOF PLAN /
ROOF SYSTEMS /
ATTACHMENT
PATTERNS**

PROJ. NO:
018CLT-069

DATE:
07/13/2018

SHEET NO:
XR-101





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CHARLOTTE, NC 28262

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2. DIMENSIONS, DETAIL COMPONENTS AND EQUIPMENT PENETRATION LOCATIONS ARE FOR INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL INFORMATION PROVIDED.
3. FOR DETAILS, LIGHT LINES REPRESENT EXISTING CONSTRUCTION TO REMAIN AND DARK LINES REPRESENT NEW COMPONENTS TO BE PROVIDED.

PROJECT NAME:

HENDERSON
COUNTY

MAIN LIBRARY
ROOF
REPLACEMENT

301 N. WASHINGTON STREET
HENDERSONVILLE, NC 28739

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THE ORIGINAL DRAWING

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SCALE DRAWING ACCORDINGLY.

REVISIONS:

NO.	DATE	DESCRIPTION
01	07/30/2018	CHANGE TO DETAIL 8A CALLOUT #21 & #22

SHEET TITLE:

DETAILS

PROJ. NO:

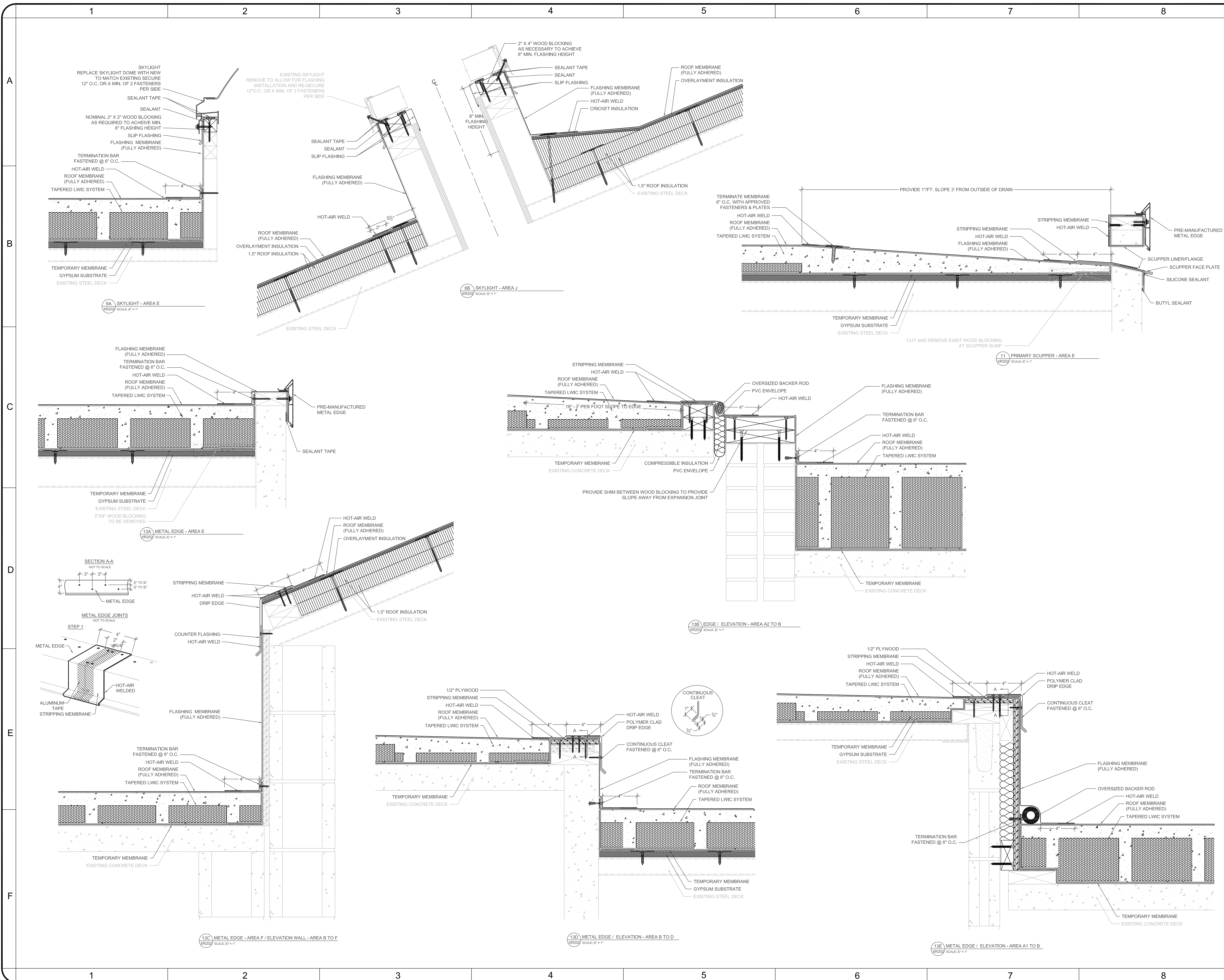
018CLT-069

DATE:

07/13/2018

SHEET NO:

XR-202



PROJECT:	Main Library Roof Replacement	REI PROJECT NO:	018CLT-069
OWNER:	Henderson County	MEETING DATE:	07-24-2018
ENGINEER:	REI Engineers	MEETING TIME:	10:00 AM
		MTG. LOCATION:	100 N. King Street Hendersonville, NC

Participants: Refer to the attached sign-in sheet.

This confirms and records REI's interpretation of the discussions which occurred, and our understanding reached during this meeting unless notified in writing within three days of date of minutes:

1. Mr. Urbaniuk opened the meeting and a sign-in sheet was circulated.
2. A brief introduction of the project was provided.

Section 00 11 13-Advertisement for Bids

3. Bids shall be received by Owner until **10:00 AM** on **August 7, 2018** at **HC Government Offices, First Floor Meeting Room, 100 North King Street, Hendersonville, NC 28792**. The bids shall be publicly opened and read.
4. Bidder attendance at this pre-bid meeting was mandatory.

Section 00 21 13-Instructions to Bidders

5. Bid Security will be required and shall be submitted with Contractor's bid.
6. Performance and Payment Bonds will be required.
7. Roof system manufacturer shall be listed on the bid form and the RMA Form shall be submitted with Contractor's bid.

Section 00 41 13-Bid Form

8. The alternates listed for this project are as follows:
 - a. Alternate No. 1 – Replace skylight assemblies on Roof Area F as specified in specification Section 08 45 23.
9. One manufacturer for the membrane roof system and one manufacturer for the metal roof system shall be listed on the Bid Form.
10. A **\$30,000.00** contingency allowance shall be contained in the Base Bid.
11. The following Quantity Allowances shall be contained in the Base Bid.
 - a. Repair 1,000 SF of steel deck with coating.
 - b. Repair 500 SF of steel deck with steel plates.
 - c. Replace 500 BF of damaged or deteriorated wood blocking.
 - d. Replace 250 SF of damaged or deteriorated plywood.
12. Unit prices shall be provided and utilized to determine the applicable quantity allowances.
13. Schedule of Completion:
 - a. **A written Notice to Proceed is expected to be given to the successful Contractor on or about August 10, 2018.**
 - b. With the intent to allow the Contractor to focus on completion of the Cellular Light Weight Concrete areas before cold weather sets in; the Schedule of completion is being adjusted as follows:

- i. The Substantial Completion for the flat roof sections (A1, A2, B, C, D, E & H) for this project shall be **November 30, 2018**.
 - ii. The Substantial Completion for the balance of the project (Areas G1, G2, G3, I, and alternates if accepted) shall be **January 29, 2018**.
 - c. Failure to meet the deadlines above shall result in Liquid Damages being incurred of \$500.00 per calendar day until Substantial Completion for that area is achieved.
 - d. It is the Contractors responsibility to document weather days on the project for any claim made for inclement weather forecasts.
14. Provide all bid enclosures listed on the Bid Form including the following:
- a. Bid Bond
 - b. MW/BE Identification of Minority Business Participation
 - c. MW/BE Form(s) A or Form B
 - d. Roof Manufacturer's Acknowledgement Form

Section 00 43 40-MWSBE Participation

15. Bidders shall follow the Owner's MWSBE Program and shall submit the required forms contained in the project manual with their bid.

Section 01 11 00-Summary of Work

16. A brief outline of the scope of work was reviewed.
- a. **Roof Areas A1, D, E, and H (Approximately 4,918 square feet):** Remove and dispose of the existing roof system including flashings, sheet metal, and light weight concrete down to the existing steel deck; secure the steel deck to structural framing members; mechanically attach gypsum substrate, torch apply temporary roof membrane; provide tapered cellular lightweight insulating concrete; fully adhere thermoplastic single ply membrane along with flashings and accessories to provide a complete, watertight, 20-year warrantable roof assembly.
 - b. **Roof Areas A2, B, and C (Approximately 20,304 square feet):** Remove and dispose of the existing roof system including flashings, sheet metal, and light weight concrete down to the existing vapor barrier; remove and repair disbanded vapor barrier, prime vapor barrier with asphalt primer; torch apply temporary membrane; provide tapered cellular lightweight insulating concrete; fully adhere thermoplastic single ply membrane along with flashings and accessories to provide a complete, watertight, 20-year warrantable roof assembly.
 - c. **Roof Area F (Approximately 1,833 square feet):** Remove and dispose of the existing roof system including flashings and sheet metal down to the existing steel deck; resecure the steel deck to structural framing members; mechanically attach two layers 1.5" roof insulation; adhere gypsum overlayment insulation in foam adhesive; fully adhere thermoplastic single ply membrane along with flashings and accessories to provide a complete, watertight, 20-year warrantable roof assembly.
 - d. **Roof Areas G1, G2, G3, and I (Approximately 13,007 square feet):** Remove existing metal roof panels and insulation down to the existing steel deck; secure steel deck to structural framing members; mechanically attach 1.5" roof insulation; provide self-adhering metal roof panel underlayment; provide standing seam metal roof along with sheet metal flashings including soffit vents, ridge vents, gutters, downspouts, and accessories to provide a complete, weathertight, 20-year warrantable metal roof assembly.
 - e. **Provide snow guard system along gutter edge of metal roof areas.**
 - f. **Replace skylight domes on Area E.**
 - g. **Wet glaze translucent panels to frame on skylight system on Area F.**
 - h. **Asbestos Containing Roofing Materials (ACRM):**
 - i. The presence of Asbestos Containing Roofing Materials (ACRM) has been detected in test samples of the Vapor Barrier of Roof Areas B and C. The Contractor shall remove and

- dispose of all ACRM in a safe and legal manner.
- ii. It is the intention of these specifications that no asbestos bearing materials be incorporated into the work.

Section 01 14 00-Work Restrictions

17. Works hours shall generally be performed during normal business hours. Should the Contractor elect to work on Saturday or Sunday, notification to the Owner and Engineer at least 48 hours in advance shall be required.
18. **The Library's hours are: Mon-Thu 9am-8pm; Fri-Sat 9am-5pm; Sunday Closed.**
19. **West door shall remain open and accessible for the duration of the project. Contractor shall work this area off hours or provide overhead protection for pedestrians.**

Section 01 77 00-Closeout Procedures

20. A five-year contractor's warranty, asbestos free warranty and a twenty-year roofing manufacturer's warranty shall be required.

Technical Specifications/Contract Drawings

21. On the roof plan XR-101, Details 21 and 22 are transposed from each other. The North side of roof Area F is Detail 22; Roof Areas G2 and G3 are Detail 21.
22. Roof Area E, Detail 8A the existing skylights shall be removed and replaced with a new skylight matching the original.

Miscellaneous

23. Staging and Material storage areas are as follows:
- a. The main staging area shall be limited to the parking area immediately to the West of the building. An alternate area is available nearby at the back of the parking lot across 3rd Ave W near Rhodes Street behind the church. The Contractor shall provide a temporary construction fence around their staging areas and materials. See Figure 1.
 - b. Access to the drive on the North side of the building will be allowed once the Contractor reduces the size of the main staging area and provides vehicle access in the parking lot driveway. The Contractor shall provide barricades and signage while working in and over the North Road to prevent patrons from inadvertently driving or entering into the lane.
 - c. Access to the roof shall be via a Contractor provided extension ladder that shall be taken down every night and secured.
 - d. The Contractor will provide a portable toilet facility.
24. Several Contractors requested information on the HVAC Contractors that the county uses to do work on site. They are:
- a. Nicholson Company, Lee Roy Nicholson 828-697-2638.
 - b. Cooper Construction, Barry Holbert 828-243-5313.
25. Bidders wishing to make additional site visits shall contact Mr. Thad Ninnemann, cell 828-577-1501, to coordinate an appointment for additional visits. Please allow 24 hours of advance notice to schedule the site visit.
26. Bidders wishing to make additional site visits shall provide an extension ladder for access to the roof and must check in at the office immediately upon arrival to the facility.
27. All bidding or specification related questions are to be directed to REI Engineers in writing (email) by 5:00 PM on Wednesday, **August 1, 2018** in an effort to keep addenda from being issued after Friday, **August 3, 2018**.

PREPARED BY:

George S. Urbaniuk

George S. Urbaniuk, RRO, CDT

07-30-2018

Date

☒ Attachments: Sign-In Sheet, Figure 1 – Staging Areas

Copies:

☒ Attendees

☐ _____

☐ _____

☐ _____



Figure 1 - Staging Areas