CITY COUNCIL

REQUEST FOR PROPOSALS
For
BYRON MUNICIPAL BLD ROOF
PROJECT 21CBGU01RR281

(Located at 401 Main St. Byron, GA 31008)

RFP NUMBER 22.1

For all questions about this RFP contact via email:

TIFFANY SANDEFUR
CITY ADMINISTRATOR
401 MAIN ST BYRON, GA 31008
CELL PHONE: 478-294-9176
OFFICE: 478-956-5555
tsandefur@byronga.com

RELEASED ON:

FEBRUARY 9, 2022

DUE ON:

MARCH 2, 2022; 5:00 P.M. Local Time
at the Byron Municipal Building
401 Main Street Byron, GA 31008

All bids must be accompanied by a Bid Bond in the amount not less than ten percent (10%) of the Total Base Bid. Performance and Payment Bond, each in the amount of one hundred percent (100%) of the total contract amount, will be required of the successful bidder. Bonds must be written by an acceptable Surety Company licensed to do business in the State of Georgia and listed in the Department of Treasury, Circular 570, latest edition.

A **mandatory** pre-bid conference is scheduled for **February 18, 2022,** at 3:00 p.m.in the

Byron Municipal Building Auditorium

E-Verify and Bid number must be printed (written) on outside of proposal envelope.

1.0 INTRODUCTION

1.1 Purpose of Procurement

The Byron City Council (herein after referred to as "City of Byron") is seeking proposals from contractors qualified and experienced in roofing projects consisting of miscellaneous repair and/or replacement of existing roof materials.

1.2 Objective

To remediate existing issues with the existing roof and improved the parapet wall treatments.

1.3 Proposal Certification

The City of Byron certifies that the use of competitive sealed bidding will not be practical or advantageous to the City of Byron in completing the acquisition described in this RFP. Competitive sealed proposals will be submitted in response to this RFP. All proposals submitted pursuant to this request will be made in accordance with the provisions of this RFP.

1.4 Schedule of Events

This Request for Proposals will be governed by the following schedule:

DATES

02/9/2022	Release of RFP
02/18/2022	Prebid meeting & Site Visit
02/22/2022	Deadline for written questions
02/25/2022	Answers to written questions posted on the City of Byron website (will be posted as they are received) www.byronga.com
03/2/2022	Proposals due
03/04/2022	Award (approximate)

1.5 Restrictions on Communications with Staff/Questions

All questions about this RFP must be submitted in the following format:

Company Name

1. Question
2. Citation of relevant section of the RFP, Plans or specifications.

Questions must be directed in writing (email) only to
the Issuing Officer: tsandefur@byronga.com

From the issue date of this RFP until a contractor is selected and the selection is announced, Offerors are not allowed to communicate for any reason with any City of Byron staff except through the Issuing Officer named herein, or during the Offeror's conference, or as provided by existing work agreement(s). The City of Byron reserves the right to reject the proposal of any Offeror violating this provision.

All questions concerning this RFP must be submitted in writing (email may be used) to the Issuing Officer. No questions other than written will be accepted. No response other than written will be binding upon the City of Byron. Questions and answers will be posted to the City of Byron Website www.byronga.com.

1.6 Definition of Terms

Byron City Council- City of Byron
OCGA – Official Code of Georgia Annotated (State Statute)
Offeror – Respondent to this Request for Proposal
RFP – Request for Proposal

1.7 Background

For information on the Byron City Council, visit
https://www.byronga.com/

1.8 Delivery (submission) of Proposals

All proposals must be delivered to the Byron Municipal Building, to the attention of Tiffany Sandefur, with the project name, RFP #, Offeror's name, and Federal Work Authorization User Identification Number, clearly written on the outside of the sealed envelope. City of Byron will not be responsible for any proposals delivered incorrectly or not received by the specified date and time.

Any proposal received after the due date and time will not be evaluated.

1.9 Mandatory Site Visit

All Vendors submitting proposals are required to attend the mandatory site visit. At the site visit, all contractors will meet with city personnel and the roof consultant for this project. Contractors who fail to participate in the mandatory site visit will not be considered for award.

1.10 Non-Performance

City of Byron reserves the right to discontinue service of all and any portion of any contract resulting from this bid for reason of unsatisfactory product or service or any reason determined to be detrimental to the health and welfare of visitors or city personnel and to hold the Contractor in default. Failure to furnish all items per the contract, in a timely manner, as specified, shall constitute unsatisfactory service.

Upon completion of the project and before acceptance and final payment will be made, the successful contractor shall clean and remove from the work site, all surplus and discarded materials, temporary structures, and debris.

1.11 Bonds

Bid Bond: Not less than ten percent (10%) of the total contract amount.
Performance and Payment Bonds: One hundred percent (100%) of the total contract amount.

1.12 Insurance

The selected GC firm shall provide and maintain the following insurance requirements. These insurance requirements will be a part of the contract agreement "**AIA Document A105-2007 Standard Form of Agreement Between Owner and Contractor** in conjunction with **AIA Document A201-2007 General Conditions**".

Upon selection of GC, GC will be notified of the necessity to provide required insurance. Proof of insurance shall be provided within fifteen (15) days of the date of notification to the GC.

1.12.1 The following requirements apply to any and all work under the contract agreement by the GC and Sub-Contractors of any tier:

a. Any and all insurance required shall be maintained during the entire length of the contract agreement, including any extensions thereto, and until all work has been completed to the satisfaction of the City of Byron. Any and all insurance must be on an occurrence basis.

   Prime contractor or its Subcontractors shall not commence any work of any kind under a contract until all insurance requirements contained within the solicitation have been complied with.

b. The City of Byron shall be covered as an Additional Insured under any and all insurance required by the contract agreement. Confirmation of this shall appear on all certificates of insurance and on any and all applicable policies.

c. The City of Byron shall be given no less than thirty (30) days' notice of cancellation. The City of Byron shall be given not less than thirty (30) days prior written notice of material changes of any insurance required of the GC under this Request for Qualifications and Proposals.

d. Each and every agent shall warrant when signing the certificate of insurance that he is acting as an authorized representative on behalf of the companies affording insurance coverage under the contract agreement referenced herein this Request for Qualifications and Proposals and that he is licensed by the State of Georgia to conduct insurance business in the State of Georgia and that the companies affording insurance coverage are currently licensed by the State of Georgia and are currently in good standing with the Commissioner of Insurance for the State of Georgia.

e. Any and all companies providing insurance required by a contract must meet the minimum financial security requirements as set forth below. The rating for each company must be indicated on the certificate of insurance.

For all contracts, regardless of risk, companies providing insurance under this contract must have a current:

i. Best's Rating not less than A; and

ii. Best's Financial Size Category not less than Class VIII.

f. In the event the GC neglects, refuses, or fails to provide the insurance required by the Contract Documents, or if such insurance is cancelled for any reason, City of Byron shall have the right, but not the duty, to procure the same, and the cost thereof shall be deducted from moneys then due or thereafter to become due to the GC or shall have the right to cancel the contract agreement.

1.12.2 Worker's Compensation and Employer's Liability Insurance: The GC shall procure and maintain Worker's Compensation and Employer's Liability Insurance in the following limits. Such insurance is to cover each and every employee who is or may be engaged in work under the contract.

Worker's Compensation Limits:	Statutory
Employer's Liability Limits:	
Bodily Injury by Accident	$1,000,000 each accident
Bodily Injury by Disease	$1,000,000 each employee
Bodily Injury by Disease	$1,000,000 policy limit

GC waives all rights against Owner and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the workers compensation and employer's liability or commercial umbrella liability insurance obtained by GC Contractor pursuant to this agreement.

1.12.3 Commercial General and Umbrella Liability Insurance: The GC shall procure and shall maintain commercial general liability (CGL) and if necessary, commercial umbrella insurance with a limit of not less than $1,000,000 each occurrence, $2,000,000 aggregate, as shall protect him and any subcontractor performing work covered by this Contract from claims for damages for bodily injury, including accidental death, as well as from claims for property damages, which may arise from operations under the Contract Agreement, whether such operations are by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them.

a. Comprehensive Form
b. Contractual Insurance
c. Personal Injury

d. Broad Form Property Damage
e. Premises – Operations
f. Completed Operations

This coverage shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under the contract. Policy coverage must be on an occurrence basis.

GC waives all rights against Owner and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement.

Disposition: Certificate(s) of insurance must be sent to Owner with properly executed Contract Documents.

1.12.4. Business Auto and Umbrella Liability Insurance: The GC shall procure and shall maintain business automobile liability, and if necessary, commercial umbrella liability insurance with a limit of not less than $1,000,000 each occurrence, $2,000,000 aggregate.

Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

GC waives all rights against Owner and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the business auto liability or commercial umbrella liability insurance obtained by GC pursuant to this agreement or under any applicable auto physical damage coverage.

Disposition: Certificate(s) of insurance must be sent to Owner with properly executed Contract Documents.

1.12.5. Endorsement of Casualty/Liability Policies: There shall be attached to and made a part of every CASUALTY/LIABILITY INSURANCE POLICY an endorsement of the insurance company in accordance with the specimen shown in "*Attachment A*".

1.12.6. Builder's Risk Insurance: The GC shall procure and shall maintain in force Builder's Risk Insurance on the entire work. Such insurance shall be written on a completed value form and in an amount equal to the initial contract sum. The insurance shall apply on a replacement cost basis.

The insurance required in this subparagraph shall name as insured the Owner, the GC, and all subcontractors and sub-subcontractors in the work.

The insurance required in this subparagraph shall cover the entire work at the site of the project, including reasonable compensation for architects' services and expenses made necessary by an insured loss. Insured property shall include portions of the work located away from the site but intended for use at the site and shall also cover portions of the work in transit. The policy shall include as insured property scaffolding, false work, and

temporary buildings located at the site. The policy shall cover the cost of removing debris, including demolition as may be made legally necessary by the operation of any law, regulation or ordinance.

The insurance required by this subparagraph shall be written to cover all risks of physical loss except those specifically excluded in the policy and shall insure at least against the perils of fire and extended coverage, theft, vandalism, malicious mischief, and collapse.

Any deductible applicable to the insurance purchased in compliance with this subparagraph shall be identified in the contract documents. If any part of a loss is not covered because of the application of a deductible amount, whether identified in the policy or not, such loss shall be paid by the GC.

The insurance required by this subparagraph shall be maintained in effect, unless otherwise provided for in the contract documents, until the earliest of the following dates:

a. the date on which all persons and organizations who are insured under the policy agree that it shall be terminated;

b. the date on which final payment, as provided for in the Contract Agreement, has been made;

c. the date on which the insurable interests in the property of all insured other than the Owner have ceased.

If the Owner is damaged by the failure of the GC to maintain insurance as required in this subparagraph, then the GC shall bear all reasonable costs properly attributable to that failure.

Owner and GC Construction Manager waive all rights against each other and each of their subcontractors, sub-subcontractors, officers, directors, agents and employees, for recovery of damages caused by fire and other perils to the extent covered by builders risk insurance purchased pursuant to the requirements of this subparagraph or any other property insurance applicable to the work.

1.12.7. Hold Harmless Agreement: The GC shall Hold Harmless the City of Byron from any and all claims, suits, actions, damages, liability and expenses in connection with loss of life, bodily or personal injury or property damage, including loss of use thereof, directly or indirectly caused by, resulting from, arising out of or occurring in connection with the performance of this contract. The GC's obligation shall not be limited by, or in any way to, any insurance coverage or by any provision in or exclusion of omission from any policy of insurance.

2.0 MANDATORY REQUIREMENTS

This section identifies all mandatory requirements, which must be addressed in the proposal before further consideration will be given. Each response must reference the item number to which it is in reference.

2.0.1 Detailed Description of the proposed roofing system

All portions of the roofing system must be in compliance with the drawings and specifications for the project.

2.0.2 Costs

Provide a Base Costs along with the requested unit pricing shown in appendix A.

Successful bidders must provide a "turn key job." Price offered should include all labor and materials to complete entire project. Price offered should include all shipping and handling charges, F.O.B. destination, delivery, uncrating of products and installation at the site. All pricing shall be in accordance with all applicable city, state, and federal codes.

2.0.3 Timeline

Contractors shall include an estimated timeline of events including tear-off, deliveries, beginning installations, and completion date.

2.0.5 Experience/References

City of Byron requires a high level of service and support from the successful vendor. Vendors must have worked in a Law enforcement Detention environment and include examples including photos of work completed on other detention centers, a list of three references from current projects. Each reference must contain the reference's name, address, telephone number, and point of contact. This may be waived if three or more projects have been completed by the contractor for the City of Byron in the past two years.

2.0.6 Site Management

The successful contractor will be responsible for managing the site and coordinating all construction activities in cooperation with the City of Byron.

2.0.7 Changes/Issues

The successful contractor shall report to the Executive Director of Capital Programs during the execution of this project and shall update and submit to the Director of any proposed changes or issues concerning the original design plan.

2.0.8 Removal of Packaging and Debris

The successful contractor shall keep the work site and surrounding area free from accumulation of waste materials and debris during this project. Once project is complete, all debris and garbage must be removed from the building.

2.0.9 Company Background and Experience

Offeror will describe their background, relevant experience, and qualifications, including, but not limited to the following:

2.0.10 Company Structure

The Offeror will include in the proposal the legal form of their business organization, the state in which incorporated (if a corporation), the types of business ventures in which the organization is involved and the office location that will be the point of contact during the term of any resulting contract.

2.0.11 Experience

The Offeror must include in the technical proposal the number of full consecutive years they have been operating under their current business name.

The Offeror will provide a list of at least three clients for whom similar services, as detailed in this RFP, have been provided during the past three years. The list must include:

- dates of service
- name of contact person
- title of contact person
- phone number of contact person

The Offeror will also disclose any services terminated by the client(s) and the reason(s) for termination.

2.0.12 Business Litigation

The Offeror will disclose any involvement by the organization or any officer or principal in any material business litigation within the last five (5) years. The disclosure will include an explanation, as well as the status and/or disposition.

2.1 PROPOSAL FORMAT

2.1.1 Technical proposal shall include the following:

1. Full name and address of the Contractor.
2. Cost Proposal – Appendix A
3. Proposal Certification – Appendix B
4. Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1) – Appendix C
5. A brief, concise summary of two (2) pages or less of the proposal.
6. Response to each item listed in the Mandatory Requirements Section 2 of this RFP numbered and labeled.
7. A list of requested services from City of Byron (i.e. removal of equipment if needed, electrical work, including temporary power).

3.0 PROPOSAL SUBMISSION AND EVALUATION

3.1 Process for Submitting Proposals

3.1.1 Preparation of Proposal

Each proposal should be prepared simply and economically, avoiding the use of elaborate promotional materials beyond those sufficient to provide a complete proposal. The Offeror is solely responsible for the cost of responding to this RFP. Reimbursement for cost of preparation of response will not be made.

3.2 Evaluation Process

The evaluation of proposals received on or before the due date and time will be conducted in the following phases.

3.2.1 Administrative Review

The proposals will be reviewed by the Issuing Officer for the following administrative requirements:

1. Submitted by deadline
2. All required documents have been submitted
3. All documents requiring an original signature have been signed and are included

3.2.2 Mandatory Requirements Review

Proposals, which pass the administrative review, will then be reviewed by the Evaluation Team to ensure all requirements identified in Section 2 are addressed satisfactorily.

3.2.3 Proposal Evaluation

Proposals, which pass the Mandatory Requirements Review, will be reviewed by the Evaluation Team for quality and completeness.

The following are the maximum possible points of each category:

Experience: Experience in similar projects	15 Points
Schedule: Proposed Start and Duration of the project.	25 Points
Cost: Fees for providing full scope of work	40 Points
References:	10 Points

3.3 Rejection of Proposals/Cancellation of RFP

The City of Byron reserves the right to reject any or all proposals, to waive any irregularity or informality in a proposal, and to accept or reject any item or combination of items, when to do so would be to the advantage of the City of Byron. It is also within the right of the City of Byron to reject proposals that do not contain all elements and information requested in this document. The City of Byron reserves the right to cancel this RFP at any time. The City of Byron will not be liable for any cost/losses incurred by the Offerors throughout this process.

4.0 TERMS AND CONDITIONS

4.1 RFP Amendments

The City of Byron reserves the right to amend this RFP prior to the proposal due date. All amendments and additional information will be posted promptly to the City of Byron website, which is located at the following web address: www.byronga.com
Offerors are encouraged to check this website frequently.

4.2 Proposal Withdrawal

A submitted proposal may be withdrawn prior to the due date by a written request to the Issuing Officer. A request to withdraw a proposal must be signed by an authorized individual.

4.3 Cost for Preparing Proposals

The cost for developing the proposal is the sole responsibility of the Offeror. The City of Byron will not provide reimbursement for such costs.

4.4 Contract

The Contract, Consensus Docs 200 Standard Agreement and General Conditions between Owner and Constructor (Lump Sum Price), which the City of Byron intends to use with the successful Offeror, is attached to this RFP and identified as Appendix C. Exceptions to the Contract should be identified and submitted with the Offeror's proposal. Proposed exceptions must not conflict with or attempt to preempt mandatory requirements specified in this RFP, Project Specifications or Plans.

Prior to award, the apparent winning Offeror will be required to enter into discussions with the City of Byron to resolve any contractual differences before an award is made. These discussions are to be finalized and all exceptions resolved within one (1) week of notification. Failure to resolve contractual differences will lead to rejection of the Offeror's proposal.

The City of Byron reserves the right to modify the Contract to be consistent with the successful offer and to negotiate with the successful Offeror other modifications, provided that no such modifications affect the evaluation criteria set forth herein, or give the successful Offeror a competitive advantage.

4.5 Conflict of Interest

If an Offeror has any existing client relationship that involves the Byron City Council, the Offeror must disclose each relationship.

4.6 Compliance with Laws

The Contractor will comply with all State and Federal laws, rules, and regulations.

Appendix A

COST PROPOSAL

RFP #22.1

BYRON MUNICIPAL BLD ROOF PROJECT

Description	Quote in words *(i.e.: nine thousand, two hundred, fifty)*	Numeric Quote *(i.e. :$9,250.00)*
BASE COST		$
ADD ALTERNATES		
ALTERNATE ONE: Install specified KEE Roof system at South Wing section 2 in lieu of specified and system, and to the Conference Center Section.	Total addition	$
ALTERNATE TWO: Restore the masonry on the chimney.	Total addition	$
ALTERNATE THREE: Demolish the chimney below the decking and framing, install new decking and framing and roof over.	Total addition	$
ALTERNATE FOUR: Amount to be deducted for not supplying third party moisture survey associated with Add Alternate No 1.	Total deduction	<$ >
UNIT COSTS		
Unit price #01: Replacement of existing deteriorated Blocking and Nailers.	Per board foot	$
Unit price #02: Replacement of Existing Batt Insulation.	Per square foot	$
Unit price #03: Rehabilitation of Existing Wood Roof Decking.	Per board foot	$

Unit price #04: Rehabilitation of Existing Plywood Roof Decking.	Per square foot	$
Unit price #05: Rehabilitation of Existing Wood Roof Framing.	Per board foot	$
Unit price #06: Wet Roof Material Removal and Replacement*, (Associated with Alternate 01)	Per square foot	
**Note: include in the base bid all wet insulation within 12" of the paint marks. Unit costs begin 12" outside the existing marks*		

Contractor Owner / Officer _____

Title _____

Address _____

City, State Zip _____

Signature of Offeror: _____

Printed Name of Above: _____

(AFFIX CORPORATE SEAL)

The bidder hereby acknowledges receipt of the following addenda:

Addendum No._____Dated_____

Addendum No._____Dated_____

Addendum No._____Dated_____

Appendix B

Must be include with the proposal

PROPOSAL CERTIFICATION

I certify that I have read and understand the terms and conditions herein except as stated below. I further state that I am and/or my company is capable, able to, and will provide the requested products and/or service described herein. I am the owner or agent of the company stated below and am authorized and empowered to contract. By my signature on this RFP, I/we guarantee and certify that all items included in my bid meet or exceed specifications.

I certify that this quotation is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a quotation for the same materials, supplies, equipment, or services and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of State and Federal Law and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of the quotation and certify that I am authorized to sign this quotation for the Contractor.

SUBMITTED BY_____ DATE _____

TITLE_____EMAIL: _____

COMPANY NAME_____

ADDRESS_____CITY_____ST_____ZIP_____

TELEPHONE NUMBER_____FAX NUMBER_____

COMPANY WEBSITE _____

SIGNATURE _____

Appendix C

Must be included with this proposal

Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

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

_____ _____

Federal Work Authorization User Identification Number Date of Authorization

_____ _____

Name of Contractor Name of Project

_____

Name of Public Employer

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

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

_____

Signature of Authorized Officer or Agent

_____

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____,201__.

_____

NOTARY PUBLIC

My Commission Expires:

_____

PROJECT MANUAL

BYRON MUNICIPAL BUILDING ROOF PROJECT

BYRON, GA

RFP NUMBER 22.1

EDIFICE
CONSULTING, INC.
A Georgia Corporation

ISSUE DATE:
01/10/2022

ISSUED:
FOR CONSTRUCTION

EDIFICE PROJECT:
21CBGU01RR281

SECTION 00 0102

PROJECT DIRECTORY

PROJECT:

Byron Municipal Building Roof Project
401 Main Street
Byron, GA. 31008

OWNER:

City of Byron
401 Main Street
Byron, GA. 31008

OWNER RFP NUMBER 22.1

CONSULTANT:

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

Email: jody@edifice.biz

END OF SECTION

SECTION 00 0110

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PROJECT DIAGRAMS

Refer to Section 00 0115 - List Of Diagram Sheets.

END OF SECTION

SECTION 00 0115

LIST OF DIAGRAM SHEETS

KEY PLAN DIAGRAMS

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DIAGRAM A TYPICAL CURB OR SKYLIGHT FLASHING

END OF SECTION

SECTION 00 7200

GENERAL CONDITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract and other Division 01-48 Specification Sections, and drawing diagrams apply to this Section.

1.02 INTENT AND INTERPRETATION OF THE CONTRACT DOCUMENTS

A. The intent of these specifications is to describe the materials and methods of construction required for the performance of the work.

B. Where discrepancies exist in the contract documents, the more stringent requirement shall apply. Refer to contract documents for appropriate procedure to obtain clarifications.

1.03 DEFINITIONS

A. The term “Owner” is City of Byron and includes the Owners' authorized representative.

B. The terms “Consultant” and "Owners Representative" refer to Edifice Consulting

C. The term “Contractor” as used herein shall apply to the Proposer awarded a Contract to provide Work for this project. The term "Contractor" refers to the Contractor or the Contractors authorized representative for the project.

D. The "Contract" is the entire agreement between the Owner and Contractor which consists of the Contract Documents. The Contract only includes the Owner and the Contractor and can only be changed by written Change Order signed by both parties.

E. The term "Contract Documents" refers to the written construction contract or proposal, any required bonds, specific conditions of the contract, project Specifications, project Drawings, contract Change Orders, Owner accepted unit prices, and Owner accepted alternates.

F. The term "Defective Work" refers to materials or products that do not meet the specific requirements of the Contract Documents including their installation and performance.

G. The term "Project" is the entire body of work identified by the Contract Documents.

H. The term "Project Manual" identifies all written Contract Documents provided by the Owner and Consultant to be used by the contractor to perform the Work of this Project.

I. The term "Specifications" identifies the portion of the Contract Documents that identify, in writing, the standards of quality and performance for the products, materials, systems, and workmanship required to meet the Contract requirements for the Work of this project.

J. The term "Work" identifies the activities required by the Contract Documents for the Project. This includes all labor, materials, equipment, and other items and services needed by the Contractor to meet the requirements of the Contract for the Project.

1.04 OWNER REPRESENTATIVE STATUS

A. The Owner's Representative shall have general Rights of Inspection of the work and is the agent of the Owner in all matters pertaining to the work as provided in the Contract Documents.

B. The Owner's Representative has the authority to stop work whenever such stoppage may be necessary to ensure the proper execution of the contract and shall have authority to reject any and all materials, whether worked or unworked, if such materials are not in accordance with the plans and specifications.

1.05 VERIFICATION OF DIMENSIONS AND ELEVATIONS

A. Dimensions and elevations indicated on the drawings in reference to existing structures or utilities are the best available data obtainable but are not guaranteed by the Owner's Representative and the Owner's Representative will not be responsible for their accuracy.

B. Before proposing on any work dependent upon the data involved, the Contractor shall field check and verify all dimensions, grades, lines, levels or other conditions of limitations at the site to avoid construction errors.

C. If any work is performed by the Contractor or any of his/her sub-contractors prior to adequate verification or applicable data, any resulting extra cost for adjustment of work as required to conform to existing limitations, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

1.06 RESPONSIBILITY FOR MEASUREMENTS AND QUANTITIES

A. The bidding Contractor shall be solely responsible for all accuracy of all measurements and for estimating the material quantities required to satisfy these specifications.

1.07 PROTECTION

A. The Contractor shall use every available precaution to provide for the safety of property Owner, visitors to the site, and all connected with the work under the specification.

B. Existing facilities shall remain operating during the period of construction. All access roadways must remain open to traffic unless otherwise permitted.

C. In those areas where fluid or liquid materials will be raised to the work area, a protective covering shall be placed from the base of the wall extending up and over the top edge of the work. This coverage shall be wide enough to assure that the exterior walls do not become stained or soiled during work operations

D. Barricades shall be erected to fence off all construction areas from operations personnel.

1.08 HOUSEKEEPING

A. Keep materials neat and orderly.

B. Remove scrap, waste and debris from project area.

1.09 CONDITION OF SITE

A. The bidders shall visit the site before submitting their bids and determine the field conditions affecting their work. In considering the bids, the Owner will assume that the bidders are aware of all items, pertinent to their work and have made allowance for same in their bids.

1.10 INSPECTION

A. Where the drawings or specifications require the inspection and approval of any work in progress by the Owner's Representative, the Contractor shall give that Representative ample notice to allow for scheduling the inspection, which shall be made promptly to avoid delay of work. If work has progressed without the required inspections or approval by the Representative, it shall be uncovered for inspection at the Contractor's expense.

B. Uncovering of work not originally inspected, or uncovering questioned work may be ordered by the Owner's Representative and it shall be done by the Contractor. If examination proves such work to be incorrectly done or not done in accordance with the plans and specifications, the Contractor shall bear all cost of the reexamination. If the work is proven correctly installed, all such expense shall be borne by the Owner.

C. The contractor shall notify building Owner, in writing of any defects in the substrate, and work shall not proceed until defects have been corrected.

D. Do not install new materials until all unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions.

E. Check projections, curbs, and substrates for inadequate anchorage, foreign material, moisture, or unevenness that would prevent quality and execution of new system.

F. Start of work by the contractor shall imply approval of substrates and site conditions; and no claim in this respect will be considered valid in case of failure of the materials and components within the guarantee period.

G. In the event that such core cuts disclose any deficiency in materials, or soundness of construction, the Contractor shall, at his/her own expense, apply additional materials or otherwise correct the deficiencies to the satisfaction of the Owner's Representative.

H. Noncompliance with the terms of this specification and ensuing contract can result in either the cancellation of the contract, or complete replacement of the defective areas at the Contractor's expense. In the event of cancellation, the Owner will not be obligated to compensate the Contractor for any work undertaken in a defective manner.

I. Damages caused by water infiltration resulting from the failure of the Contractor to secure each day's work in a weather tight manner, will be corrected at the Contractor's expense. Included as damages will be all labor costs incurred by the Owner as a result of such water infiltration.

J. The Owner will require the Owner's Representative to examine the work in progress, as well as upon completion, in order to ascertain the extent to which the materials and procedures conform to the requirements of these specifications and to the published instructions of the Manufacturer.

K. The authorized Owner's Representative shall be responsible for:

1. Keeping the Owner informed on a periodic basis as to the progress and quality of the work;
2. Calling to the attention of the Contractor those matters he/she considers to be in violation of the contract requirements;
3. Reporting to the Owner any failure or refusal of the Contractor to correct unacceptable practices;
4. Conducting preliminary and subsequent job-site meetings with the Contractor's official job representative;
5. Rendering any other inspection services which the Owner may designate; and
6. Certifying, after completion of the work, the extent to which the Contractor has complied with these specifications as well as to the published instructions of the Manufacturing Company.

L. The presence and activities of the Owner's Representative shall in no way relieve the Contractor of his/her contractual responsibilities.

1.11 SAFETY PRECAUTIONS

A. All Owners' safety rules shall be adhered to in the execution of this work. Adequate protection shall be provided, to prevent burns and skin irritation, in accordance with safety requirements.

B. Safety Requirements

1. TORCHES OR ANY TYPE OF OPEN FLAME IS NOT PERMITTED ON THIS PROJECT.
2. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
3. Comply with federal, state, local and Owner fire and safety requirements.
4. Advise Owner whenever work is expected to be hazardous to Owner's employees and/or operations.
5. Maintain proper fire extinguisher within easy access whenever power tools are being used.
6. ALL SAFETY REQUIREMENTS OF THE OWNER MUST BE FOLLOWED. NO EXCEPTIONS WILL BE PERMITTED. SAFETY ORIENTATION MEETING REQUIRED PRIOR TO PERFORMING ANY WORK.
7. THE CONTRACTOR SHALL "HOLD HARMLESS" THE DESIGN PROFESSIONAL AGAINST ANY LITIGATION ARISING FROM ANY ACCIDENTS DURING THE COURSE OF THE CONTRACT.

C. The Contractor shall be responsible for guarding against fires, and shall provide suitable fire extinguishers conveniently located at the site.

D. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Owner and dispersed so as to present a minimum fire hazard.

E. Loads placed on the building at any point shall not exceed the safe load for which the building is designed.

F. Contractor shall conform to requirements as designated by the United States Federal Government (O.S.H.A.). Contractor shall abide by all regulations as outlined in the O.S.H.A. handbook and shall have a handbook on location at all times.

G. Contractors hereby acknowledged that they and their workers have undergone Safety Training and shall at all times act in compliance with all NRCA recommended safety compliance rules and regulations.

H. The Contractor shall properly notify all employees of conditions relating to work areas with very poor condition and which will be worked on. After such notification, the Contractor must take all necessary precautions to ensure the safety of his/her employees as well as the building personnel.

1.12 WORK AREA TRAFFIC

A. After work has started, no traffic will be permitted on the work area other than that necessary for the material application and inspection.

1. Materials shall not be piled on the work area or other parts of building to the extent that design live loads are exceeded.

1.13 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Proper storage on or off the site shall be the responsibility of the contractor.

B. Refer to the specified requirements of Sections 01-48 of this project manual.

1.14 WORK SEQUENCE

A. Once work is started on an area or section, it shall continue without undue delay until that section is completed before starting another.

B. Coordinate sequence of work with Owner prior to start of work.

1.15 MISCELLANEOUS UTILITIES

A. Electrical power will be furnished by the Owner for small tools only. All connections to the electrical system will be furnished by the Contractor.

B. The Owner will furnish potable water. Any connections to the water system shall be the responsibility of the Contractor.

C. At the completion of the work, or when the above connections are no longer required, the Contractor shall remove all connections and leave the facilities in a condition at least as satisfactory as prior to the commencement of his/her work.

D. The Contractor will provide toilet facilities.

1. The Contractor will be responsible for supplying a portable toilet on the job-site.
2. The Contractor's personnel are not permitted to enter the building without proper authorization from the Owner or Owner's Representative.

1.16 SITE SAFETY

A. The Owner requires the Contractor to take all steps necessary to ensure the safety of people on the project property in areas adjacent to the Contractor's work areas. The safety of all people in or around the project site is expected to be the Contractors highest priority at all times.

B. This includes, but is not limited to the following;

1. Preventing access to the work area.
2. Limiting access to areas adjacent to the work area. Use of safety mechanism such as warning signs, safety cones, safety fences, safety flags, etc.

1.17 CHANGES FOR EXTRA WORK

A. The Owner may, without invalidating the original contract, order such changes or additions as may from time to time be deemed desirable. In so doing, the contract price shall be adjusted, as stated below, with all work being done under the conditions of the original contract except for such adjustments in extension of time as may be acceptable to the Owner. The value of such extra work shall be determined in one of the following ways:

1. By firm price adjustment.
2. By cost plus with a guaranteed maximum.
3. By cost with a fixed fee.
4. By unit cost.

B. If agreement is reached that the extra cost shall be handled as per methods 2, 3, or 4, the Contractor shall keep and compile a correct amount of the cost together with such vouchers, etc., as may be necessary to substantiate same for presentation to the Owner.

C. The Owner's Representative shall have authority to make minor job changes or additions as may be necessary to expedite the job providing such changes do not involve additional material cost.

D. No major change or addition shall be made except upon receipt by the Contractor of a signed order from the Owner authorizing such a change. No claims for an extra to the contract price shall be valid unless so authorized.

1.18 CORRECTION OF WORK PRIOR TO FINAL PAYMENT

A. The Contractor shall promptly remove any work that does not meet the requirements of the plans and specifications or is incorrectly installed or otherwise disapproved by the Owner or the Owner's Representative as failing to meet the intent of the plans and specifications. The Contractor shall promptly replace any such work without expense to the Owner and shall bear the cost of making good all work of other contractors, or the Owner, destroyed or damaged by such removal or replacement.

1.19 DEDUCTION FOR UNCORRECTED WORK

A. If the Owner deems it unacceptable to have the Contractor correct work that has been incorrectly done, a deduction from the contract price shall be agreed upon therefore. Such a

deduction from the contract price shall in no way affect the Contractor's responsibility for defects that may occur nor his/her ability for correcting them, and damage caused by them.

1.20 CORRECTION OF WORK AFTER FINAL PAYMENT

A. The Contractor shall provide the specified warranties for this project in order to address deficiencies in the work of this project after the Owner makes final payment to the Contractor.

1.21 LIENS

A. The Contractor shall furnish the Owner with a release in full of all liens arising out of this contract or in lieu thereof, and receipts in full for all materials and labor on the job. In either case, the Contractor shall furnish an affidavit that the liens or receipts include all the labor and material for which a lien could be filed. In lieu of the above, the Contractor may at his/her option furnish a bond to indemnify the Owner against all hazards of liens. Neither part nor final payment shall in any way release the Contractor from the above obligation and in the event that part or full payment has been made and any lien remains un-discharged, the Contractor shall refund to the Owner the necessary funds to discharge such a lien including all cost and attorney's fees.

1.22 JOB CONDITIONS

A. There is NO SMOKING allowed on the project property, and the Contractor shall be responsible for enforcement of this job rule at all times with his/her personnel.

B. Ladders: Any ladders used on this project must be in good condition. The ladder must also be secured at high points at all times while in use in compliance with project regulations and codes. All ladders must be O.S.H.A. approved.

C. No drugs or alcoholic beverages are permitted on the grounds.

D. The Contractor shall place necessary barriers and/or protection around or under all work areas where his/her operations involve risk of injury to plant personnel.

E. The Contractor will also protect the building structure from damage in the process of the job. In the event that damage does occur to any property or equipment, or the Owner's work in process, notification must be made within two (2) working days of the incidents to the Owner and Owner's Representative.

F. During the progress of the job, if waste material and rubbish are found or damage resulting from the Contractor's operations is found, or the Contractor does not comply with the requirement by keeping the premises free of accumulations and correct the damage, it shall be the Owner's prerogative to hire personnel to do so; and the cost of this work will be deducted from the balance due the Contractor.

G. The Contractor is responsible for protecting all materials from the elements. If any material becomes wet, it cannot be installed and must be replaced at the Contractor's expense. NOTE: Materials must be covered with waterproof tarps at the end of each workday. Plastic wrappers supplied by the manufacturer are not acceptable substitutes for tarps. The Owner's Representative will reject any covering method or material that does not adequately protect materials.

H. Anyone guilty of willful destruction or unlawful removal of Owner's property will be dismissed from the job and is subject to prosecution by law.

I. The Contractor must verify that all materials can be installed to accommodate the building design, governing codes and regulations, and the manufacturer's current recommendations. In the event of a conflict the more stringent shall govern.

J. The Contractor will ensure that all substrates are clean, dry, sound, smooth, and free of dirt, debris, and other contamination before any materials are supplied.

1.23 WORKMANSHIP

A. All materials will be securely fastened and placed in a watertight, neat and workmanlike manner. All workmen shall be thoroughly experienced in the particular class or work upon which they are employed. All work shall be done in accordance with these specifications and shall meet the approval of the Owner or Owner's Representative. The Contractor's representative or job supervisor shall have a complete copy of specifications and drawings on the job-site at all times.

B. Contractor shall plan and conduct the operations of the work so that each section started on one day is complete and thoroughly protected before the close of work for that day.

1.24 WORK HOURS AND DAYS

A. When the Contract is awarded, the Contractor will contact the Owner's Representative to arrange the work schedule and the hours of the day that the workers may be on the building.

1.25 COMPLIANCE WITH LAWS

A. The Contractor shall give notices, pay all fees, permits and comply with all laws, ordinances, rules and regulations bearing on the conduct of work.

1.26 OWNER'S RULES

A. The Contractor and all his/her personnel/agent(s) shall abide by all rules created by the Owner.

B. The Contractor must contact the Owner's Representative for specific information regarding the rules governing all operations of the project.

1.27 ANTI-DISCRIMINATION IN EMPLOYMENT

A. Contractors and subcontractors shall not discriminate against any employees or applicant for employment, to be employed in performance of his/her contract, with respect to his/her hire, tenure, terms, conditions or privileges of employment because of his/her race, color, gender, sexual preference, religion, national origin, or ancestry.

1.28 FINAL INSPECTION

A. System and Material Warranties: Upon completion of the installation, an inspection shall be made by a representative of the system manufacturer to ascertain that the system has been

installed according to the system warrantor's published specifications and details. The warranty will be issued upon approval of the installation and payment for all materials and fees.

1.29 ADJUSTMENT AND REPAIR

A. Any damaged or misapplication materials shall be repaired or replaced as designated by the building Owner and system warrantor. Repair or replacement will be completed by the contractor at no expense to building Owner.

1.30 DISCREPANCIES AND ADDENDA

A. Should a Bidder find any discrepancies in the Drawings and Specifications, or should he be in doubt as to their meaning, he/she shall notify the Owner's Representative at once, who will send a written Addendum to all Bidders concerned. Oral instructions or decisions, unless confirmed by Addenda, will not be considered valid, legal or binding.

B. No extras will be authorized because of the Contractor's failure to include work called for in the Addenda in his/her bid.

C. It shall be the responsibility of all Bidders to call to the Owner's Representative's attention at the pre bid meeting, any discrepancies which may exist between or with any of the contract documents, or any questions which may arise as to their true meaning.

D. Modifications to the specifications (if necessary) will be followed by an addendum; no verbal discussions or agreements shall be recognized.

1.31 TERMINATION BY THE OWNER FOR CAUSE

A. The Owner may terminate the Contract and finish the work by whatever reasonable method he/she deems necessary if the Contractor:

1. Persistently or repeatedly refuses to supply specified materials or to provide enough skilled workers to ensure the project will be completed within the time period indicated on his/her Bid form;
2. Is guilty of substantial breach of any provision of the project documents.

1.32 TAXES

A. Contractor must comply with all state, federal and local taxes. The Contractor shall accept sole and exclusive responsibility for any and all state and federal taxes with respect to Social Security, unemployment benefits, withholding taxes and sales taxes.

1.33 BUILDING PERMITS

A. The acquisition of the applicable permits and associated costs to obtain said permits will be the responsibility of the successful Contractor.

1.34 JOB COORDINATION

A. Contractor is responsible for daily communication with the Owner or Owner's Representative relating to areas of work in order that the Owner may adequately protect tenant's personal belongings, and the people themselves against possible damage or injury. Contractor is also responsible for policing and protecting areas involving removal and replacement of penetrations, projections, appurtenances, and defective substrates.

B. Seventy-two hours prior to starting of the project and/or delivery of materials, the Contractor shall notify the designated Owner’s Representative.

1.35 CLEAN-UP

A. Accumulated debris shall be removed periodically to assure maximum safety and sanitation at all times. At completion of work, the Contractor shall remove all excess material and debris from the site and leave all surfaces free from accumulations of dirt, debris and other extraneous materials. The Contractor shall also remove any and all drippage of fluid materials from the face of the buildings, floor, window, ladders and other finished surfaces.

1.36 SUPERINTENDENT

A. The Contractor shall keep a competent non-working, English language speaking superintendent, satisfactory to the Owner and Owner's Representative, on the job at all times when work is in progress. The superintendent shall not be changed without notifying the Owner and the Owner's Representative.

B. The superintendent shall attend all meetings beginning with the pre-installation meeting.

C. The superintendent shall represent the Contractor in his/her absence and all directions and instructions given to the superintendent shall be as binding as if given directly to the Contractor.

D. The superintendent shall be responsible for the conduct of all the Contractor's employees on the premises and shall promptly take necessary measures to correct any abuses called to his/her attention by the Owner.

1.37 ACCEPTABILITY OF COMPLETED WORK

A. The acceptability of completed work will be based on its conformance to the contract requirement.

B. The Owner and Owner’s Representative are not obligated to accept non-conforming work, and such non-conforming work may be rejected.

1. The rejected work shall be promptly replaced or corrected in a manner and by methods approved by the Owner’s Representative at the Contractor's expense.

C. The Owner’s Representative will review the proper methods of installation with the Contractor's foreman and work crew and will review the work.

D. Any deficiencies in the work found by the Owner’s Representative will be reported to the Owner, along with recommended corrective actions.

E. The Owner’s Representative does not act in a supervisory capacity, and will not be responsible for the Contractor's errors or omissions.

END OF SECTION

SECTION 01 1113

SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Miscellaneous Provisions.

1.03 BASE BID WORK SUMMARIES

A. Refer to project Key Plans and Diagrams, as well as remainder of project manual for additional requirements.

B. Work at South Wing Section 1:

1. Remove existing shingle roof system including, but no limited to; underlayments, flashing and accessories to the existing wood deck.
2. Replace any existing defective decking and framing. Refer to Section 01 2200 - Unit Prices.
3. Fabricate and install new area divider extension to the ridge. Refer to project Diagram 5.
4. Install new recovery board and new aluminum infused PVC roof membrane system.
5. Install new flashings and trim.
6. Install new PVC roof membrane system simulated metal roof profile bars.

C. Work at South Wing Section 2:

1. Remove existing shingle roof system including, but no limited to; underlayments, flashing and accessories to the existing wood deck.
2. Replace any existing defective decking and framing. Refer to Section 01 2200 - Unit Prices.
3. Install new insulation to match the combined thickness of the existing insulation package and roof membrane at existing modified bitumen roof system.
4. Prepare the existing modified bitumen roof membrane system for new to existing roof tie-in.
5. Install new two ply SBS modified bitumen roof membrane system.
6. Deliver existing roof system warranty modification certification to Owner from the existing roof system manufacturer.

a. Existing Roof System Manufacturer: Johns Manville, Inc., a Berkshire Hathaway Company.

1.04 MISCELLANEOUS PROVISIONS

A. Without exception, no product or material used on the Project will contain asbestos. Contractor is responsible for providing Consultant with manufacturer's written technical data for questionable items. If installed materials are found to contain asbestos, these materials will be removed and replaced with acceptable materials at Contractor's expense.

B. Prior to Substantial Completion, inspect, test and adjust performance of every system of the Work to ensure that overall performance complies with the Project Specifications.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 2200

UNIT PRICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

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

1.03 DEFINITIONS

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

1.04 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

1. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

C. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Replacement Of Existing Deteriorated Wood Blocking And Nailers.

1. Description: Remove and replace deteriorated and/or damaged wood blocking and/or nailers according to Section 06 1053 - Miscellaneous Rough Carpentry.

2. Unit of Measurement: Cost per board foot of blocking and/or nailers based on board feet of blocking and/or nailers removed.
3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
4. Contractor to determine need for additional work in conjunction with this unit price and include in the unit price.

B. Unit Price No. 2: Replacement Of Existing Batt Insulation.

1. Description: Remove and replace deteriorated and/or damaged batt or blanket insulation to match existing.
2. Unit of Measurement: Cost per square foot of insulation based on square feet of insulation removed.
3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
4. Contractor to determine need for additional work in conjunction with this unit price and include in the unit price.

C. Unit Price No. 3: Rehabilitation of Existing Wood Plank Roof Decking.

1. Description: Remove and replace deteriorated and/or damaged wood decking according to Section 06 1053 - Miscellaneous Rough Carpentry.
2. Unit of Measurement: Cost per board foot of roofing materials based on quantity of existing roofing materials removed.
3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
4. Contractor to determine need for additional work and costs in conjunction with this unit price and include in the unit price.

D. Unit Price No. 4: Rehabilitation of Existing Plywood Roof Decking.

1. Description: Remove and replace deteriorated and/or damaged wood decking according to Section 06 1053 - Miscellaneous Rough Carpentry.
2. Unit of Measurement: Cost per square foot of roofing materials based on quantity of existing roofing materials removed.
3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
4. Contractor to determine need for additional work and costs in conjunction with this unit price and include in the unit price.

E. Unit Price No. 5: Rehabilitation of Existing Wood Roof Framing.

1. Description: Remove and replace deteriorated and/or damaged wood framing according to Section 06 1053 - Miscellaneous Rough Carpentry.
2. Unit of Measurement: Cost per board foot of roofing materials based on quantity of existing roofing materials removed.
3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.

4. Contractor to determine need for additional work and costs in conjunction with this unit price and include in the unit price.

F. Unit Price No. 6: Wet Roof Material Removal and Replacement.

1. Description: Removal and replacement of existing roof system materials due to deterioration, wetness and/or damage, as needed.
   a. Work for this Unit Price shall be as required by Alternate No. 1, if accepted.
   b. Refer to Section 02 2529 - Existing Roof System Moisture Assessment for additional requirements.
2. Unit of Measurement: Cost per square foot of roofing materials based on quantity of existing roofing materials removed. Includes all materials from the deck up.
3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
4. Contractor to determine need for additional work and costs in conjunction with this unit price and include in the unit price.

END OF SECTION

SECTION 01 2300

ALTERNATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This section includes administrative and procedural requirements for Alternates.

1.03 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.04 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

1. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Amount to be added to the Base Bid to install new KEE roof system at South Wing Section 2 and 3.

1. In lieu of the base bid scope at South Wing Section 2:
    a. Remove the shingle roof covering and underlayments, flashing and accessories to the wooden decking.
    b. Replace any defective decking and framing as a Unit Cost. Refer to the requirements of Section 01 2200.
    c. Mechanically attach manufacturer's recommended insulation package of a thickness equal to the combined thickness of the existing modified roof membrane and the existing insulation. Comply with the requirements of Section 07 5425.
    d. Install new KEE fleeceback roof membrane in accordance with Section 07 5416 - KEE Thermoplastic Membrane Roofing.
    e. Install new flashings and trim.
2. At Conference Center roof section:
    a. Perform third party moisture survey. Refer to the requirements of Section 02 2529 - Existing Roof System Moisture Assessment.
    b. Abate any existing wet thermal insulation and roofing.
    c. Install new KEE fleeceback roof membrane in accordance with Section 07 5416 - KEE Thermoplastic Membrane Roofing. Install directly to prepared surface of the existing modified bitumen roof.
    d. Re-use existing gutters and downspouts.

B. Alternate No. 2: Amount to be added to the Base Bid to provide masonry rehabilitation and water repellent work to existing chimney.

1. Description: Perform brick masonry rehabilitation and water repellent work to existing chimney.
    a. Refer to Section 04 0121 - Brick Masonry Rehabilitation, for additional requirements.
    b. Refer to Section 07 1923 - Siloxane Water Repellents, for additional requirements.
2. Unit of Measurement: Total lump sum for all work required as indicated.
3. Work for this Alternate shall be performed in accordance with the requirements of this project manual and other contract documents.
4. Contractor to determine need for additional work in conjunction with this Alternate and include in the Alternate price.

C. Alternate No. 3: Amount to be added to the Base Bid to demolish the existing masonry chimney.

1. Description: At locations indicated on Diagrams, demolish the existing masonry chimney to below the existing roof deck and framing. Install new framing and decking to match existing. Include new roof system to match adjacent system.
2. Work for this alternate shall be performed in accordance with the requirements of this project manual and other contract documents.
3. Contractor to determine need for additional work in conjunction with this Alternate and include in the Alternate price.

D. Alternate No. 4: Amount to be deducted for not supplying third party moisture survey associated with Add Alternate No 1.

1. Description: Deduct third party moisture survey ineicated in Alternate No 1.
2. Work for this alternate shall be performed in accordance with the requirements of this project manual and other contract documents.
3. Contractor to determine need for additional work in conjunction with this Alternate and include in the Alternate price.

3.02 MISCELLANEOUS PROVISIONS

A. Without exception, no product or material used on the Project will contain asbestos. Contractor is responsible for providing Consultant with manufacturer's written technical data for questionable items. If installed materials are found to contain asbestos, these materials will be removed and replaced with acceptable materials at Contractor's expense.

B. Prior to Substantial Completion, inspect, test and adjust performance of every material and system of the Project to ensure that overall performance complies with the Project Specifications.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 2500

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 01 6000 - Product Requirements: For requirements for submitting comparable product submittals for products by listed manufacturers.

1.03 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.04 SUBMITTALS FOR SUBSTITUTIONS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form acceptable to Consultant. Refer to Section 01 2503.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.

b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. Certificates and qualification data, where applicable or requested.

g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of Consultants and owners.

h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.

i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.

j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

k. Cost information, including a proposal of change, if any, in the Contract Sum.

l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.

m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Consultant's Action: If necessary, Consultant will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Consultant will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

   a. Forms of Acceptance: Change Order, Construction Change Directive, or Consultant's Supplemental Instructions for minor changes in the Work.

   b. Use product specified if Consultant does not issue a decision on use of a proposed substitution within time allocated.

1.05 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.06 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.07 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Consultant will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Consultant will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

b. Substitution request is fully documented and properly submitted.

c. Requested substitution will not adversely affect Contractor's construction schedule.

d. Requested substitution has received necessary approvals of authorities having jurisdiction.

e. Requested substitution is compatible with other portions of the Work.

f. Requested substitution has been coordinated with other portions of the Work.

g. Requested substitution provides specified warranty.

h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Consultant will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Consultant.

1. Conditions: Consultant will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Consultant will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Consultant for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

b. Requested substitution does not require extensive revisions to the Contract Documents.

c. Requested substitution is consistent with the Contract Documents and will produce indicated results.

d. Substitution request is fully documented and properly submitted.

e. Requested substitution will not adversely affect Contractor's construction schedule.

f. Requested substitution has received necessary approvals of authorities having jurisdiction.

g. Requested substitution is compatible with other portions of the Work.

h. Requested substitution has been coordinated with other portions of the Work.

i. Requested substitution provides specified warranty.

j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

C. Design, material, and construction not approved as a substitution shall be considered as non-compliant with the Construction Documents. Installed work, not approved as a substitution, shall be the responsibility of the Contractor for removal. If removal is not possible for Life Safety considerations, Contractor shall refund to Owner the cost of the work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 2503

SUBSTITUTION REQUEST FORM

Project:_____ Substitution Request Number:_____

_____ From:_____

To:_____ Date:_____

_____ Consultant Project Number:_____

Specification Section Title: _____

Specification Section #: _____ Page#:_____

Article or Paragraph #: _____

General Description of Product & Application: _____

_____

Proposed Substitution: _____

_____

Reason for Substitution: _____

_____

Manufacturer Name:_____ Website: _____

Manufacturer Contact (for submitted product): _____ Contact Email: _____

☐ Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request. Applicable portions of the data are clearly identified. *Attach additional sheets to provide required substitution request information.*

☐ Attached data includes a description of Contract Documents changes that proposed substitution will require for its use and proper installation.

The Undersigned certifies:

☐ Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.

☐ Same warranty will be furnished for proposed substitution as for specified product.

☐ Same maintenance service and source of replacement parts, as applicable, is available.

☐ Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.

☐ Proposed substitution does not affect dimensions and functional clearances.

☐ Payment will be made for changes to building design, including design, detailing, and construction costs caused by the substitution.

☐ **This substitution request form is complete and complies with all requirements of Section 01 2500 – Substitution Procedures. Provide additional requirements as an attachment to this form. Failure to comply with all requirements shall result in rejection of substitution request.**

Submitter Name:: _____(printed name)

Submitter Signature: _____(signature)

Company Name: _____ Telephone:_____

Address:: _____ Company Email:_____

CONSULTANT REVIEW AND ACTION

☐ Substitution Approved: Provide submittals in accordance with Specification Section 01 3300 - Submittal Procedures.

☐ Substitution Approved as Noted: Provide submittals in accordance with Specification Section 01 3300 - Submittal Procedures.

☐ Substitution Rejected: Information provided is incomplete and/or does not comply with Substitution requirements. Use specified materials.

☐ Substitution Rejected: Substitute not acceptable for use on project. Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Consultant Signature: _____

Consultant Printed Name: _____

Type of Supporting Data Attached: ☐ Drawings ☐ Details ☐ Product Data Sheets ☐ Material Samples ☐ Test Data ☐ Test Reports

END OF SECTION

SECTION 01 2900

PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Progress Payments.

B. For Final Payments, refer to specification Section 01 7700, “Closeout Procedures”.

1.03 DEFINITIONS

A. Progress Payment: Any payment made by the Owner to the Contractor prior to Final Payment at project closeout.

B. Final Payment: The payment made by the Owner following successful project closeout.

C. Applications for Progress Payments: The documentation used to request a payment by the Owner prior to Final Payment. Refer to procedures in this specification section.

D. Project Closeout: The procedures used to complete the project in its entirety and execute Final Payment from the Owner to the Contractor for Work performed. Refer to specification Section 01 7700, “Closeout Procedures”.

E. Retainage: Portion of the agreed upon contract price that will be withheld until all conditions of Section 01 7700, “Closeout Procedures” has been met.

1.04 SCHEDULE OF VALUES FOR PROGRESS PAYMENTS

A. Payments made by the Owner prior to Final Payment at Project Closeout must be submitted as required by this specification section. Requests for payment that do not follow the format and requirements of this specification section will be rejected and not paid.

1. The Owner will withhold a Retainage amount of 15% of the total Contract value regardless of the percentage of project completion.
2. Applications for Progress Payments that include the final 15% of total Contract value will not be paid.

B. Coordination: Coordinate preparation of a Schedule of Values for progress payments with the project construction schedule and the Owners accounts payable schedule.

1. Submit the Schedule of Values no later than seven days before the Owners monthly accounts payable deadline.

C. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each specification section.

1. Identification: Include the following Project identification information on the Schedule of Values for Progress Payments:
    a. Project name and location.
    b. Name of Owner.
    c. Owners project number.
    d. Name of Consultant.
    e. Contractor's name and address.
    f. Date of document submittal.
2. Arrange the Schedule of Values for Progress Payments in tabular form with separate columns to indicate the following for each item listed:
    a. Related Specification Section or Division.
    b. Detailed description of the Work that payment is requested for.
    c. Name of subcontractor, if applicable.
    d. Name of material manufacturer or fabricator.
    e. Name of material supplier.
    f. Any contract items such as Unit Prices, Alternates, Allowances, or Change Orders that affect value. List the specific applicable contract item number.
    g. Total dollar value of payment request as well as the percentage of the total Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Progress Payments. Coordinate with the Project Manual table of contents.
    a. Payment requests that do not provide adequate detail for the Owner to review will not be approved.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Do not include materials or equipment purchased or fabricated and stored, but not yet installed.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the Schedule of Values for Progress Payments shall be complete.

1.05 APPLICATIONS FOR PROGRESS PAYMENT

A. Each Application for Progress Payment shall include the Schedule of Values for Progress Payment and be consistent with previous applications and payments paid for by Owner.

B. Payment Application Schedule: The date for each progress payment is on a 30-day payment schedule established by the Owner.

C. Transmittal: Submit three signed and notarized original copies of each Application for Progress Payment to Owner by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

D. Waivers of Lien: With each Application for Progress Payment, submit waivers of lien from every entity who is lawfully entitled to file a lien arising out of the Contract and related to the Work covered by the payment.

1. When an application shows completion of an item, submit final or full waivers.
2. Owner reserves the right to designate which entities involved in the Work must submit waivers of lien.
3. Submit each Application for Payment with Contractor's waiver of mechanic's lien for construction period covered by the application.

E. Final Payment Application: Refer to Section 01 77 00, “Closeout Procedures”.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 3100

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination Drawings.
2. Project meetings.
3. Requests for Interpretation (RFI).

B. Related Sections include the following:

1. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.03 DEFINITIONS

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

1.04 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

C. Preparation of Contractor's Construction Schedule.

1. Preparation of the Schedule of Values.
2. Delivery and Processing of Submittals.
3. Progress Meetings.
4. Pre-installation Conferences.
5. Project Closeout Activities.

1.05 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

B. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Consultant, Architect, and General Contractor of scheduled meeting dates and times.

C. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

D. Minutes: Record significant discussions and agreements achieved.

1. Distribute the Meeting Minutes to everyone concerned, including Owner and Consultant, within three (3) days of the meeting.

E. Preconstruction Conference: Schedule a Preconstruction Conference before starting construction, at a time convenient to Owner and Consultant, but no more than ten (10) days prior to start commencement of work. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Consultant, Contractor, and relevant subcontractors shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Tentative construction schedule.

b. Critical work sequencing and long-lead items.

c. Designation of key personnel and their duties.

d. Procedures for processing field decisions and Change Orders.

e. Procedures for RFI’s.

f. Procedures for testing and inspecting.

g. Procedures for processing Applications for Payment.

h. Use of the premises and existing building.

i. Work restrictions.

j. Owner's occupancy requirements.

k. Responsibility for temporary facilities and controls.

l. Construction waste management and recycling.

m. Parking availability.

n. Work and storage areas.

o. Equipment deliveries and priorities.

p. First aid.

q. Security.

r. Progress cleaning.

s. Working hours.

3. Minutes: Record and distribute meeting minutes.
4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

F. Progress Meetings: Contractor is required to be present at any project progress meetings requested by the Owner and/or Consultant.

1. The location, time and agenda for Progress Meetings will be set by the Owner and/or Consultant.
2. Contractor shall have their Project Superintendent and any other personnel or representatives present, as requested by the Consultant.

1.06 REQUESTS FOR INTERPRETATION (RFI)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

1. RFI shall originate with Contractor. RFI submitted by entities other than Contractor will be returned with no response.
2. Coordinate and submit RFI in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
4. Name of Consultant.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.
9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
10. Contractor's signature.

C. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings and other information necessary to fully describe items needing interpretation.

D. Consultant's Action: Consultant will review each RFI, determine action required and return it. Allow seven (7) working days for Consultant's response for each RFI. RFI’s received after 2:00 P.M. EDST will be considered as received the following working day.

1. The following RFI will be returned without action:
    a. Requests for approval of submittals.

b. Requests for approval of substitutions.

c. Requests for coordination information already indicated in the Contract Documents.

d. Requests for adjustments in the Contract Time or the Contract Sum.

e. Requests for interpretation of Consultant's actions on submittals.

f. Incomplete RFI's or RFI's with numerous errors.

2. Consultant's action may include a request for additional information, in which case Consultant's time for response will start again.

3. Consultant's action on RFI's that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section "Contract Modification Procedures."

4. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Consultant in writing within ten (10) days of receipt of the RFI response.

5. On receipt of Consultant's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Consultant within seven (7) days if Contractor disagrees with response.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 3300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes:
   1. Administrative and procedural requirements for submittals.

B. Related requirements:
   1. Refer to specification Section 01 2900 - Payment Procedures, for progress payments required prior to project closeout and Final Payment.
   2. Refer to specification Section 01 7700 - Closeout Procedures, for submittals required at project completion.

1.03 SUBMITTALS, GENERAL

A. Submittals: Includes items indicated in specifications as Shop Drawings, Submittals, Warranty Submittals, and Closeout Submittals. Unless noted otherwise all submittals shall conform to the requirements of this section and as indicated in individual specification sections.
   1. A required submittal is a project requirement, whether or not the required submittal item is otherwise mentioned in the project documents.
   2. Contractor shall provide additional submittal items, including shop drawings, when requested by Owner.
   3. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
   4. Any cost associated with submittals shall be paid by the Contractor.

B. Consultant Review:
   1. Consultant review or corrections refer only to the general arrangement and conformance of the subject of the submittals with the design concept of the project and with the information given in the Contract Documents. Under no conditions should the Contractor consider the review to include the dimensions, quantities, and details of the items nor the approval of an assembly in which the item functions.
   2. Consultant review shall not relieve the Contractor from responsibility for errors or omissions in the submittals.
   3. Consultant review of submittals shall not relieve the Contractor of direct responsibility for any deviation from the requirements of the Contract Documents unless the

Contractor has directed specific attention to the deviation at the time of submission and the Consultant and/or Owner has provided written approval to the specific deviation.

4. Consultant review of submittals shall not be construed as authorization to change the Contract Sum or Contract Time.
5. Consultant will return submittals received from sources other than Contractor without review.

C. Submittals not required by the Contract Documents will be returned by Consultant without action, unless noted otherwise.

1.04 SUBMITTALS FORMAT

A. Format: Provide all submittals in the following format, unless indicated otherwise.

1. Number of Complete Submittal Sets: One (1), unless indicated otherwise. Provide duplicate items within each submittal set as indicated (i.e. color charts, etc).
2. Provide all submittals on 8.5 by 11 inch paper. Only single sided printing is permitted. Duplex (double sided) submittals will be returned for resubmittal.
3. Use a cover page to separate and clearly identify each submittal. Cover page shall clearly list project name, Owner's project number, Consultant's project number, contractor company name, submittal number, and submittal title. Submittals without cover pages will be rejected, with no further review.
4. Cause all pages of each individual submittal to be connected to the cover page.
5. Product data sheets with multiple product listing shall have the product submitted clearly marked and otherwise identified.
6. Do not staple, fold, spindle, bend, hole-punch, or otherwise physically alter the paper on which the submittal is printed in any way that would slow or jam a high-speed scanner. Properly package submittals to protect them during shipping. Damaged documents will be returned without review.
7. Provide electronic copy of each submittal as internet based download from cloud based provider (i.e. Microsoft One Drive, Dropbox, or similar) or on an external data drive. Electronic files shall be in Adobe PDF format.

B. Order:

1. Organize submittals in the order that each submittal requirement appears in the project manual. Place in ascending order by specification section number.
2. Place Owner required procurement and contracting submittal documents before submittals required in Sections 01-44 of the project manual.
3. Multiple page submittals shall be submitted in sequential page order.

1.05 SUBMITTALS REQUIRED

A. Submittals Prior to Mobilization: Refer to Section 01 3307.

B. Submittals During Work: Refer to Section 01 3309.

1.06 ADDITIONAL SUBMITTAL REQUIREMENTS

A. Provide any additional shop drawings and any other submittal items requested by the Owner, the Owner's Consultant or Owner's Representative.

B. Additional submittal requirements may result from, but are not limited to, the following: Work related to project Unit Prices, Alternates, Owner requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 3307

SUBMITTALS, PRIOR TO MOBILIZATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes submittals required prior to mobilization for the Work of this Project.

1.03 SUBMITTALS, GENERAL

A. Comply with the requirements of Section 01 3300 - Submittal Procedures.

1.04 DUE DATE AND DELIVERY

A. Due: Minimum five business days prior to project preconstruction meeting.

B. Deliver To: Tonia Letice, Edifice Consulting, Inc., P.O. Box 1060, Byron, GA. 31008

1.05 SUBMITTALS REQUIREMENTS PRIOR TO MOBILIZATION

A. General Content:
   1. Insurance Certificate(s) with the Owner named as “additionally insured”.
      a. Liability Insurance.
      b. Worker’s Compensation Insurance.
   2. A list of subcontractors that will be utilized on the project.
   3. Proposed project schedule.
   4. Provide copy of specified Performance and Payment Bond equal to 100 percent of total project value.

B. Technical Content: Provide submittals required in the following individual Division 02-44 specification sections::
   1. 02 2529 - Existing Roof System Moisture Assessment.
      a. For use only where awarded by Alternate.
   2. 02 4119 - Selective Roof Demolition.
   3. 04 0121 - Brick Masonry Rehabilitation.
   4. 07 1923 - Siloxane Water Repellents.
   5. 07 5219 - SBS-Modified Bituminous Membrane Roofing.
   6. 07 5425 - PVC Metallic Thermoplastic Membrane Roofing.

7. 07 6200 - Sheet Metal Flashing And Trim.
8. 07 9200 - Joint Sealants.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 3309

SUBMITTALS, DURING WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes submittals required during the Work of this Project.

1.03 SUBMITTALS, GENERAL

A. Comply with the requirements of Section 01 3300 - Submittal Procedures.

1.04 SUBMITTAL REQUIREMENTS DURING WORK

A. Due: Within three (3) business days of all third party site visits.

B. Format and delivery: Electronic Adobe PDF format.

1. Deliver to by email to Chuck Kilgore, Edifice Consulting: chuck@edifice.biz.

C. Content:

1. One (1) copy of any third party field inspection reports.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 4000

QUALITY ASSURANCE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes requirements for quality control on this project.

1.03 QUALITY CONTROL

A. Contractor shall:
   1. Be experienced and well versed in:
      a. PVC Membrane Roofing, fully adhered systems.
      b. Modified Bitumen Roofing, Cold adhesive applied.
      c. Installation of exterior surface applied water repellents.
      d. Brick masonry rehabilitation.
      e. Joint sealant installation.
      f. Working in government owned public safety facility environments.
   2. Be acceptable to Owner.
   3. Have operated under the same name, without court order protection from creditors, for no less than seven years.
   4. Be approved by the manufacturer issuing the warranty, for the proposed system, a minimum of two years prior to the bid date.

1.04 SUBMITTAL REQUIREMENTS CONSTITUTE QUALITY CONTROL REQUIREMENTS

A. Submittal requirements in this project manual constitute quality control requirements for the project. Anything required as a submittal is understood to be a requirement for the project.

1.05 RANDOM SAMPLING

A. During course of work, Owner and Owner's Representative, may secure samples of materials being used from containers at job site and submit them to an independent laboratory for comparison to specified material.

B. If test results prove that a material is not functionally equal to specified material:
   1. Contractor shall pay for all testing.

2. Work will be replaced with material that meets the standard, at the Contractors full expense.

PART 2 - PRODUCTS

2.01 GENERAL

A. Comply with Quality Control, specification, and manufacturer data. Where conflict may exist, more stringent requirements govern.

B. Provide primary products, miscellaneous flashing materials, and accessory components from a single manufacturer, which has produced that type of product successfully for not less than three (3) years. Provide secondary products (mechanical fasteners, etc.) only as recommended by manufacturer of primary products for use with system specified.

PART 3 - EXECUTION

3.01 SUBMITTALS

A. Meet submittals requirements listed in Section 01 3324 of this project manual.

END OF SECTION

SECTION 01 4200

REFERENCES

PART 1 - GENERAL

1.01 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.02 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents. Any date listed shall be superceded by standards in effect as of date of Contract Documents.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents and shall be obtained by the Contractor.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.03 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized industry standard name of the entities and as indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." The abbreviations used in the Contract Documents are subject to change and are believed to be accurate as of the date of the Contract Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 6000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.02 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Specification Requirement: A specification in which a single manufacturer's product or characteristic is named and accompanied by the words "basis-of-design" or "basis-of-design product," including style, type, make, model number or other designation.

1. Published attributes and characteristics of basis-of-design products establish salient characteristics of products. Basis-of-design selections indicated characteristics deemed desirable for use on the project which may include one or more of the following characteristics; aesthetic appearance, performance characteristics, color, or other.
2. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.
    a. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.

3. Where conflict exists between indicated basis-of-design products, specified performance characteristics, and requirements of applicable codes, regulations, and authorities having jurisdiction; the more stringent requirement(s) shall apply.
    a. Contractor shall include the more stringent requirement and notify Consultant of discrepancy for coordination and resolution.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product.
1. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request.
2. In the event that a named manufacturer does not offer products to to meet the requirements of the specifications, select another product from another non-named manufacturer that does meet the requirements of the specifications; submit a substitution request.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 01 3300 - Submittal Procedures.

F. Substitution: Refer to Section 01 2500 - Substitution Procedures, for definition and limitations on substitutions.

1.03 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

1.05 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on

product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Owner or Owner Representative will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 2500 - Substitution Procedures, for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require the phrase "match existing", provide a product that complies with requirements and matches existing materials as indicated by Owner or Owner Representative. Owner or Owner Representative's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 2500 - Substitution Procedures, for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Owner from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Owner or Owner Representative will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Owner or Owner Representative will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner or Owner Representative may return requests without action, except to record noncompliance with the following requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects, with project names and addresses and names and addresses of Owner or Owner Representatives and owners, if requested.
5. Samples, if requested.

B. Owner or Owner Representative's Action on Comparable Products Submittal: If necessary, Owner or Owner Representative will request additional information or documentation for evaluation.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 7700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

1.03 PROJECT CLOSEOUT SUBMITTALS

A. Close out Submittals: Two (2) copies of close out submittals of which receipt and acceptance are pre-requisites for final payment shall include, but not necessarily be limited to, the following:

1. Copies of all project landfill receipts from certified county landfill.
2. Evidence of Payments and Release of Liens.
3. Contractors Warranty.
4. Manufacturers Warranty.
5. Final Application for Payment.

1.04 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting a Final Inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list and reasons why the Work is not complete.
2. Prepare and submit project record documents, operation and maintenance manuals, and any requested final completion construction drawings.
3. Deliver any requested extra materials and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
4. Terminate and remove temporary facilities from Project site, including mockups, construction tools, and similar elements.

5. Complete all final cleaning requirements, including touchup painting.
6. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

1.05 FINAL INSPECTION

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

1.06 WARRANTIES

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

1.07 LIST OF INCOMPLETE ITEMS

A. Preparation: Following the Final Inspection the Consultant will prepare a list of incomplete (Punch List) items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

B. Re-Inspection: After completion of Punch List items, submit a written request to the Consultant for re-inspection. Final Application for Payment cannot be issued until all items have been satisfactorily completed.

1.08 FINAL COMPLETION

A. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications and similar documents.

B. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction drawings.

C. Provide a complete set of As-Built drawings, which vary from the original contract documents showing all locations where modifications and alterations where made, deck infill, equipment removed, etc.

1.09 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

A. Contractor shall submit:
   1. Contractor’s Affidavit of Payment of Debts and Claims
   2. Contractor’s Affidavit of Release of Liens.
   3. Consent of Surety to Final Payment.

B. All submittals shall be duly executed before delivery to the Consultant.

1.10 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit final statement of accounting to the Consultant. Statement shall reflect all adjustments, including, but not necessarily limited to, the following:

1. Original Contract Sum.
2. Additions and deductions resulting from:
3. Previous change orders.
4. Cash allowances.
5. Unit Prices.
6. Other adjustments.
7. Deductions for uncorrected work.
8. Penalties and bonuses.
9. Deductions for liquidated damages.
10. Total Contract Sum, as adjusted.
11. Previous payments.
12. Sum remaining due.

B. The Consultant will prepare final change order, rejecting approved adjustment to Contract Sum not previously made by change order.

1.11 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit final application in accord with requirements of General and/or Supplementary Conditions, and all applicable requirements of this project manual.

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

1.12 FINAL CERTIFICATE FOR PAYMENT

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

PART 2 - PRODUCTS

2.01 MATERIALS

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

PART 3 - EXECUTION

3.01 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

1. Clean Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits.
3. Remove tools, construction equipment, machinery and surplus material from Project site.
4. Remove discarded fasteners, metal trimmings, and other construction debris from work areas.
5. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
6. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

C. Comply with safety standards for cleaning. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 02 2529

EXISTING ROOF SYSTEM MOISTURE ASSESSMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:

1. Roof system moisture assessment.

B. Refer to Division 01 specification section “Summary of Work” for specific work to be included in the Base Bid. Coordinate Base Bid work summary with the requirements of Division 01 specification sections “Unit Prices” and “Alternates”.

1.03 THIRD PARTY MOISTURE ASSESSEMENT WORK

A. Third party moisture survey work is as follows;

1. Contractor to provide third party moisture survey to identify currently wet roof system materials to be replaced by Unit Price.
    a. The third party moisture survey shall be in strict compliance with ASTM D7954, Standard Practice for Moisture Surveying of Roofing and Waterproofing Systems Using Non-Destructive Electrical Impedance Scanners.
    b. The third party moisture survey will be used to define the extent of additional wet abatement work.
    c. Contractor to provide painted outlines of suspected wet areas on the existing roof surface.
    d. Wet abatement within 12-inches of the contractor provided painted outlines is to be included in the Base Bid.
    e. Wet insulation and roofing more than 12-inches outside the painted lines will be paid on a unit cost basis. Refer to Section 01 2200 - Unit Prices.

1.04 SUBMITTALS

A. Contractor to provide separate drawn roof plan (8-1/2"x 11" paper) with suspected wet areas clearly identified.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02 4119

SELECTIVE ROOF DEMOLITION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:

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

1.03 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

D. Replace: Remove items of existing construction, dispose of materials off- site, unless otherwise indicated and install new material as indicated.

1.04 SUBMITTALS

A. Site Plan: Showing:

1. Vegetation to be protected.
2. Areas for temporary and permanent placement of removed materials.
3. Indicate proposed locations and construction of barriers.

B. Demolition Plan: Submit demolition plan as required by OSHA and local authorities including the following:

1. Extent of demolition.
2. Removal sequence.
3. Adjacent Buildings: Indicate special measures proposed to protect adjacent buildings to remain including means of egress from those buildings.

C. Predemolition Photographs or Video: At Owner Representative's request provide photographs showing existing conditions of adjoining construction and site areas, including finish surfaces,

that could be misconstrued as damage caused by the Work of this project including demolition operations.

1. Provide minimum 20 digital photos.

1.05 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Where noted, historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value (i.e. copper and other valuable metals) to Owner that may be uncovered during demolition remain the property of Owner. When the value or relevance of a particular item is not clear to the Contractor, it is the Contractors responsibility to request clarification from the Owner prior to removal and disposal.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.06 FIELD CONDITIONS

A. Existing site conditions are to be maintained by the Contractor during and through the completion of the project. Contractor shall restore all site conditions including landscaping, grassing, and planting to the pre-installation status upon completion of the work. Contractor shall include the furnishing of all necessary ground protection mats as necessary to protect the existing grounds during all phases of construction.

1. Notify Consultant of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
2. Storage or sale of removed items or materials on-site is not permitted.

B. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

C. Hazardous Materials: It is not expected that asbestos-containing materials will be encountered in the Work. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Consultant and Owner.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review any record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

1. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Consultant.

D. Survey of Existing Conditions: At Owner Representative's request record existing conditions by use of preconstruction photographs or videos.

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

E. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.02 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

4. Cover and protect furniture, furnishings, and equipment that have not been removed.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.03 DEMOLITION, EXISTING CONDITIONS

A. All existing materials and assemblies described herein are those expected to be encountered during the work of this project based on limited field observation.

1. The Owner, and Owner Representatives cannot verify the materials and configurations listed as “existing” on this project.
2. The Contractor and their representatives are required to verify all existing materials, products, systems, and conditions on this project prior to bid submittal, prior to executing the Contract to perform work, and prior to and during the time work is completed for the Project.

3.04 SELECTIVE DEMOLITION, GENERAL

A. Demolition Guidelines: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Evaluate all projections and penetrations to ensure that each item is secured to the building structure. Any item not considered to be secured to the structure shall be brought to the owner’s attention prior to job start, or immediately upon discovery during roofing operations.
2. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
3. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding not hammering, and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
5. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire- suppression devices during flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, animal-infested, or otherwise dangerous, or unsuitable materials and promptly dispose of off-site.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Consultant, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

C. No materials will be removed or installed under adverse weather conditions. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks.

D. All existing materials torn-off shall be immediately removed from the site to a dumping area authorized to receive such debris.

E. Any unusual or concealed conditions discovered during the course of the work that may adversely affect the performance of the new roof system must be immediately reported to the Consultant.

F. Any substrate to receive new materials shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on work area substrates, the contractor shall provide adequate equipment to dry the substrate.

3.05 DISPOSAL OF DEMOLISHED OR DAMAGED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in a certified, EPA-approved landfill. Follow any stated Owner specific disposal requirements.

1. Collect and place demolished materials in containers.
2. Do not allow demolished materials to accumulate on-site.
3. Storage or sale of demolished items or materials on-site will not be permitted.
4. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces.
5. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished, or damaged materials.

C. Disposal: Transport demolished, or damaged materials off Owner's property and legally dispose of them.

D. New materials that are wet or damaged and unacceptable for installation on the project must be disposed of in accordance with the requirements of this project.

3.06 CLEANING

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

END OF SECTION

SECTION 04 0121

BRICK MASONRY REHABILITATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Cleaning of existing masonry surfaces.
   2. Repair of damaged masonry.
   3. Work described in this section includes both “repointing” and “tuckpointing”, used interchangeably to describe existing, non-historic masonry repair and repointing work.
   4. Examination and analysis of material properties and techniques of existing masonry and mortar joints, to determine the extent, if any, of masonry repointing required.
   5. Evaluation and selection of appropriate repointing materials and methods, as may be required, based upon results of examination, analysis and report.

1.03 REFERENCE STANDARDS

A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

1.04 DEFINITIONS

A. Masonry: Brick (terra cotta) exterior wall elements including certain cast-stone elements set with mortar joints.

B. Mortar and Grout: Mixture of cement, lime, sand and water of specific required properties and proportions. Repointing mortars may not contain cement or may have utilized cements that are significantly different from modern Portland cement.

C. Repointing and Tuckpointing: the process of removing deteriorated mortar from the joints of masonry and replacing it with new mortar to restore the visual and physical integrity of the masonry.

1.05 SUBMITTALS

A. Refer to Section 01 3300 - Submittal Procedures, for submittal procedure requirements.

B. Product Data: For all products including, but not limited to, the following.
   1. Cleaning products.
   2. Repair materials.

3. Manufacturer instructions for storage, handling, and use for each type of product indicated. Include recommendations for application and use.
4. Indicate products to be installed during the Work of this Section, but specified in other Sections.

C. Qualification Data: For rehabilitation work specialists including field supervisors.

D. Brick Masonry Rehabilitation Program: Describe process in detail, including but not limited to, materials, methods, and equipment to be used, and including an assessment of the existing problem surfaces, and proposed procedures, application methods, and protection of surrounding materials on building and project site during operations.

E. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company's warranty for the system specified.
1. Sample Finish Warranty: Provide example of Finish Warranty proposed for use on this project.
2. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
3. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty.

1.06 QUALITY ASSURANCE

A. Complete all work in accordance with applicable building codes including provisions of TMS 402/602, except where exceeded by requirements of the contract documents.

B. Repointing Specialist Qualifications: Engage an experienced, masonry repointing firm to perform the work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a minimum five-year record of successful in-service performance.
1. Field Supervision: Repointing specialist firms shall maintain experienced full- time supervisors on the Project site during times that repointing is in progress. Supervisors shall not be changed during Project except for causes beyond control of repointing specialist firm.

C. Mortar Manufacturer Qualifications: A firm with a minimum five year record of successful in-service performance, regularly engaged in producing masonry mortar that have been used for similar applications with successful results, and with factory-trained representatives who are available for consultation and Project-site inspection and assistance.

1.07 MOCK-UP

A. Provide sample mock up of work as directed by Consultant.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials and proprietary products to the project site in manufacturers or distributor's packaging, dry, undamaged, complete with application instructions.

B. Store and transport materials and proprietary materials dry and within the temperature range recommended by the manufacturer and away from direct sunlight. Handle all materials according to manufacturer's instructions.

C. Collect and dispose of waste material, packaging, debris, and effluent associated with the masonry work in accordance with local, state, and federal environmental regulations.

1.09 PROJECT CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

B. The work of this Section shall be executed only when the air and surface temperatures are 40 degrees Fahrenheit and rising or 95 degrees F and falling. Work shall not commence when rain, snow, or below-freezing temperatures are expected within the next 24 hours. All surfaces shall be free of standing water, frost, and ice. Repointing should be performed in shade, away from strong sunlight in order to slow the drying process, especially during hot weather.

C. The Contractor is responsible for protecting existing adjacent materials during the execution of the work and shall provide all necessary protection and follow all necessary work procedures to avoid damage to existing material assemblies not a part of the work of this Section. At a minimum, the Contractor shall:

1. Protect woodwork, glass, and metal adjacent to masonry areas to be repointed from damage from repointing operations.

D. The Contractor shall erect temporary, waterproof enclosures around areas where cleaning operations are in progress to protect nearby property and passers-by from overspray of cleaning rinse water.

E. The Contractor shall coordinate masonry operations with the other trades involved in exterior and interior work

F. All Contractor personnel performing masonry operations shall be provided with protective clothing and any other personal protective equipment as required by local, state, and federal regulations.

1.10 WARRANTY

A. Installer Special Warranty: Installers special warranty covering defects resulting from materials and workmanship for the Work of this section.

1. Defects include failure of materials to perform in the intended use.
2. Warranty Period: Two (2) years from date of Substantial Completion.

B. Manufacturer Warranty: Provide manufacturer standard warranty for all materials of this Section.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide products from one of the following manufacturers:

1. Cleaning Chemicals:
    a. Cathedral Stone Products, Inc.
    b. Diedrich Technologies, Inc.
    c. HMK Stone Care System
    d. Prosoco, Inc.
2. Masonry and Mortar Restoration Materials:
    a. Match existing.

2.02 **CLEANING MATERIALS**

A. Use masonry cleaning materials recommended by specified manufacturer for existing masonry and grout substrates found on this project.

B. Use the least aggressive cleaning chemical available to perform cleaning work.

C. Ensure cleaning chemical selected causes no damage or premature deterioration of existing materials and substrates that the cleaning product will come into contact with on this project, including adjacent and surrounding areas (i.e. walls, ground, grasses, windows, metals, trees, etc.).

2.03 MASONRY MATERIALS

A. Use brick masonry materials to match existing materials in color, texture, sheen, shading, etc.

B. Match the existing mortar as closely as possible in composition, performance, color, texture and tooling.

C. The sand in the repointing mortar shall match the sand in the existing mortar as closely as possible and shall generally conform to ASTM C 144.

D. Lime, if included in the repointing mortar formula, shall generally conform to ASTM C 207, Type S, or Type SA, Hydrated Lime for Masonry Purposes.

E. Lime putty, if included in the repointing mortar formula, shall conform to ASTM C 1489.

F. Portland cement, if included in approved, appropriate proportion in the repointing mortar formula, shall conform to ASTM C 150. Appropriate color range between white and grey shall be approved. The cement shall not have more than 0.60 percent alkali to avoid staining.

G. Pre-blended masonry cements are not permitted.

H. Air-entraining agents, accelerators, retarders or other additives may be reviewed by the Consultant or Consultant's representative only if determined absolutely necessary and shall not be added to repointing mortar at the project site without prior approval.

I. Bonding agents are not suitable for proper joint preparation and shall not be permitted.

J. The repointing mortar shall have greater vapor permeability and be softer (measured in compressive strength) than the masonry units.

K. The repointing mortar shall be as vapor permeable and as soft or softer (measured in compressive strength) than the existing mortar.

L. Water shall be potable, clean and free from acids, alkalis or other dissolved organic materials.

M. Colorants, if found in the original mortar, may be used at the lowest level feasible to reproduce original mortar color and in no case shall exceed 10% on binder weight. Colorants shall conform to the requirements of ASTM C 979.

PART 3 - EXECUTION

3.01 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from work.

1. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of work.

3.02 CLEANING EXISTING MASONRY

A. Apply low pressure power wash to existing masonry surfaces maintaining uniform pressure and application throughout the cleaning area.

B. Use only cold, clean, potable water with only as much cleaning chemical added to provide effective cleaning of existing masonry and grout substrates.

C. Scrub with stiff brush as needed during cleaning.

D. Ensure all residues generated by cleaning operations are rinsed from work area and all adjacent affected areas.

E. Clean all masonry substrates thoroughly in the identified work area.

F. Provide a second cleaning as needed to achieve required results.

3.03 MASONRY REPOINTING, GENERAL

A. Use only those materials and methods approved for each condition and location.

B. Joint preparation:

1. Remove deteriorated mortar to a minimum depth of ½ inch or 2 to 2-1/2 times the width of the joint, whichever is greater, to ensure adequate bond and to prevent mortar “popouts”. This may require removal of the mortar to a depth of ½ to 1 inch. Any loose or disintegrated mortar beyond this minimum depth shall be removed.

2. Removal of deteriorated mortar by use of power saws, grinders or wire brushes shall not be permitted. Limit damage to masonry units through the use of hand chisels and mash hammers to the greatest degree practical.
3. Removal of deteriorated mortar by use of small, pneumatically-powered chisels may only be used by pre-qualified, skilled masons after successful demonstration of appropriate control over the equipment on mockup areas without damage to masonry units.
4. Under certain circumstances, removal of deteriorated mortar by thin, diamond- bladed grinders to cut out the center line of horizontal joints only on hard portland cement mortar may be used in combination with hand tools, by pre- qualified, skilled masons after successful demonstration of appropriate control over the equipment on mockup areas without damage to masonry units.
5. Under certain circumstances, removal of deteriorated mortar by caulking cutters with diamond blades to cut out the center line of horizontal joints only on hard portland cement mortar may be used in combination with hand tools, by pre- qualified, skilled masons after successful demonstration of appropriate control over the equipment on mockup areas without damage to masonry units.
6. Removal of deteriorated mortar in vertical joints by use of power-assisted tools is not permitted.

3.04 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or fiber brushes, and clean water, spray applied at low pressure.
   1. Do not use metal scrapers or brushes.
   2. Do not use acidic or alkaline cleaners.

B. Wash adjacent surfaces affected by work. Use cleaner and soft brushes or cloths.

C. Rinse off work areas and adjacent affected surfaces with clean water.

D. Sweep and rake adjacent pavement and grounds to remove debris. Where necessary, pressure wash surfaces to remove dust, dirt, and stains.

3.05 FIELD QUALITY CONTROL

A. Consultant's Project Representatives: Consultant will assign Project representatives to help carry out Consultant's responsibilities at the site, including observing the progress and quality of portion of the Work completed. Allow Consultant's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.

B. Notify Consultant's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Consultant's Project representatives have had reasonable opportunity to make observations of work areas at lift device or scaffold location.

END OF SECTION

SECTION 06 1053

MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Wood blocking and nailers with dimensional lumber.
   2. Wood framing with dimensional lumber.
   3. Wood roof decking with plywood.
   4. Wood roof decking with dimensional lumber.

1.03 DEFINITIONS

A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
   1. NLGA: National Lumber Grades Authority.
   2. SPIB: The Southern Pine Inspection Bureau.
   3. WCLIB: West Coast Lumber Inspection Bureau.

B. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

C. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal actual) size in least dimension.

D. Exposed Framing: Framing not concealed by other construction.

E. OSB: Oriented strand board.

F. S4S: Surfaced four sides.

1.04 SUBMITTALS

A. Product data for the following materials:
   1. Wood blocking and nailers.
   2. Wood framing.
   3. Wood roof deck sheathing.
   4. Securement products including fasteners and adhesives.

B. Shop drawings: Combine with shop drawings of other Sections where rough carpentry is integral to the installation of other cladding systems (i.e. roof and wall system assemblies).

1. Plan drawings indicating locations where rough carpentry items are to be used. Minimum drawing scale is 1/16 inch equals one foot.
2. Drawings showing sections and details of specific assembly using rough carpentry items to be installed. Minimum drawing scale is 3/4 inch equals one foot.
3. Include complete assembly to be installed over rough carpentry items, including backup securement, support, and framing. Reference the project specification section(s) containing materials and systems to be installed over sheathing.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

B. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

C. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 - PRODUCTS

2.01 GENERAL

A. Design intent is to match existing where existing materials are to be replaced with new. Where current code requirements are more stringent than existing materials to be replaced, the more stringent requirement shall apply.

B. Comply with applicable project code requirements. Coordinate with requirements of system or material to be installed over plywood sheathing.

2.02 WOOD PRODUCTS, GENERAL

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

B. All wood used in conjunction with roof system shall be pressure treated S4S.

C. Products shall contain no urea formaldehyde

2.03 WOOD TREATMENT

A. Factory-Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

B. Fire Retardant Treatment:

1. Provide fire retardant wood material where required by applicable codes.
2. Manufacturers:
    a. Arch Wood Protection, Inc; www.wolmanizedwood.com.
    b. Hoover Treated Wood Products, Inc; www.frtw.com.
    c. Osmose, Inc; www.osmose.com.
3. Exterior Type: AWPA U1, Use Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; with maximum flame spread index of 25 when tested in accordance with ASTM E84 and with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
4. Marking: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

C. Preservative Pressure Treatment:

1. Manufacturers:
    a. Arch Wood Protection, Inc; www.wolmanizedwood.com.
    b. Viance, LLC; www.treatedwood.com.
    c. Osmose, Inc; www.osmose.com.
2. Preservative Pressure Treatment of Plywood Decking: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention (to 4.0 kg/cu m retention).
3. Marking: Mark each piece with stamp of an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

2.04 DIMENSIONAL LUMBER FOR BLOCKING, NAILERS

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Includes typical nominal lumber sizes including but not limited to 2x4, 2x6, 2x8, 2x10, 2x12, 4x4, and 6x6.

B. For concealed boards, provide pressure treated lumber of the following species and grades:

1. Mixed southern pine, No. 2 grade; SPIB.
2. Hem-fir or hem-fir (north), Construction or 2 Common grade; NLGA, WCLIB, or WWPA.

C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.05 DIMENSIONAL LUMBER FOR WOOD DECKING

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Wood roof decking including planks.
2. Includes typical nominal lumber sizes including but not limited to 2x4, 2x6, 2x8, 2x10, and 2x12.
3. Includes tongue and groove and square edge planks.

B. For concealed boards, provide pressure treated lumber of the following species and grades:

1. Mixed southern pine, No. 2 grade; SPIB.
2. Hem-fir or hem-fir (north), Construction or 2 Common grade; NLGA, WCLIB, or WWPA.

2.06 ROOF DECK SHEATHING

A. Plywood Roof Deck Sheathing: Plywood, PS 1, Grade C-C (face-back), Group 4, Exterior Exposure Bond, Structural rated sheathing.

1. Grade C: Veneer permitted to have tight knots up to 1 1/2 inches in diameter, and knotholes up to 1 inch across the grain, or up to 1 1/2 inches if the total width of knots and knotholes is within specified limits. Wood and/or synthetic repairs allowed. Discoloration and sanding defects which to not impair strength are allowed.
2. Exterior: Fully waterproof bond. Designed for applications where panels are subject to permanent ongoing exposure to moisture.

B. Includes typical nominal lumber sizes including but not limited to 1/2 inch and 3/4 inch thicknesses in typically available 4 by 8 foot boards.

C. Includes tongue and groove and square edge plywood.

2.07 ACCESSORIES

A. Provide nails, bolts, nuts, washers, screws, expansion bolts, clips, fasteners and similar accessories necessary for complete installation of rough carpentry items.

B. Fasteners and Anchors:

1. Metal and Finish: Stainless steel. Comply with ASTM B633
2. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.
3. Nails, Brads, and Staples: ASTM F1667.
4. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to code officials, based on ICC-ES AC70.
5. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to code officials, based on ICC-ES report appropriate for substrate.

6. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

C. Self Adhered Membrane Barrier for Dissimilar Materials:
   1. For separation of treated wood products and structural steel, steel, aluminum, or other materials which cause corrosive action.
   2. Self-adhesive, polyethylene film-backed barrier with release sheet.
   3. Thickness: 40 mils minimum.
   4. Acceptable Products:
      a. Mid-States “Quick-Stick” HT.
      b. W R Grace "Ice & Water Shield HT.
      c. Henry “Blueskin PE 200 HT”.
      d. Carlisle Coatings and Waterproofing, Inc., "WIP 300HT".

D. Prefabricated supports and connectors:
   1. Acceptable manufacturers:
      a. Cleveland Steel Specialty Co.
      b. Harlan Metal Products, Inc.
      c. USP Lumber connectors.
      d. Simpson Strong-Tie Co.
   2. Prefabricated supports and connectors shall comply with ASTM D1761, as applicable for specific application.
   3. Material: Minimum 18 gage steel.
   4. Clips: Complying with manufacturer recommendations and requirements of applicable building code.
   5. Nails shall be annular ring type and of sizes recommended by prefabricated connector manufacturer’s product data.
   6. Finish: Finish of supports and connectors shall be compatible with fasteners and with each other.
      a. Finish for use with non-pressure treated wood products shall be G90 hot-dip galvanized.
      b. Finish for use with pressure-treated wood products shall be G185 hot-dip galvanized or Type 316L stainless steel.

E. Adhesive:
   1. Provide adhesive designed for adhering rough carpentry items to concrete or masonry.
   2. Product shall comply with ASTM D3498 and be approved for proposed application by adhesive manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of materials of this section indicates acceptance of substrates and conditions.

3.02 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Provide blocking and framing as indicated and as required to support facing materials, equipment, sheet metal flashings, and specialty items, and trim.

C. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

D. Use stainless steel screw of appropriate type, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Applicable requirements of ICC's International Building Code (IBC). Installation shall comply with the requirements of applicable codes.
2. ICC-ES evaluation report for fastener.

3.03 INSTALLATION OF WOOD BLOCKING AND NAILERS

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.04 INSTALLATION, WOOD DECKING

A. Install plywood decking perpendicular to framing members with ends staggered over firm bearing.

B. Allow expansion space at edges and ends.

C. Attach plywood decking with adhesive and screws.

1. Use fasteners of appropriate type, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated. Ensure fasteners are installed to provide applicable code required structural integrity.

D. Cut decking to accommodate penetrations such as pipes, conduits, roof drains, and flanges.

E. Where preservative-treated roof decking must be cut during erection, apply a field-treatment preservative to comply with AWPA M4.

F. Anchor wood roof decking, where supported on walls, with bolts as indicated.

G. Apply joint sealant to seal roof decking at exterior walls at the following locations:

1. Between roof decking and supports located at exterior walls.
2. Between roof decking and exterior walls that butt against underside of roof decking.
3. Between tongues and grooves of roof decking over exterior walls and supports at exterior walls.

3.05 TOLERANCES

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

B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

C. Variation from Plumb: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.06 ADJUSTING

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

END OF SECTION

SECTION 07 1923

SILOXANE WATER REPELLENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Water repellents applied to exterior masonry surfaces.

1.03 SUBMITTALS

A. Refer to Section 01 3300 - Submittal Procedures, for submittal procedure requirements.

B. Product Data: Provide product description, limitations, and chemical composition.

1. Indicate compliance with specified requirements.

C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention; cautionary procedures required during application.

D. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company’s warranty for the system specified.

1. Sample Finish Warranty: Provide example of Finish Warranty proposed for use on this project.
2. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
3. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty.

1.04 QUALITY ASSURANCE

A. Manufacturing qualifications:

1. The manufacturer of the specified product shall be ISO 9001:2008 certified and have in existence a recognized ongoing quality assurance independently audited on a regular basis.
2. Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction.

D. Test Area: Coordinate existing substrates with manufacturer recommendations to ensure selection of appropriate products for project conditions. Install water repellent on test area to ensure compatibility.

1. Test a minimum 4 ft. by 4 ft. area on each type of masonry.
2. Use the manufacturer's application instructions.
3. Allow test area installation to cure before inspection.
4. Keep test panels available for comparison throughout the protective treatment project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.06 JOB CONDITIONS

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45 degrees F and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.07 WARRANTY

A. Special Manufacturer Warranty: Manufacturer shall provide a warranty executed by authorized company official as follows:

1. Manufacturer warrants that the material perform in its intended role as a water repellent material and shall be free from material defects and will be consistent with the Manufacturer's quality and manufacturing specifications.
2. Coverage: Manufacturer agrees to replace any material sold that is either proven defective or fails to be consistent with Manufacturer's manufacturing specifications, provided the material has been stored and applied in accordance with the Manufacturer's written instructions. Manufacturer warranty "buy-out" in lieu of replacement is not acceptable.
3. Coverage shall include loss of water repellency which shall be determined by RILEM Uptake Tube method.
4. Manufacturer warranty "buy-out" in lieu of repair and replacement is not acceptable.
5. Warranty Term: Five years from date of Substantial Completion.

B. Special Installer Warranty: Installer shall provide a warranty executed by authorized company official as follows:

1. Installer warrants water repellent installation against defects caused by faulty workmanship or materials for the term indicated. The warranty will cover the surfaces treated and will bind the applicator to repair, at his expense, any and all leaks through the treated surfaces which are not due to structural weaknesses or other causes beyond applicator's control such as fire, earthquake, tornado and hurricane.
2. Coverage: The installer warrants that, upon completion of the work, surfaces treated with water repellent components of this section will be and will remain free from water leakage resulting from defective workmanship or materials for period specified.
    a. In the event that water leakage occurs within the warranty period from such causes, the applicator shall, at his sole expense, repair, replace or otherwise correct such defective workmanship or materials.
    b. Installer shall not be liable for consequential damages and installers liability shall be limited to repair, replacement or correcting of defective workmanship or materials.
    c. Installer shall have no responsibility with respect to water leakage or other defects caused by structural failure or movement of the structure, or any other causes beyond Installer's control.
    d. Installer warranty "buy-out" in lieu of repair and replacement is not acceptable.
3. Warranty Term: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Basis of Design: SikaGard 701W by Sika Corporation, Inc.

2.02 MATERIALS

A. Water Repellent: Product shall be water-based silane/siloxane water repellent (penetrating sealer) with the following properties:
    1. Compatible with concrete and most masonry surfaces.
    2. Low-VOC treatment with deep penetration capability.
    3. Provides masonry resistance to cracking, spalling, staining and other damage related to water intrusion.
    4. Low odor and alkaline stable
    5. Designed for for field application.
    6. Solvent free.
    7. The material shall not contain any silicates, fluosilicates, or stearates.

2.03 PERFORMANCE CRITERIA

A. Properties of the water repellent:
    1. Form: White milky opaque liquid

2. Solids: 50% concentrated (silane modified siloxane polymer)
3. Specific Gravity: 0.996
4. Active Content: 7%
5. pH: 4-5
6. WT./GAL.: 8.29 lbs.
7. Flash Point: > 212 degrees F (> 100 degrees C) ASTM D 3278
8. Freeze Point: 32 degrees F (0 degrees C)
9. VOC Content: Complies with all known national, state and district AIM VOC regulations.
10. Not designed to prevent water entry through cracks, open joints, and other substrate voids.

PART 3 - EXECUTION

3.01 GENERAL

A. Coordinate work specified in Section 04 0123 - Exterior Cleaning and Masonry Rehabilitation, with the work of this section.

B. Perform all work in accordance with manufacturer recommendations and requirements.

C. Protection of Adjacent Work:
   1. Protect adjacent landscaping, property, and vehicles from drips and overspray.
   2. Protect adjacent surfaces not intended to receive water repellent.

3.02 SURFACE PREPARATION

A. Existing masonry substrates must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means and/or as directed by water repellent manufacturer. Substrate shall be in accordance with ICRI Guideline No. 03732 for sealers.

B. Masonry wall cleaning specified in Section 004 0123 - Exterior Cleaning and Masonry Rehabilitation, may be adequate for installation of new water repellant. Fully coordinate with water repellant manufacturer requirements and ensure compatibility of cleaning chemicals with new water repellant.

C. Fully coordinate substrate surface preparation with water repellent manufacturer requirements.

D. Allow surfaces to dry completely to degree recommended by water repellent manufacturer before starting coating work.

3.03 MIXING AND APPLICATION

A. Mixing: Mix as directed by manufacturer.

B. Coating Application: Apply by brush, roller, or spray over entire area moving in one direction. A minimum of two coats are required.

C. Adhere to all limitations and cautions in the manufacturers printed literature.

D. Vertical Application Instructions

E. For best results, apply protective treatment in a two-coat, “wet-on-wet” application, to a visibly dry and absorbent surface.

1. Spray: Saturate from the bottom up, creating a 4” to 8” (15 to 20 cm) rundown below the spray contact point. Let the first application penetrate for 5-10 minutes. Resaturate. Less will be needed for the second application.
2. Brush or roller: Saturate uniformly. Let protective treatment penetrate for 5 to 10 minutes. Brush out heavy runs and drips that do not penetrate.

F. Dense Surface Application Instructions

1. Apply in a single, saturating application with no run down. Back roll all runs and drips to ensure uniform appearance. DO NOT OVER APPLY. One application may be enough. Always test.

G. Horizontal Application Instructions

1. Saturate in a single application. Use enough to keep the surface wet for 2 to 3 minutes before penetration. Provide second coat if full coverage and full saturation is not achieved in one coat.
2. Broom out puddles until they soak in. Treated surfaces dry to touch in 1 hour. Protect surfaces from rainfall for 6 hours following treatment. Many surfaces need several days of curing (drying) to develop full water repellency.
3. Protect from rain for 6 hours and from pedestrian and vehicular traffic until visibly dry.

3.04 CLEANING

A. Clean tools, equipment, and over spray with soap and clean water. Warm water may provide additional cleaning benefits. Use of soap for cleaning is at the discretion of the installer.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

END OF SECTION

SECTION 07 4633

PLASTIC SIDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes vinyl siding and accessories.

1.03 SUBMITTALS

A. Comply with the requirements of Section 01 3300 - Submittal Procedures.

B. Product Data: Provide product data sheets for each product including but not limited to the following:

1. Siding.
2. Trim and accessories.

C. Shop Drawings:

1. Submit project specific details at all transitions and penetrations.

D. Manufacturer Installation Instructions:

1. Include manufacturer's written instructions for evaluating, preparing, and treating each substrate.

E. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company’s warranty for the system specified.

1. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
2. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty.

F. Color Charts For initial Selection:

1. Submit three manufacturer color charts for initial color selection.
2. Include available textures and patterns for each product.

G. Samples for Verification: Submit appropriate section of panel for each finish selected indicating the color, texture, and pattern required.

1. Submit with specified applied finish.
2. Exposed Molding and Trim: Provide samples of each type, finish, and color.

1.04 CLOSEOUT SUBMITTALS

A. Maintenance Data: For materials and accessories.

B. Executed Installer Warranty: Submit installer warranty executed in Owner's name.

C. Executed Manufacturer Warranty: Submit manufacturer warranty executed in Owner's name.

1.05 WARRANTY

A. Installer Special Warranty: Installers special warranty covering defects resulting from materials and workmanship for the Work of this section.

1. Defects include failure of the system to prevent water from entering the structure below or behind, and failure of materials to perform in the intended use.
2. Warranty Period: Two (2) years from date of Substantial Completion.

B. Manufacturer Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.

1. Defects include failure of materials to perform in the intended use.
2. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General Requirements: Comply with applicable project building codes.

1. Wind Resistance: Complying with the exterior cladding requirements of applicable building codes.
2. Flammability: Complying with the exterior cladding requirements of applicable building codes.

B. Horizontal Plastic Siding:

1. Profile: Design intent is to match existing. Final selection as approved by Consultant.
2. Thickness: 0.038 inch, minimum.
3. Length: 12 feet, minimum.
4. Nailing Hem: Single layer, with 1-1/8 inch long nail holes at maximum 18 inch on center.
5. Finish: As selected by Owner from manufacturers full range.
6. Color: As selected by Owner from manufacturers full range of available colors.

2.02 PLASTIC SIDING

A. General: Integrally colored product complying with ASTM D3679.

B. Manufacturers:

1. Alside, Inc: www.alside.com
2. CertainTeed Corporation: www.certainteed.com

3. Ply Gem Industries, Inc: www.plygem.com
4. Sagiper North America Inc: www.sagipernorthamerica.com
5. Wolf Home Products: www.wolfhomeproducts.com

C. Certification Program: Provide products that are listed in VSI's list of certified products.

2.03 ACCESSORIES

A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.

1. Provide accessories made from same material as and matching color and texture of adjacent siding unless otherwise indicated.

B. Vinyl Accessories: Integrally colored vinyl accessories complying with ASTM D3679 except for wind-load resistance.

C. Flashing: Provide metal flashing complying with Section 07 6200 - Sheet Metal Flashing and Trim, at window and door heads and where indicated.

D. Fasteners:

1. For fastening to wood, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1 inch (25 mm) into substrate.
2. For fastening to metal, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch (6 mm), or three screw-threads, into substrate.
3. For fastening vinyl, use aluminum, hot-dip galvanized, or stainless-steel fasteners. Where fasteners are exposed to view, use prefinished aluminum fasteners in color to match item being fastened.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

1. Center nails in elongated nailing slots without binding siding to allow for thermal movement.

B. Install vinyl siding and related accessories and flashings according to ASTM D4756.

1. Install fasteners for horizontal vinyl siding no more than 16 inches o.c. Comply with wind resistance requirements for applicable building codes.

C. Install joint sealants as specified in Section 07 9200 - Joint Sealants, and to produce a weathertight installation.

3.02 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION

SECTION 07 5219

SBS-MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes SBS-modified bitumen roof system.

B. For use in the following applications.

1. New roof system installed over existing structural deck.
2. Wet abatement infill at existing SBS-modified bitumen roof systems.
3. Areas indicated for repair at existing low slope asphalt roof systems.

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.04 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Wind, Fire and Hail Resistance:

1. Fire Classification: Provide materials that have been successfully tested as part of an Underwriters Laboratories (UL) Class A rated assembly over a wood deck.

D. Agency Approvals:

1. All products used shall bear Factory Mutual Global (FMG) and Underwriters Laboratories (UL) approval.
2. Designated seal of approval shall be clearly visible on all product packing.
3. System and components shall comply with applicable state International Building Code (IBC).

1.05 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is has been a roof membrane system manufacturer approved applicator in good standing for the past five (5) consecutive years prior to project bid date. Installer must have been in business under the same name for at least five (5) consecutive years. Contractor shall be approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's twenty (20) year warranty.

1. Installer's Field Supervision: Installer is required to maintain a full-time supervisor / foreman, with supervision-only responsibilities, on job site during times that modified bituminous sheet membrane roofing work is in progress. The individual shall be experienced in installation of roofing systems similar to type and scope required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer that has UL listing and FMG approval for membrane roofing system identical to that used for this Project. Manufacturer shall have a minimum ten (10) years of successful manufacture of membrane using the same membrane formulation.

1. Obtain components for roofing system from or approved by roofing system manufacturer Provide primary products, including each type of roofing sheet, bitumen, composition flashings, and vapor barrier (where used), produced by a single manufacturer. Provide secondary products only as recommended and approved by the manufacturer of primary products for use with roofing system specified.
2. Manufacturer’s Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design and extent to those specified for this Project. Manufacturer’s Sales Representative will not be accepted as a Technical Representative.
3. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer. Provide primary products, including each type of roofing sheet, bitumen, composition flashings, and vapor barrier (if any), produced by a single manufacturer. Provide secondary products only as recommenced by the manufacturer of primary products for use with roofing system specified.

C. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, and/or FMG. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.

1.06 SUBMITTALS, NEW/RECOVER SYSTEMS

A. Refer to Section 01 3300 - Submittal Procedures, for submittal procedure requirements.

B. Manufacturer Product Data Sheets: Provide for all products, including but not limited to the following;
   1. Primers.
   2. Insulation and cover board adhesive.
   3. Insulation.
   4. Cover board.
   5. Membrane Adhesives.
   6. SBS membrane.
   7. SBS flashing components.
   8. SBS roof system sealants.
   9. Cold fluid applied membrane system.
   10. Fasteners.

C. A letter from the proposed roof membrane system manufacturer corporate technical department indicating:
   1. The contractor is an approved applicator of the proposed roof system, and capable of providing the specified manufacturers warranty for that system.
   2. The specified roof system warranty will be issued upon successful completion of the project.
   3. Manufacturer compliance with the Manufacturer Qualifications listed in the Quality Assurance article of this specification have been met by the manufacturer.
   4. A written summary of the proposed roof system from the deck up, including all components whether provided by the membrane manufacturer or not.
   5. Manufacturer compliance with the Performance Requirements article of this specification, including specific references to specified wind and fire resistance approvals.

D. Provide SBS roof membrane system shop drawing package including all drawings and details for all conditions expected for this project. Shop drawings must be project specific, manufacturer standard details are not acceptable.
   1. Contractor provided shop drawing plans and details to be reviewed and approved by SBS system manufacturer for specified project SBS roof system warranty.
   2. Each shop drawing detail must include signed and dated by SBS system manufacturer technical department representative as accepted for use on this project.

E. Manufacturer installation instructions manuals for all materials.

F. Manufacturer Color Charts:
   1. SBS roof system sealants.
   2. SBS membrane granule surface colors.

G. Sample/Specimen Warranties:
   1. Sample manufacturer warranty meeting the specified warranty requirements for this project.

2. Sample installer warranty meeting the specified warranty requirements for this project.

1.07 SUBMITTALS, WET ABATEMENT SYSTEMS

A. Refer to Section 01 3300 - Submittal Procedures, for submittal procedure requirements.

B. Manufacturer Product Data Sheets: Provide for all products, including but not limited to the following;

1. Primers.
2. Insulation and cover board adhesive.
3. Insulation.
4. Cover board.
5. Membrane Adhesives.
6. SBS membrane.
7. SBS flashing components.
8. SBS roof system sealants.
9. Cold fluid applied membrane system.
10. Fasteners.

C. Provide SBS roof membrane system shop drawing package including all drawings and details for all conditions expected for this project. Shop drawings must be project specific, manufacturer standard details are not acceptable.

D. Manufacturer installation instructions manuals for all materials.

1.08 CLOSEOUT SUBMITTALS

A. Executed Installer Warranty: Submit installer warranty executed in Owner's name.

B. Executed Manufacturer Warranty: Submit manufacturer warranty executed in Owner's name.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturers written instructions for handling, storing, and protecting during installation.

D. Store and handle roofing roll goods and rigid insulation boards in a manner, which will ensure that there is no possibility of significant moisture pick-up.

E. All material must be protected from the weather by protective tarps. Manufacturer's plastic covers are not acceptable means of protection.

F. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.10 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

B. At the end of each days work temporary cut-offs and tie-ins shall be made weathertight, no exceptions.

C. At the end of the days work all materials stored materials are to be recovered, tied and weighted down.

1.11 SBS MODIFIED BITUMEN ROOF WARRANTY, NEW/RECOVER SYSTEMS

A. The Contractor is to provide both a Manufacturer's Roof System Warranty, and Contractor Roof Warranty.

1. Warranties which contain language regarding the governing of the warranty by any state other than the State of Georgia, must be amended to exclude such language, and substituting the requirement that the laws of the State of Georgia shall govern all such warranties.

B. Manufacturer's Warranty: Manufacturer's TOTAL SYSTEM WARRANTY, "No Dollar Limit" (NDL) without any form of monetary limitations, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.

1. Warranty includes the following items when used; roof membranes, base flashings, roofing membrane accessories, roof insulation system, fasteners, adhesives, cover boards, gravel stops, copings, and cold fluid applied flashing membranes.
2. Warranty shall include wind speed up to 90 mph, 3 second wind gust.
3. Warranty Period: Twenty (20) years from date of Substantial Completion.

C. Contractor Roof Warranty: Contractor's Roof Warranty covering Work of this Project.

1. Warranty Period: Two (2) years from date of Substantial Completion

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with specified roof system requirements, provide products by the following:

1. SBS-Modified Bituminous Membrane Roofing:
    a. Johns Manville, Inc.
    b. Siplast, Inc.
    c. Soprema, Inc.
    d. Or approved equal.

B. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
    1. Products: Subject to compliance with requirements, provide one of the products specified.
    2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 SBS-MODIFIED ASPHALT CAP SHEET MEMBRANE

A. Roofing Membrane Cap Sheet: ASTM D 6164, Grade G, Type I, polyester-reinforced 180 gram fire rated (FR) SBS-modified asphalt sheet; granular surfaced; suitable for application method specified.
    1. Granule Color: Manufacturers standard White.
    2. 4.0 mm nominal thickness.

2.03 SBS-MODIFIED ASPHALT BASE SHEET AND STRIPPING-PLY SHEET MEMBRANE

A. Base-Ply: ASTM D 6164, Grade S, Type I, polyester-reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for application method specified.
    1. 3.0 mm nominal thickness.
    2. 1-ply application.

2.04 ASPHALT BASE SHEET MEMBRANE

A. Fiberglass Base Ply Sheet: Asphalt and glass-fiber felt complying with ASTM D D4601 and UL Type G2.
    1. Designed for mechanical attachment to wood decks and provided by the specified roof system manufacturer.

2.05 INSULATION AND COVER BOARD ADHESIVE

A. Bead-applied low-rise one- or multi-component urethane adhesive formulated to for use in roof systems for specified cover board, cant strip and/or insulation attachment.
    1. Use roof membrane manufacturers own adhesive only. Third party adhesives are not permitted.

2.06 INSULATION, GENERAL

A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

1. Proposed roof assembly (including insulation and/or) must meet specified roof system performance requirements (i.e. wind uplift, fire resistance, warranty, etc.).

2.07 POLYISOCYANURATE RIGID INSULATION

A. Flat Polyisocyanurate Roof Insulation Board: thickness as indicated meeting ASTM C 1289, Type II, Class 1, Grade 2 (20 psi), felt or glass-fiber mat facer on both major surfaces.

1. Thickness: Varies, match existing.
2. Facings to be type recommended for fully adhered, mechanically fastened, or bead applied adhesive installations, where applicable.

B. Tapered Polyisocyanurate roof insulation board: thickness as indicated meeting ASTM C 1289, Type II, Class 1, Grade 2 (20 psi), felt or glass-fiber mat facer on both major surfaces.

1. Thickness: Varies, match existing.
2. Facings to be type recommended for fully adhered or bead applied adhesive installations, where applicable.
3. Slope of tapered insulation at crickets to be double the slope of adjacent roof area.

C. Insulation R Value:

1. At Wet Abatement Areas: Minimum new insulation system R-Value will be as required to match existing finished roof surface height.

D. Manufacturers; subject to approval by the manufacturer of primary roofing materials shall be one of the following meeting the requirements of this specification:

1. Membrane manufacturers own insulation.
2. Atlas Corporation
3. Hunter Panels, Inc.

2.08 TAPERED EDGE STRIP

A. Match existing.

2.09 COVER BOARDS

A. Match existing.

2.10 AUXILIARY MATERIALS AND ACCESSORIES

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane. Items used from the section must be acceptable to the membrane system manufacturer for use in conjunction with their roof system, and not effect specified warranty coverage.

B. Asphalt Primer: ASTM D 41. Use roof membrane system manufacturers primer only.

C. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application. Use roof membrane system manufacturers primer only.

D. Membrane Cold Adhesive: Membrane manufacturers own solvent based cold adhesive designed for SBS modified bitumen membrane installation. Provide trowel or squeegee grade as recommended by roof membrane system manufacturer for project specific application.

E. Mastic Sealant: Sonneborn NP-1.

F. Fasteners: Factory-coated steel fasteners and metal plates, batten bars and termination bars meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing membrane components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer. Tested to meet or exceed specified wind uplift requirements.

1. Fasteners subject to compliance with specified roof system performance requirements.
2. Deck Fasteners (when needed): Extra Heavy Duty #15 by SFS, OMG, TRUFAST or fasteners provided by roof membrane system manufacturer.

G. Pancake Head Base Sheet Fasteners For Wood Decks: Simplex 1” Cap Nails, hot dip galvanized, ring shanks, and meeting American Plywood Association FFN-105b Type II, Style 20.

H. Nailers and/or Curbs: Wood nailers and/or curbs are specified in Division 06 "Miscellaneous Rough Carpentry".

I. Roofing Granules: Roof membrane manufacturers standard ceramic-coated roofing granules, color to match roofing membrane. Use granules provided by roof membrane system manufacturer only.

J. Sheet Metal Flashings and Accessories: See Division 07 Section "Sheet Metal Flashing and Trim" for roof penetration flashings, flashings and counterflashings.

K. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

PART 3 - EXECUTION

3.01 GENERAL

A. Refer to Section 02 4119 - Selective Roof Demolition for demolition and removal of the existing roof system.

B. No roofing materials will be removed or installed under adverse weather conditions. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks.

C. Only as much existing roofing shall be removed and new roofing installed as can be made weather-tight each day. This includes all flashing work.

D. All existing roofing materials torn-off shall be immediately removed from the site to a dumping area authorized to receive such debris.

E. Any unusual or concealed conditions discovered during the course of the work that may adversely affect the performance of the new roof system must be immediately reported to the Consultant. All work shall be halted until the Consultant has responded with a solution to the problem.

F. Any substrate to receive new insulation, membrane or flashing shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on the decking, the contractor shall provide adequate equipment to dry the substrate.

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

3.02 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place, set and braced.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and nailers match thicknesses of insulation.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of materials of this section indicates acceptance of substrates and conditions.

3.03 PREPARATION

A. Clean and prepare substrate according to manufacturers written recommendations. Provide clean, dust-free, and dry substrate for roofing application.

B. Mask off adjoining surfaces not receiving roofing to prevent spillage from affecting other construction.

C. Protect roof drainage components and other deck penetrations to prevent spillage and migration of roofing fluids.

D. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from substrates.

E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

3.04 WOOD NAILERS

A. Treated wood nailers shall be installed as indicated on project drawings. Refer to specification section 06 1053 - Miscellaneous Rough Carpentry.

B. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the membrane is to be applied.

3.05 FASTENERS

A. Fasteners used to secure components of the roof system shall be accepted by the manufacturer of the membrane being installed.

B. The fastener assembly shall be installed as specified to avoid abrasion to the membrane.

C. The fastener manufacturer's recommendations shall be followed for:

1. Fastener suitability for specific applications
2. Proper drill bit for drilling correct hole size diameter and depth.
3. Minimum depth of embedment into deck to achieve required resistance to pull out.
4. Fastener length to provide proper fastening into deck.
5. Installation tools

D. Fasteners that are improperly installed shall be removed or corrected. Improper application may be characterized as:

1. Overdriven: Fastener is driven to the point that it is causing the stress distribution surface to become concave (or deformed in the case of batten strips) excessive driving may cause failure by disengaging the fastener threads from the deck).
2. Under-driven: Fastener head is not properly seated on the stress distribution surface.
3. Snapped: Fastener breaks under the driving load.
4. Bent: Fastener is bent to the point that it adversely affects the installation.
5. Not engaged: Fastener is improperly located or is of insufficient length.

3.06 INSULATION INSTALLATION

A. General: Comply with insulation manufacturer's instructions and recommendations for the handling installation, and bonding or anchorage of insulation to substrate. Install one or more layers of insulation under area of roofing to achieve specified R-value.

B. Insulation Attachment: Match Existing.

C. Trim surface of insulation where necessary so completed surface is flush and does not restrict flow of water.

3.07 COVER BOARD INSTALLATION

A. General: Comply with insulation manufacturer's instructions and recommendations for the handling installation, and bonding or anchorage of cover board to substrate.

B. Cover Board Attachment: Match Existing.

C. Ensure that finished surface of new cover board is installed to provide smooth transition for new roof membranes to be installed.

3.08 SBS MEMBRANE AND ASPHALT PLY SHEET, GENERAL INSTALLATION

A. Install roofing membrane system according to roofing system manufacturer’s written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."

B. Cooperate with testing and inspecting agencies engaged or required to perform services for installing roofing system.

C. Apply membrane manufacturers required primer for membranes to all substrates prior to membrane installation.

D. Coordinate installation of roof system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs to the existing roof system at end of each day's work to cover exposed roofing membrane sheets and insulation with two course of coated felt set in roofing cement with joints and edges sealed.
2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
3. Remove and discard temporary seals before beginning work on adjoining roofing.

E. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer. Minimum 30 minutes.

F. Reroll relaxed membrane and position membrane in place where it will be installed.

G. Install specified SBS roof membrane in a shingle fashion according to roofing system manufacturer's written instructions starting at low point of roofing system. Shingle in direction required to shed, not dam, water.

H. Application shall provide a smooth surface, free of air pockets, wrinkles, fishmouths or tears.

I. Run membrane tight up against any vertical surfaces such as curbs, parapets, and vents.

J. Contractor shall take extreme care to ensure that the cap sheet surface remains clean and free from staining, contamination, or discoloration of the surface by roofing activities. Areas of damage or discoloration may, at the Owners or Consultants discretion, require treatment using specified cold fluid applied membrane resin and ceramic granules matching the factory applied cap sheet granules.

3.09 SBS MEMBRANE AND ASPHALT PLY SHEET INSTALLATION, COLD APPLIED

A. Install roofing membrane system according to roofing system manufacturer’s written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."

B. Attach asphalt base ply sheet using 1” pancake head fasteners into wood deck at 4” o.c. in all directions.

C. All SBS membrane sheets shall be set in a full coverage application of specified membrane cold adhesive at a rate of 2.5 to 3.0 gallons per 100 square feet.

1. Provide min. 3-inch side and 6-inch end laps.
2. A 1/8-inch to 1/4-inch bleed-out of adhesive shall be visible at the outer edge of all laps (seams). All laps must be checked for full and proper adhesion.

D. Backnail SBS membranes in accordance with specified roof membrane manufacturers backnailing requirements for roof slope found on this project. Minimum backnailing spacing is 8" o.c. horizontally using 2" diameter seam plates.

E. Miscellaneous Installation Requirements:

1. Place membrane sheets to ensure water will flow over or parallel to, but never against, exposed edges.
2. Ply should never directly contact other plies; even at roof edges, laps, tapered edge strips, and cants.
3. Avoid excessive application of asphalt adhesive over top ply, leave top ply exposed with minimal asphalt at ply lines.
4. Light brooming or squeegeeing may be required to aid adhesion of ply sheets, base sheets, and/or cap sheets.
5. Avoid traffic on all newly installed membrane.
6. Lap ply sheet ends six inches. Stagger end laps twelve inches minimum.
7. Cut out fishmouths/side laps that are not completely sealed. Replace all sheets that are not fully and continuously bonded.

3.10 FIELD BASE MEMBRANE PLY INSTALLATION

A. Refer to SBS MEMBRANE GENERAL INSTALLATION section above.

B. Fully adhere SBS roof membrane in a shingle fashion according to roofing system manufacturer's written instructions starting at low point of roofing system. Shingle in direction required to shed, not dam, water.

C. Seal all laps by running a hot trowel along the edge of the seam.

D. Run membrane tight up against any vertical surfaces such as curbs, parapets, and vents.

3.11 FLASHING AND STRIPPING PLY INSTALLATION

A. Refer to SBS MEMBRANE GENERAL INSTALLATION section above.

B. All edge metal extending onto the surface of the new modified bitumen base ply shall be stripped in with an additional ply (min. 8" wide and centered) of the specified modified bitumen base ply.

C. This applies to gravel stops, drip edges, and lead drain target flashings.

D. Stripping membrane shall be fully adhered.

E. Flashing membrane plies must be fully pressed or rolled into place to ensure full adhesion.

F. Seal all laps by running a hot trowel along the edge of the seam.

3.12 FIELD CAP MEMBRANE PLY INSTALLATION

A. Refer to SBS MEMBRANE GENERAL INSTALLATION section above.

B. Once the FIELD BASE MEMBRANE, FLASHING AND STRIPPING PLY, and BASE FLASHING BASE PLY MEMBRANE is installed and have been inspected by the membrane manufacturer; installation of the field cap membrane ply is permitted.

C. All cap sheet membrane applications shall be fully adhered.

D. Seal all laps by running a hot trowel along the edge of the seam.

3.13 BASE FLASHING CAP MEMBRANE PLY INSTALLATION

A. Refer to SBS MEMBRANE GENERAL INSTALLATION section above.

B. Once the FIELD BASE MEMBRANE, FLASHING AND STRIPPING PLY, and FIELD CAP MEMBRANE is installed and have been inspected by the membrane manufacturer; installation of the field cap membrane ply is permitted.

C. All SBS cap ply membrane applications shall be fully adhered.

D. Flashing membrane plies must be fully pressed or rolled into place to ensure full adhesion.

E. Run membrane tight up against any vertical surfaces such as curbs, parapets, and vents.

F. Seal all laps by running a hot trowel along the edge of the seam.

3.14 SBS MEMBRANE ROOF EDGE TERMINATIONS

A. Where new roof membrane is adhered directly to edge metal system, prime with specified ASTM D41 primer.

B. Where stripping membrane is required, strip the metal edge flashing with an 8-inch wide piece of ASTM D 6164, Type I or II, Grade S, membrane. Use specified field SBS base sheet.

3.15 WATER CUT-OFF

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

3.16 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Consultant. Notify Consultant 48 hours in advance of date and time of inspection.

1. Notify Consultant or Owner 48 hours in advance of date and time of inspection.

B. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.17 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Consultant and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION

SECTION 07 5416

KEE THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. For use only if accepted by Alternate.

B. Section Includes:

1. New Ketone Ethylene Ester (KEE) membrane roof system.
2. Miscellaneous system accessories and components.

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," before multiplication by a safety factor.

C. Factored Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," after multiplication by a safety factor.

1.04 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Assembly: Provide a roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to current applicable State of Georgia accepted ASCE 7, as specified.

D. Wind, Fire and Hail Resistance:

1. FMG Listing: Provide a complete system including roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as

part of a roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.

a. Fire/Windstorm Classification: Class 1A-90.

b. Hail Resistance: SH.

2. Miami Dade NOA: Alternately, a complete system NOA approval may be provided in lieu of FM approval.

a. Windstorm Classification: -45 psf

3. If any variation exists between the specified approval requirements, and the manufacturers proposed assembly, the manufacturer must provide detailed summary of differences for review and approval.

4. For recover projects, provide statement from membrane manufacturer clarifying applicability of referenced wind uplift approval to the specific project recover conditions.

E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, and/or FMG. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: ASTM E108/UL 790 Class A fire resistance for application and roof slopes indicated.

F. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, or the “Resistance to Foot Traffic Test “ FM 4470.

G. Agency Approvals:

1. All products used shall bear Factory Mutual Global (FMG) and Underwriters Laboratories (UL) approval.

2. Designated seal of approval shall be clearly visible on all product packing.

3. System and components shall comply with applicable state International Building Code (IBC) requirements including ANSI-SPRI/ES-1.

1.05 SUBMITTALS

A. Refer to Section 01 3300 - Submittal Procedures, for submittal procedure requirements.

B. Product Data: Provide manufacturer product data sheets indicating material characteristics, performance criteria, and limitations.

1. KEE membrane.

2. KEE flashing membrane.

3. Cold fluid applied flashing membrane.

4. System fastening and securement items.

5. Sealants.

C. Shop Drawings: Provide KEE roof membrane system shop drawing package including all drawings and details depicted in Base Bid project diagrams. Any additional cost required to produce shop drawing package shall be paid by the Contractor.

1. Shop drawings must be project specific, manufacturer standard details are not acceptable.
2. Contractor provided shop drawing plans and details to be reviewed and approved by KEE system manufacturer for specified project KEE roof system warranty.
3. Each shop drawing detail must include signed and dated acceptance by KEE system manufacturer technical department representative.

D. Tapered Insulation System Design:

1. Provide new roof tapered insulation system design drawings. Indicate valleys, ridges, crickets, and surface slopes at all locations.
2. Provide isometric cross-sectional drawing of tapered system build-ups identifying each flat and tapered panel required to achieve slope in each location.

E. Manufacturer Installation Instructions:

1. Include manufacturer's written instructions for evaluating, preparing, and treating each substrate; technical data; and tested physical and performance properties of products.
2. Include precautions, limitations, and recommended backing materials and tools.

F. Manufacturer Certification Letter:

1. A letter from the proposed roof system manufacturer stating that the contractor is an approved applicator of the proposed roof system, and capable of providing the specified manufacturers warranty for that system.

G. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company’s warranty for the system specified.

1. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
2. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty.

H. Color Charts: Provide three copies if each.

1. Manufacturer standard KEE membrane color charts.
2. Manufacturer standard KEE system sealant color charts.

1.06 CLOSEOUT SUBMITTALS

A. Special Installer Warranty: Executed warranty meeting specified requirements.

B. Special Manufacturer Warranty: Executed warranty meeting specified requirements. Warranty shall be completed in Owner's name and registered with manufacturer.

C. Maintenance Data: Provide manufacturer maintenance instructions for the materials of this Section.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is has been their approved application in good standing for the past five (5) consecutive years prior to project bid date. Installer must have been in business under the same name for at least five (5) consecutive years. Contractor shall be approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's twenty (20) year warranty.

1. Installer's Field Supervision: Installer is required to maintain a full-time supervisor / foreman, with supervision-only responsibilities, on job site during times that sheet membrane roofing work is in progress. The individual shall be experienced in installation of roofing systems similar to type and scope required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer that has UL listing and FMG approval for membrane roofing system identical to that used for this Project. Manufacturer shall have a minimum ten (10) years of successful manufacture of membrane using the same membrane formulation.

1. Obtain components for roofing system from or approved by roofing system manufacturer Provide primary products, including each type of roofing sheet, flashings, and vapor barrier (where used), produced by a single manufacturer. Provide secondary products only as recommended and approved by the manufacturer of primary products for use with roofing system specified.

2. Manufacturer’s Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design and extent to those specified for this Project. Manufacturer’s Sales Representative will not be accepted as a Technical Representative. When material and labor, no dollar limit warranties are specified, provide the following:

a. Present at job startup.

b. Perform manufacturer final inspection for warranty release and execution.

C. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer. Provide primary products, including each type of roofing sheet, flashings, and vapor barrier (if any), produced by a single manufacturer. Provide secondary products only as recommenced by the manufacturer of primary products for use with roofing system specified.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturers written instructions for handling, storing, and protecting during installation.

D. Store and handle roofing roll goods and rigid boards in a manner, which will ensure that there is no possibility of significant moisture pick-up.

E. All material must be protected from the weather by protective tarps. Manufacturer's plastic covers are not acceptable means of protection.

F. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.09 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

B. At the end of each days work temporary cut-offs and tie-ins shall be made weathertight, no exceptions.

C. At the end of the days work all materials stored materials are to be recovered, tied and weighted down.

1.10 WARRANTY

A. General: The Contractor shall provide both a Manufacturer's Roof System Warranty, and Contractor Roof Warranty.

1. Warranties which contain language regarding the governing of the warranty by any state other than the State of Georgia, must be amended to exclude such language, and substituting the requirement that the laws of the State of Georgia shall govern all such warranties.

B. Special Manufacturer Roof System Warranty:

1. Manufacturer's Warranty: Manufacturer's TOTAL SYSTEM WARRANTY, "No Dollar Limit" (NDL) "Without Monetary Limitations", in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.

a. Special warranty includes the following items when used; roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, recovery boards, and manufactured gravel stops and fascia.

b. Warranty Period: Twenty years from date of Acceptance.

C. Special Installer Warranty: Furnish a written warranty signed by the installer guaranteeing materials and workmanship of this Section including watertightness of the roofing system, flashings, penetrations, and against all leaks in the installed system.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with specified roof system requirements, provide products by the following:

1. KEE Membrane Roofing:

a. Basis of Design: FiberTite by Seaman Corporation.

b. Ecology Roof Systems, Inc.

c. Tremco Roof Systems, Inc.

B. Source Limitations: Obtain components for roofing system from roof membrane system manufacturer.

C. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Products: Subject to compliance with requirements, provide one of the products specified.

2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 MATERIAL PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.

2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

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

2.03 KEE ROOF MEMBRANE, FLEECEBACK

A. Fabric-Reinforced KEE Sheet: ASTM D 6754 nominal 36 mil (0.91 mm) ketone ethylene ester (KEE) membrane reinforced with 4.5 oz per sq. yd (169.5 grams per sq m) knitted polyester fabric and heat bonded 4 oz (113.4 grams) polyester backing.

1. Exposed Face Color: As selected by Owner from manufacturer standard colors.

B. Product: Subject to compliance with specified roof system requirements, provide products by one of the following:

1. FiberTite KEE Fleeceback 36-mil FB by Seaman Corporation, is the basis of roof system design.
2. Approved equal manufacturers subject to compliance with specified requirements, are as follows:
   a. ERS 8000-FB KEE by Ecology Roof Systems, Inc. (Fullerton, CA)
   b. Tremply KEE Roofing Tremco Roof Systems, Inc. (Beechwood, OH)

2.04 ADHESIVES AND CLEANERS

A. All products shall be provided by the roof membrane manufacturer for use in the specified roof system.

B. KEE Bonding Adhesive: A high-strength, solvent borne, one sided contact adhesive used for bonding specified membrane to various surfaces. The adhesive is applied to the substrate only at membrane system manufacturers recommended coverage rate for specified warranty and performance requirements.

C. KEE Bonding Adhesive, Fleeceback: A high-strength, solvent borne, one sided contact adhesive used for bonding specified membrane to various surfaces. The adhesive is applied to the substrate only at membrane system manufacturers recommended coverage rate for specified warranty and performance requirements.

D. KEE Water Cut-Off Mastic: Used as mastic to prevent moisture migration at membrane terminations, compression terminations and beneath conventional metal edging (at a coverage rate of approximately 10' per tube or 100' per gallon).

E. General Purpose KEE System Sealant: A 100% solids, solvent free, one-part, polyether sealant that provides a weather tight seal to a variety of building substrates. Can be used as a termination bar sealant or for use in counterflashing, coping/parapet, and scupper details.

F. One-Part Pourable Sealer: A one-part, moisture curing, elastomeric polyether sealant used to fill Molded Sealant Pockets. Packaged in four 1/2 gallon pouches per plastic bucket. One pouch will fill one Molded Sealant Pocket.

G. Foil Grip Aluminum Tape: A general-purpose pressure-sensitive sealant used as a bond break at joints in KEE Coated Metal. Packaged in rolls 2" wide by 100' long.

H. KEE Membrane Cleaner: Used to prepare membrane that has been exposed to the elements for approximately 7 days prior to heat welding or to remove general construction dirt at an approximate coverage rate of 400 square feet per gallon (one surface).

I. Insulation Adhesive: Membrane manufacturers own two component insulating urethane adhesive used to attach insulation. Packaging formats include 50 and 15 gallon drums as well as Dual Cartridges and 5 gallon Bag in a Box packaging.

2.05 AUXILIARY MATERIALS AND ACCESSORIES

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing system. Items used from the section must be acceptable to the system manufacturer for use in conjunction with their roof system, and not effect specified warranty coverage.

B. Simulated Metal Roofing Profile (SMRP):

1. Ornamental co-extrusion with a heat-activated KEE adhesive strip provided by Seaman Corporation.
2. Height and Width: Manufacturer standard matching Consultant sample.
3. Lengths: 100 foot (30.48 m) continuous lengths.
4. Installation: Fully, continuously heat welded.
5. Color: As selected by Architect to match adjacent KEE roof membrane.

C. Fastener Requirements: Factory-coated steel fasteners and metal plates, batten bars and termination bars meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing system components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer. Tested to meet or exceed specified wind uplift requirements.

1. Fasteners subject to compliance with specified roof system performance requirements.
2. Base Flashing Nails: Galvanized Simplex large head nails 15/16-inch minimum diameter. Ringed shank.
3. Insulation Fasteners and Plates:
    a. Provide fasteners in by SFS, OMG, TRUFAST or fasteners provided by roof system manufacturer. Provide size recommended by manufacturer for project specific application necessary to comply with specified performance and warranty requirements and in compliance with applicable codes. Minimum #14 fastener size.
    b. Provide 3-inch diameter, galvanized steel plates approved by the fastener for specified wind uplift requirements.

D. Nailers and Blocking: Specified in Section 06 100 - Rough Carpentry.

E. Termination Bar: Prefabricated 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support lap sealant and provide increased stability for membrane terminations.

F. Term Bar Nail-Ins: A min. 1-1/4” long expansion anchor with a zinc plated steel drive pin used for fastening the Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.

G. Condensation Drain Line Supports: Provide drain line support at HVAC equipment condensation drain lines, spaced as required for stability and as recommended by support manufacturer.

1. Manufacturers: Erico Inc. or Miro Industries.
2. Pipe supports must be roller equipped.

3. Equip with pipe strap as required by applicable governing authority.

H. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer such as pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.06 ROOF SYSTEM SHEET METAL COMPONENTS

A. Metal Counterflashings and Trim:

1. Refer to Section 07 6200 - Sheet Metal Flashing And Trim.

2.07 COLD FLUID APPLIED PENETRATION FLASHING MEMBRANE

A. Fully reinforced, cold fluid applied flashing membrane for use on KEE roof systems and for inclusion into the specified project warranty.

1. Product: Membrane provided by or approved for use with the specified warranty by the primary membrane manufacturer, subject to compliance with this specification.
2. A rapid-curing, proprietary formulation of polymethyl-methacrylate (PMMA) liquid flashing resin. Fully reinforced with reinforcing fabric to form a flexible and monolithic, UV and color stable, odor and solvent free, Low VOC, highly reflective and utilize a fire-rated resin designed for roofing applications. Reinforced membrane designed for use in flashing and detail applications.
3. Membrane Thickness: 80 mils minimum (finished)

B. Approved Products: Use membrane products approved by KEE membrane manufacturer. Provide all products and materials needed for a complete, watertight, fully warrantable installation.

PART 3 - EXECUTION

3.01 ROOFING, GENERAL

A. Refer to applicable requirements for demolition and removal of the existing materials.

B. No roofing materials will be removed or installed under adverse weather conditions. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks.

C. Only as much existing roofing shall be removed and new roofing installed as can be made weathertight each day. This includes all flashing work.

D. Any unusual or concealed conditions discovered during the course of the work that may adversely affect the performance of the new roof system must be immediately reported to the Consultant. All work shall be halted until the Consultant has responded with a solution to the problem.

E. Any substrate to receive new insulation, membrane or flashing shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on the decking, the contractor shall provide adequate equipment to dry the substrate.

F. Temporary waterstops shall be installed at the end of each work day and if inclement weather conditions dictate during the course of day's work. These temporary waterstops shall be removed at the start of the next work day and disposed of properly. No temporary waterstops shall be made so as to obstruct water flow on the completed system. Polyethylene is not considered a temporary covering.

3.02 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place, set and braced.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and nailers match thicknesses of insulation.
3. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of materials of this section indicates acceptance of substrates and conditions.

3.03 PREPARATION

A. Clean and prepare substrate according to manufacturers written recommendations. Provide clean, dust-free, and dry substrate for roofing application.

B. Mask off adjoining surfaces not receiving roofing to prevent spillage from affecting other construction.

C. Protect deck penetrations to prevent spillage and migration of roofing fluids.

D. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

3.04 WOOD NAILERS

A. Treated wood nailers shall be installed as indicated on project drawings. Refer to applicable specification section for rough carpentry.

B. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the membrane is to be applied.

C. Where existing nailers are not reused, install new continuous pressure treated nailers at all locations where new roof system edge metal shall be installed such as at parapets and gravel stops/drip edges.

3.05 FASTENER INSTALLATION

A. General:

1. All roof system components shall be securely attached in accordance with specified wind resistance and applicable code requirements.
2. Provide fasteners that are accepted by the manufacturer of the roof membrane system and compatible with adjacent components (i.e. non-corrosive to adjacent materials).
3. Fasteners shall be installed in accordance with specified wind resistance and applicable code requirements.
4. Fasteners and associated assemblies shall be installed to avoid abrasion to the membrane.

B. The fastener manufacturer's recommendations shall be followed for:

1. Fastener suitability for specific applications
2. Proper drill bit for drilling correct hole size diameter and depth.
3. Minimum depth of embedment into substrate to achieve required resistance to pull out.
4. Fastener length to provide proper fastening into substrate.
5. Installation tools.

C. Fasteners that are improperly installed shall be removed or corrected. Improper application may be characterized as:

1. Overdriven: Fastener is driven to the point that it is causing the stress distribution surface to become concave (or deformed in the case of batten strips) excessive driving may cause failure by disengaging the fastener threads from the deck).
2. Under-driven: Fastener head is not properly seated on the stress distribution surface.
3. Snapped: Fastener breaks under the driving load.
4. Bent: Fastener is bent to the point that it adversely affects the installation.
5. Not engaged: Fastener is improperly located or is of insufficient length.

3.06 FULLY ADHERED ROOFING INSTALLATION

A. Fully adhere KEE roof membrane system over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before adhering.

B. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

C. Mechanically fasten or adhere roofing securely at terminations, penetrations, and perimeter of roofing.

D. Apply roofing with side laps shingled with slope of roof deck where possible.

E. Membrane Attachment: Adhere KEE membrane in full coverage application of specified KEE membrane bonding adhesive.

F. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

G. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet.

H. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.

I. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

3.07 KEE MEMBRANE HEAT WELDED SEAM INSTALLATION, GENERAL

A. Heat weld the KEE membrane using an Automatic Heat Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller immediately after the welder causes the membrane step off to ensure a continuous hot air welded seam.

B. All splice intersections shall be overlaid with pre-fabricated T Joint Covers.

C. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).

D. Repair all seam deficiencies the same day they are discovered.

3.08 FLASHING INSTALLATION

A. Ensure substrates are installed prepared in accordance with manufacturer requirements.

B. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

C. All base flashings shall be adhered in full coverage application of KEE membrane bonding adhesive, no exceptions.

D. 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.

E. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

F. 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.

G. Terminate and seal top of sheet flashings and mechanically anchor to substrate with termination bars.

3.09 PENETRATIONS

A. Flash all penetrations with specified fluid applied flashing membrane in accordance with membrane manufacturer details for specified warranty. .

3.10 FLASHINGS, PREFABRICATED BOOTS

A. Install in accordance with project diagrams and roofing system manufacturer's written instructions.

3.11 WATER CUT-OFF

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

3.12 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.

B. Test Cuts: Test specimens may be removed to evaluate problems observed during quality-assurance inspections of roofing membrane as follows:

1. Approximate quantities of components within roofing membrane will be determined according to ASTM D 3617.
2. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
3. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Consultant. Notify Consultant 48 hours in advance of date and time of inspection.

1. Notify Consultant or Owner 48 hours in advance of date and time of inspection.

D. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.13 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to the Consultant and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION

SECTION 07 5425

PVC METALLIC THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. For use only if accepted by Alternate.

B. Section Includes:

1. New Polyvinyl Chloride (PVC) membrane roof system.
2. Miscellaneous system accessories and components.

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," before multiplication by a safety factor.

C. Factored Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," after multiplication by a safety factor.

1.04 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Assembly: Provide a roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to current applicable State of Georgia accepted ASCE 7, as specified.

D. Wind, Fire and Hail Resistance:

1. FMG Listing: Provide a complete system including roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as

part of a roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.

a. Fire/Windstorm Classification: Class 1A-90.

b. Hail Resistance: SH.

2. Miami Dade NOA: Alternately, a complete system NOA approval may be provided in lieu of FM approval.

a. Windstorm Classification: -45 psf

3. If any variation exists between the specified approval requirements, and the manufacturers proposed assembly, the manufacturer must provide detailed summary of differences for review and approval.

4. For recover projects, provide statement from membrane manufacturer clarifying applicability of referenced wind uplift approval to the specific project recover conditions.

E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, and/or FMG. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: ASTM E108/UL 790 Class A fire resistance for application and roof slopes indicated.

F. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, or the “Resistance to Foot Traffic Test “ FM 4470.

G. Agency Approvals:

1. All products used shall bear Factory Mutual Global (FMG) and Underwriters Laboratories (UL) approval.

2. Designated seal of approval shall be clearly visible on all product packing.

3. System and components shall comply with applicable state International Building Code (IBC) requirements including ANSI-SPRI/ES-1.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer product data sheets indicating material characteristics, performance criteria, and limitations.

1. PVC membrane.

2. PVC flashing membrane.

3. Cold fluid applied flashing membrane.

4. System fastening and securement items.

5. Sealants.

B. Shop Drawings: Provide PVC roof membrane system shop drawing package including all drawings and details depicted in Base Bid project diagrams. Any additional cost required to produce shop drawing package shall be paid by the Contractor.

1. Shop drawings must be project specific, manufacturer standard details are not acceptable.
2. Contractor provided shop drawing plans and details to be reviewed and approved by PVC system manufacturer for specified project PVC roof system warranty.
3. Each shop drawing detail must include signed and dated acceptance by PVC system manufacturer technical department representative.

C. Tapered Insulation System Design:

1. Provide new roof tapered insulation system design drawings. Indicate valleys, ridges, crickets, and surface slopes at all locations.
2. Provide isometric cross-sectional drawing of tapered system build-ups identifying each flat and tapered panel required to achieve slope in each location.

D. Manufacturer Installation Instructions:

1. Include manufacturer's written instructions for evaluating, preparing, and treating each substrate; technical data; and tested physical and performance properties of products.
2. Include precautions, limitations, and recommended backing materials and tools.

E. Manufacturer Certification Letter:

1. A letter from the proposed roof system manufacturer stating that the contractor is an approved applicator of the proposed roof system, and capable of providing the specified manufacturers warranty for that system.

F. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company’s warranty for the system specified.

1. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
2. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty.

G. Color Charts: Provide three copies if each.

1. Manufacturer standard PVC membrane color charts.
2. Manufacturer standard PVC system sealant color charts.

1.06 CLOSEOUT SUBMITTALS

A. Special Installer Warranty: Executed warranty meeting specified requirements.

B. Special Manufacturer Warranty: Executed warranty meeting specified requirements. Warranty shall be completed in Owner's name and registered with manufacturer.

C. Maintenance Data: Provide manufacturer maintenance instructions for the materials of this Section.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is has been their approved application in good standing for the past five (5) consecutive years prior to project bid date. Installer must have been in business under the same name for at least five (5) consecutive years. Contractor shall

be approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's twenty (20) year warranty.

1. Installer's Field Supervision: Installer is required to maintain a full-time supervisor / foreman, with supervision-only responsibilities, on job site during times that sheet membrane roofing work is in progress. The individual shall be experienced in installation of roofing systems similar to type and scope required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer that has UL listing and FMG approval for membrane roofing system identical to that used for this Project. Manufacturer shall have a minimum ten (10) years of successful manufacture of membrane using the same membrane formulation.

1. Obtain components for roofing system from or approved by roofing system manufacturer Provide primary products, including each type of roofing sheet, flashings, and vapor barrier (where used), produced by a single manufacturer. Provide secondary products only as recommended and approved by the manufacturer of primary products for use with roofing system specified.
2. Manufacturer’s Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design and extent to those specified for this Project. Manufacturer’s Sales Representative will not be accepted as a Technical Representative. When material and labor, no dollar limit warranties are specified, provide the following:
    a. Present at job startup.
    b. Perform manufacturer final inspection for warranty release and execution.

C. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer. Provide primary products, including each type of roofing sheet, flashings, and vapor barrier (if any), produced by a single manufacturer. Provide secondary products only as recommenced by the manufacturer of primary products for use with roofing system specified.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturers written instructions for handling, storing, and protecting during installation.

D. Store and handle roofing roll goods and rigid boards in a manner, which will ensure that there is no possibility of significant moisture pick-up.

E. All material must be protected from the weather by protective tarps. Manufacturer's plastic covers are not acceptable means of protection.

F. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.09 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

B. At the end of each days work temporary cut-offs and tie-ins shall be made weathertight, no exceptions.

C. At the end of the days work all materials stored materials are to be recovered, tied and weighted down.

1.10 WARRANTY

A. General: The Contractor shall provide both a Manufacturer's Roof System Warranty, and Contractor Roof Warranty.

1. Warranties which contain language regarding the governing of the warranty by any state other than the State of Georgia, must be amended to exclude such language, and substituting the requirement that the laws of the State of Georgia shall govern all such warranties.

B. Special Manufacturer Roof System Warranty:

1. Manufacturer's Warranty: Manufacturer's TOTAL SYSTEM WARRANTY, "No Dollar Limit" (NDL) "Without Monetary Limitations", in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.

a. Special warranty includes the following items when used; roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, cover boards, and manufactured gravel stops and fascia.

b. Warranty Period: Twenty years from date of Acceptance.

C. Special Installer Warranty: Furnish a written warranty signed by the installer guaranteeing materials and workmanship of this Section including watertightness of the roofing system, flashings, penetrations, and against all leaks in the installed system.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with specified roof system requirements, provide products by the following:

1. PVC Membrane Roofing:
    a. Carlisle-Syntec, Inc.
    b. Fibertite (Seaman Corporation), Inc.
    c. GAF, Inc.
    d. Johns Manville, Inc.
    e. Siplast, Inc.
    f. Soprema, Inc.

B. Source Limitations: Obtain components for roofing system from roof membrane system manufacturer.

C. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
    1. Products: Subject to compliance with requirements, provide one of the products specified.
    2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 MATERIAL PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
    1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
    2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

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

2.03 PVC ROOF MEMBRANE, STANDARD METALLIC

A. Fabric-Reinforced PVC Metallic Sheet: Polyester reinforced, thermoplastic polyvinyl chloride membrane with a smooth back underside.
    1. Basis of Design: Sentinel Silverart P150 by Soprema, Inc.
    2. Thickness: 60 mils (1.5 mm)

3. Width: 5.25 ft (1.6 m)
4. Length: 65.6 ft (20 m)
5. Meets or exceeds ASTM D4434.
6. Color: Silver

2.04 PVC ROOF MEMBRANE, FLEECEBACK

A. Fleece-backed Fabric-Reinforced PVC Metallic Sheet: Polyester reinforced, thermoplastic polyvinyl chloride membrane with a heavy fleece back underside.
   1. Basis of Design: Sentinel Silverart P150 HFB by Soprema, Inc.
   2. Thickness: 60 mils (1.5 mm)
   3. Width: 5.25 ft (1.6 m)
   4. Length: 65.6 ft (20 m)
   5. Meets or exceeds ASTM D4434.
   6. Color: Silver

2.05 PVC ROOF FLASHING MEMBRANE, STANDARD METALLIC

A. Fabric-Reinforced PVC Metallic Sheet: Polyester reinforced, thermoplastic polyvinyl chloride membrane with a smooth back underside.
   1. Basis of Design: Sentinel Silverart P150 by Soprema, Inc.
   2. Thickness: 60 mils (1.5 mm)
   3. Width: 5.25 ft (1.6 m)
   4. Length: 65.6 ft (20 m)
   5. Meets or exceeds ASTM D4434.
   6. Color: Silver

2.06 ADHESIVES AND CLEANERS

A. All products shall be provided by the roof membrane manufacturer for use in the specified roof system.

B. PVC Bonding Adhesive: A high-strength, solvent borne, one sided contact adhesive used for bonding specified membrane to various surfaces. The adhesive is applied to the substrate only at membrane system manufacturers recommended coverage rate for specified warranty and performance requirements.

C. PVC Bonding Adhesive, Fleeceback: A high-strength, solvent borne, one sided contact adhesive used for bonding specified membrane to various surfaces. The adhesive is applied to the substrate only at membrane system manufacturers recommended coverage rate for specified warranty and performance requirements.

D. PVC Water Cut-Off Mastic: Used as mastic to prevent moisture migration at membrane terminations, compression terminations and beneath conventional metal edging (at a coverage rate of approximately 10' per tube or 100' per gallon).

E. General Purpose PVC System Sealant: A 100% solids, solvent free, one-part, polyether sealant that provides a weather tight seal to a variety of building substrates. Can be used as a termination bar sealant or for use in counterflashing, coping/parapet, and scupper details.

F. One-Part Pourable Sealer: A one-part, moisture curing, elastomeric polyether sealant used to fill Molded Sealant Pockets. Packaged in four 1/2 gallon pouches per plastic bucket. One pouch will fill one Molded Sealant Pocket.

G. Foil Grip Aluminum Tape: A general-purpose pressure-sensitive sealant used as a bond break at joints in PVC Coated Metal. Packaged in rolls 2" wide by 100' long.

H. PVC Membrane Cleaner: Used to prepare membrane that has been exposed to the elements for approximately 7 days prior to heat welding or to remove general construction dirt at an approximate coverage rate of 400 square feet per gallon (one surface).

I. Insulation Adhesive: Membrane manufacturers own two component insulating urethane adhesive used to attach insulation. Packaging formats include 50 and 15 gallon drums as well as Dual Cartridges and 5 gallon Bag in a Box packaging.

2.07 AUXILIARY MATERIALS AND ACCESSORIES

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing system. Items used from the section must be acceptable to the system manufacturer for use in conjunction with their roof system, and not effect specified warranty coverage.

B. Sheet Metal Flashings: Refer to Section 07 6200 - Sheet Metal Flashing and Trim. For indicated to be metal coated with heat weldable membrane surface to match roof membrane system provide sheet metal flashing by primary roof membrane system manufacturer.

1. Basis of Design: Sentinel Silverart VCM by Soprema, Inc.
    a. PVC coated metal.
    b. Width: 3.28 ft (1 m)
    c. Length: 9.84 ft (3 m)
    d. Color: silver

C. Simulated Metal Roofing Profile Bars:

1. Ornamental co-extrusion with a heat-activated PVC adhesive strip provided by primary membrane manufacturer to match field membrane.
2. Height and Width: Manufacturer standard matching Consultant sample.
3. Lengths: 9.84 foot continuous lengths. Provide manufacturer standard in longest lengths available.
4. Installation: Fully, continuously heat welded.
5. Color: As selected by Architect to match adjacent PVC roof membrane.

D. Fastener Requirements: Factory-coated steel fasteners and metal plates, batten bars and termination bars meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing system components to substrate, tested by manufacturer for required pullout

strength, and acceptable to roofing system manufacturer. Tested to meet or exceed specified wind uplift requirements.

1. Fasteners subject to compliance with specified roof system performance requirements.
2. Base Flashing Nails: Galvanized Simplex large head nails 15/16-inch minimum diameter. Ringed shank.
3. Steel Deck Insulation Fasteners and Plates:
    a. Extra Heavy Duty #15 by SFS, OMG, TRUFAST or fasteners provided by roof system manufacturer.
    b. Provide 3-inch diameter, galvanized steel plates approved by the fastener for specified wind uplift requirements.

E. Nailers and Blocking: Specified in Section 06 100 - Rough Carpentry.

F. Termination Bar: Prefabricated 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support lap sealant and provide increased stability for membrane terminations.

G. Term Bar Nail-Ins: A min. 1-1/4” long expansion anchor with a zinc plated steel drive pin used for fastening the Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.

H. Condensation Drain Line Supports: Provide drain line support at HVAC equipment condensation drain lines, spaced as required for stability and as recommended by support manufacturer.

1. Manufacturers: Erico Inc. or Miro Industries.
2. Pipe supports must be roller equipped.
3. Equip with pipe strap as required by applicable governing authority.

I. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer such as pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.08 ROOF SYSTEM SHEET METAL COMPONENTS

A. Metal Counterflashings and Trim:

1. Refer to Section 07 6200 - Sheet Metal Flashing And Trim.

2.09 COLD FLUID APPLIED PENETRATION FLASHING MEMBRANE

A. Fully reinforced, cold fluid applied flashing membrane for use on PVC roof systems and for inclusion into the specified project warranty.

1. Product: Membrane provided by or approved for use with the specified warranty by the primary membrane manufacturer, subject to compliance with this specification.
2. A rapid-curing, proprietary formulation of polymethyl-methacrylate (PMMA) liquid flashing resin. Fully reinforced with reinforcing fabric to form a flexible and monolithic, UV and color stable, odor and solvent free, Low VOC, highly reflective and utilize a fire-

rated resin designed for roofing applications. Reinforced membrane designed for use in flashing and detail applications.

3. Membrane Thickness: 80 mils minimum (finished)

B. Approved Products: Use membrane products approved by PVC membrane manufacturer. Provide all products and materials needed for a complete, watertight, fully warrantable installation.

2.10 COVER BOARD OR RECOVERY BOARD

A. For use beneath all new roof membrane field (horizontal) installation areas including directly over wood roof deck and as a cover board over existing roof systems.

B. General: Choose one of the following in accordance with roof membrane manufacturer requirements for roof system performance and warranty requirements.

1. Gypsum Board, ASTM C 1177, glass-mat, water and fire-resistant gypsum board designed for roofing applications.
    a. Thickness: 1/4-inch thick minimum.
    b. Product: Subject to compliance with requirements, provide "Dens-Deck Prime" by Georgia-Pacific Corporation.
2. Gypsum-Fiber Roof Board: ASTM C 1278, fiber reinforced gypsum panel, water and fire-resistant gypsum board designed for roofing applications.
    a. Thickness: 1/4-inch thick minimum.
    b. Product: Subject to compliance with requirements, provide "Securock" by US Gypsum (USG) Corporation.

2.11 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

B. Insulation and/or Cover Board Adhesive: Roof insulation and cover board adhesive provided by primary roof membrane manufacturer.

1. Provide adhesive required by manufacturer for specified warranty and as required to meet specified roof system Performance Requirements.

PART 3 - EXECUTION

3.01 ROOFING, GENERAL

A. Refer to applicable requirements for demolition and removal of the existing materials.

B. No roofing materials will be removed or installed under adverse weather conditions. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks.

C. Only as much existing roofing shall be removed and new roofing installed as can be made weathertight each day. This includes all flashing work.

D. Any unusual or concealed conditions discovered during the course of the work that may adversely affect the performance of the new roof system must be immediately reported to the Consultant. All work shall be halted until the Consultant has responded with a solution to the problem.

E. Any substrate to receive new insulation, membrane or flashing shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on the decking, the contractor shall provide adequate equipment to dry the substrate.

F. Temporary waterstops shall be installed at the end of each work day and if inclement weather conditions dictate during the course of day's work. These temporary waterstops shall be removed at the start of the next work day and disposed of properly. No temporary waterstops shall be made so as to obstruct water flow on the completed system. Polyethylene is not considered a temporary covering.

3.02 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place, set and braced.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and nailers match thicknesses of insulation.
3. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of materials of this section indicates acceptance of substrates and conditions.

3.03 PREPARATION

A. Clean and prepare substrate according to manufacturers written recommendations. Provide clean, dust-free, and dry substrate for roofing application.

B. Mask off adjoining surfaces not receiving roofing to prevent spillage from affecting other construction.

C. Protect deck penetrations to prevent spillage and migration of roofing fluids.

D. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

3.04 WOOD NAILERS

A. Treated wood nailers shall be installed as indicated on project drawings. Refer to applicable specification section for rough carpentry.

B. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the membrane is to be applied.

C. Where existing nailers are not reused, install new continuous pressure treated nailers at all locations where new roof system edge metal shall be installed such as at parapets and gravel stops/drip edges.

3.05 FASTENER INSTALLATION

A. General:

1. All roof system components shall be securely attached in accordance with specified wind resistance and applicable code requirements.
2. Provide fasteners that are accepted by the manufacturer of the roof membrane system and compatible with adjacent components (i.e. non-corrosive to adjacent materials).
3. Fasteners shall be installed in accordance with specified wind resistance and applicable code requirements.
4. Fasteners and associated assemblies shall be installed to avoid abrasion to the membrane.

B. The fastener manufacturer's recommendations shall be followed for:

1. Fastener suitability for specific applications
2. Proper drill bit for drilling correct hole size diameter and depth.
3. Minimum depth of embedment into substrate to achieve required resistance to pull out.
4. Fastener length to provide proper fastening into substrate.
5. Installation tools.

C. Fasteners that are improperly installed shall be removed or corrected. Improper application may be characterized as:

1. Overdriven: Fastener is driven to the point that it is causing the stress distribution surface to become concave (or deformed in the case of batten strips) excessive driving may cause failure by disengaging the fastener threads from the deck).
2. Under-driven: Fastener head is not properly seated on the stress distribution surface.
3. Snapped: Fastener breaks under the driving load.
4. Bent: Fastener is bent to the point that it adversely affects the installation.
5. Not engaged: Fastener is improperly located or is of insufficient length.

3.06 COVER BOARD INSTALLATION

A. General: Comply with cover board manufacturer's instructions and recommendations for the handling installation, and bonding or anchorage of cover board to substrate.

B. Over Wood Decks:

1. Cover board shall be attached utilizing specified fasteners and plates using spacing, and patterns required to meet specified wind uplift, and building code requirements.

a. Where required to meet specified wind uplift performance requirements, cover board shall be set in specified insulation adhesive in required to achieve specified wind uplift and wind speed warranty requirements.

2. It is acceptable for cover board to be attached utilizing specified insulation and cover board adhesive using bead sizes, spacing, and patterns required to meet specified wind uplift, and building code requirements.

C. Ensure that finished surface of new cover board is installed to provide smooth transition for new roof membrane to be installed above.

1. Provide tapered edge strips at roof system drainage points.

3.07 FULLY ADHERED ROOF MEMBRANE INSTALLATION

A. Fully adhere PVC roof membrane system over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before adhering.

1. Partial, splatter pattern adhesion is acceptable subject to compliance with project requirements and in accordance with membrane system manufacturer recommendations.

B. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

C. Mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

D. Apply roof membrane with side laps shingled with slope of roof deck where possible.

E. Membrane Attachment: Adhere PVC membrane in full coverage application of specified PVC membrane bonding adhesive.

F. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

G. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet.

H. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.

I. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

3.08 PVC MEMBRANE HEAT WELDED SEAM INSTALLATION, GENERAL

A. Heat weld the PVC membrane using an Automatic Heat Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller immediately after the welder causes the membrane step off to ensure a continuous hot air welded seam.

B. All splice intersections shall be overlaid with pre-fabricated T Joint Covers.

C. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).

D. Repair all seam deficiencies the same day they are discovered.

3.09 FLASHING INSTALLATION

A. Ensure substrates are installed prepared in accordance with manufacturer requirements. Provide flashing cover boards where indicated.

B. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

1. NOTE: All base flashings shall be adhered in full coverage application of PVC membrane bonding adhesive, no exceptions.

C. 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.

D. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

E. 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.

F. Terminate and seal top of sheet flashings and mechanically anchor to substrate with termination bars.

3.10 PENETRATIONS

A. Flash all penetrations with specified fluid applied flashing membrane in accordance with membrane manufacturer details for specified warranty. .

3.11 FLASHINGS, PREFABRICATED BOOTS

A. Install in accordance with project diagrams and roofing system manufacturer's written instructions.

3.12 STANDING SEAM PROFILE BARS

A. Install specified Simulated Metal Roofing Profile bars in locations indicated on Drawings. Comply with manufacturer instructions, recommendations, and requirements for installation. Profile bars shall be installed straight, true, and parallel to roof slope.

3.13 WATER CUT-OFF

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

3.14 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.

B. Test Cuts: Test specimens may be removed to evaluate problems observed during quality-assurance inspections of roofing membrane as follows:

1. Approximate quantities of components within roofing membrane will be determined according to ASTM D 3617.
2. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
3. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

C. Final Roof Inspection: Arrange for roofing system manufacturer’s technical personnel to inspect roofing installation on completion and submit report to Consultant. Notify Consultant 48 hours in advance of date and time of inspection.

1. Notify Consultant or Owner 48 hours in advance of date and time of inspection.

D. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.15 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to the Consultant and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes formed sheet metal component fabrications.
   1. Formed roof-drainage sheet metal fabrications.

1.03 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.

B. Coordinate sheet metal flashing and trim installation with adjoining materials, joints, and seams to provide leak-proof, secure, and noncorrosive installation.

1.04 DEFINITIONS

A. Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to work in this Section.

1.05 SUBMITTALS, SHEET METAL

A. Comply with the requirements of Section 01 3300 - Submittal Procedures.

B. Product Data: For each of the following
   1. Underlayment materials.
   2. Each type of sheet metal.
   3. Sheet metal painted finishes.
   4. Sealants within sheet metal fabrications.

C. Shop Drawings: For sheet metal flashing and trim including, but not limited to, the following.
   1. Plans, elevations, and sections. Minimum scale for elevations shall be 1-1/2 inch equals one foot. Minimum scale for sections and details shall be 3 inches equals one foot.
   2. Details for profiles, shapes, seams, and dimensions.
   3. Details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
   4. Details of termination points.
   5. Details of special conditions.

6. Details of connections to adjoining work.
7. Distinguish between shop- and field-assembled Work.
8. Identification of material, thickness, weight, and finish for each item and location used.
9. Downspouts: If awarded by Alternate, provide shop drawings of downspout leaders.

D. Qualification Data: For fabricator.

1. Provide written evidence of metal fabrication shop compliance with ANSI-SPRI ES-1 shop certification as required to provide ANSI-SPRI wind rated sheet metal fabrications. Provide copy of most recent shop certification along with a copy of current ANSI-SPRI ES-1 shop certification requirements.

E. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company's warranty for the system specified.

1. Sample Finish Warranty: Provide example of Finish Warranty proposed for use on this project.
2. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
3. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty.

F. Color Charts: Submit three manufacturer color charts for initial color selection.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: For materials and accessories.

B. Executed Installer Warranty: Submit installer warranty executed in Owner's name.

C. Executed Manufacturer Warranty: Submit manufacturer warranty executed in Owner's name.

1.07 QUALITY ASSURANCE

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

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

C. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.09 WARRANTY

A. Installer Special Warranty: Installers special warranty covering defects resulting from materials and workmanship for the Work of this section.

1. Defects include failure of the system to prevent water from entering the structure below or behind, and failure of materials to perform in the intended use.
2. Warranty Period: Two (2) years from date of Substantial Completion.

B. Special Painted Metal Finish Warranty: 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 Substantial Completion.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. System and components shall comply with applicable state International Building Code (IBC) requirements including ANSI-SPRI/ES-1.

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 (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.02 SHEET METALS

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

2.03 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
    a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
    b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
2. Fasteners for Zinc-Coated (Galvanized) Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless.
3. Fasteners for attachment of wood nailers and blocking: Series 300 Stainless steel screws.

C. Urethane Elastomeric Sealant: Masterseal NP-1 or Sikaflex 1A.

D. Butyl Sealant Tape: Isobutylene-Isoprene Copolymer tape designed to adhered to all types of masonry, steel, aluminum, glass, wood and other common building materials. Meets requirements of ASTM C-1311 (+/- 7.5% joint movement).

1. Refer to Project Diagrams and Specifications for use.
2. 2-inch wide and 1/8-inch thick.
3. Not for exposed applications.
4. Basis of Design is SikaLastomer 65 manufactured by Sika Corporation.

E. Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag; not expected to withstand continuous water immersion or traffic.

1. Not for exposed or paintable applications.
2. Manufacturers:
    a. Sherwin-Williams Company; Storm Blaster All Season Sealant: www.sherwin-williams.com
    b. White Lightning, Inc.; Storm Blaster All Season Sealant: www.wlcaulk.com
    c. Tremco Butyl Sealant by Tremco, Inc. www.tremcosealants.com
    d. Pecora BC-158. www.pecora.com

2.04 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry,

metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4-inch in 20-feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Use lapped expansion joint unless otherwise shown.

D. Sealant Joints: Where movable, non expansion-type joints are required; form metal to provide for proper installation of elastomeric sealant as specified.

E. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use, rivet joints where necessary for strength.

F. Do not use graphite pencils to mark metal surfaces.

2.05 SHEET METAL FABRICATIONS, GENERAL

A. General: Any clarifications will be in accordance with National Roofing Contractors Association (NRCA) standards.

B. Roof System Edge Metal Cleats (Typical in All Locations):

1. Fabricate from the following materials:
    a. Provide cleat in metal type and gauge required for specified ANSI/SPRI ES-1 wind uplift test requirements.
    b. Ensure protection from corrosive action caused by contact of dissimilar metals.

2.06 AT MODIFIED BITUMEN ROOFS

A. Where an existing sheet metal component is specified to remain, and new metal is needed to address deficiencies in the existing metal assembly (i.e. damage, deterioration), provide new metal to match existing adjacent metal in the specific location being used.

B. Gravel Stop/Drip Edge Fascia Cladding:

1. Fabricate from the following materials:

a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

C. Trim Flashing/Skirt Flashing:

1. Fabricate from the following materials:

a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

D. Flashing Receivers and Miscellaneous Sheet Metal:

1. Fabricate from the following materials:

a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

2.07 AT PVC METALLIC SILVER ROOFS

A. Metal Copings:

1. Fabricate from the following materials:

a. PVC silver coated metal provided by roof membrane system manufacturer for use with specified PVC silver coated roof system. Provide in color to match specified PVC silver membrane. Refer to Section 07 5425 for additional requirements.

B. Ridge Cap:

1. Fabricate from the following materials:

a. PVC silver coated metal provided by roof membrane system manufacturer for use with specified PVC silver coated roof system. Provide in color to match specified PVC silver membrane. Refer to Section 07 5425 for additional requirements.

C. Counter-flashing:

1. Fabricate from the following materials:

a. PVC silver coated metal provided by roof membrane system manufacturer for use with specified PVC silver coated roof system. Provide in color to match specified PVC silver membrane. Refer to Section 07 5425 for additional requirements.

D. Drip Edge Fascia Cladding:

1. Fabricate from the following materials:

a. PVC silver coated metal provided by roof membrane system manufacturer for use with specified PVC silver coated roof system. Provide in color to match specified PVC silver membrane. Refer to Section 07 5425 for additional requirements.

E. Trim Flashing/Skirt Flashing:

1. Fabricate from the following materials:

a. PVC silver coated metal provided by roof membrane system manufacturer for use with specified PVC silver coated roof system. Provide in color to match specified PVC silver membrane. Refer to Section 07 5425 for additional requirements.

F. Flashing Receivers and Miscellaneous Sheet Metal:

1. Fabricate from the following materials:
    a. PVC silver coated metal provided by roof membrane system manufacturer for use with specified PVC silver coated roof system. Provide in color to match specified PVC silver membrane. Refer to Section 07 5425 for additional requirements.

2.08 AT KEE ROOFS

A. For use only if KEE roof system is accepted by Alternate.

B. Metal Copings:
    1. Fabricate from the following materials:
        a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

C. Counter-flashing:
    1. Fabricate from the following materials:
        a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

D. Drip Edge Fascia:
    1. Fabricate from the following materials in locations indicated:
        a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

E. Trim Flashing/Skirt Flashing:
    1. Fabricate from the following materials:
        a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

F. Flashing Receivers and Miscellaneous Sheet Metal :
    1. Fabricate from the following materials:
        a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

PART 3 - EXECUTION

3.01 EXAMINATION

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

B. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of materials of this section indicates acceptance of substrates and conditions.

3.02 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of connections and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Install exposed sheet metal flashing and trim without excessive oil canning, and free of buckling and tool marks.
4. Torch cutting of sheet metal flashing and trim is not permitted.
5. Cut sheet metal with snips to provide clean edge cuts. Do not grind or abrade metal for cuts.
6. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

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

3.03 INSTALLATION - DRAINAGE COMPONENTS

A. Downspouts:

1. Secure downspouts in place with concealed fasteners.
2. Fabricate and install in accordance with specified requirements and SMACNA "Architectural Sheet Metal Manual" (Current Edition) recommendations.
3. Secure downspouts to exterior walls at 18 inches on-center, maximum, using straps and fasteners appropriate for backup wall material configuration. Lap downspout joints 1-1/2 inches, minimum, and weld.
    a. Refer to SMACNA Manual, Figure 135C.

3.04 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.

3.05 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturers written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during installation.

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.

END OF SECTION

SECTION 07 9200

JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

A. Materials for use on this project where sealant, or caulk has been specified.
   1. Non-sag gunnable joint sealants.
   2. Sealant tape.
   3. Joint backings and accessories.

B. Where new sealants or caulk are in direct contact with new traffic coatings or waterproofing membrane, refer to new coating and waterproofing system specification section provided.

1.03 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials, prior to installation of new sealant.

B. Coordinate sheet metal flashing and trim installation with adjoining materials, joints, and seams to provide leak-proof, secure, and noncorrosive installation, prior to installation of new sealant.

1.04 SUBMITTALS

A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics including, but not limited to, the following:
      a. Movement capability.
      b. VOC content.
      c. Cure time.
   2. List of backing materials approved for use.
   3. Acceptable and compatible substrates.
   4. Unacceptable and compatible substrates.
   5. Primer requirements and recommendations.
   6. SWRI Validation: Provide currently available sealant product validations as listed by SWRI (VAL) for specified sealants.

B. Product Data for Accessory Products:

1. Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

C. Preinstallation Field Adhesion Test Reports:

1. Submit completed report log within 10 days after completion of tests.

D. Manufacturer Installation Instructions:

1. Include manufacturer's written instructions for evaluating, preparing, and treating each substrate; technical data; and tested physical and performance properties of products.
2. Include precautions, limitations, and recommended backing materials and tools.

E. Warranties: Complying with specified warranty requirements. Each example must be a preprinted representative sample of the issuing company’s warranty for the system specified.

1. Sample Installer Warranty: Provide example of installing contractor's Warranty proposed for use on this project.
2. Manufacturer Special Warranty: Provide example of Manufacturer Special Warranty for use on this project.

F. Color Charts: Submit three manufacturer color charts for initial color selection.

1.05 CLOSEOUT SUBMITTALS

A. Maintenance Data: For materials and accessories of this Section.

B. Executed Installer Warranty: Submit installer warranty executed in Owner's name.

C. Executed Manufacturer Warranty: Submit manufacturer warranty executed in Owner's name.

1.06 QUALITY ASSURANCE

A. Field Quality Control:

1. Contractor to provide pre-installation non-destructive field adhesion test.
2. Contractor to provide visual inspection of entire length of sealant joints during installation.
3. Contractor to provide field adhesion testing of sealant joints when requested by Consultant or Owner.

B. Non-Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.

1. Allow sealants to fully cure as recommended by manufacturer before testing.
2. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
3. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Consultant and Owner.

1.07 WARRANTY

A. Installer Special Warranty: Installers special warranty covering defects resulting from materials and workmanship for the Work of this section.

1. Defects include failure of the system to prevent water from entering the structure below or behind, and failure of materials to perform in the intended use.
2. Warranty Period: Two (2) years from date of Substantial Completion.

B. Manufacturer Special 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. Exterior Silicone Sealant Warranty Period: 20 years from date of Substantial Completion.
    a. Coverage: Sealants shall be free from defects in materials and not fail to provide structural adhesion, watertight weatherseal, and shall not stain substrates applied over.
2. Other Sealants Warranty Period: Five years from date of Substantial Completion.

C. Special warranties required may 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

2.01 MANUFACTURERS

A. Non-sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.

1. Dow Corning Corporation: www.dowcorning.com/construction.
2. Pecora Corporation: www.pecora.com.
3. Tremco Global Sealants: www.tremcosealants.com.
4. Sika Corporation: www.usa-sika.com.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:

1. Exterior Joints: In work areas included in project seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following.
    a. Joints between similar materials.

b. Joints between different exposed materials.

c. Where indicated on the Project Diagrams and in the Project Manual..

2. Do not seal the following types of joints.

a. Intentional weep holes.

b. Joints where sealant is specified is to be provided by manufacturer of product to be sealed.

c. Joints where installation of sealant is specified in another section.

2.03 NON-SAG JOINT SEALANTS

A. Sealant Type 1 - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.

1. For use on metal, concrete, stone, glass and other manufacturer approved substrates. Not for use in contact with traffic coatings, roofing or waterproofing membranes.

2. Paintability: Non-paintable.

3. Movement Capability: Plus and minus 50 percent, minimum.

4. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.

5. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.

6. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.

7. Color: To be selected by Consultant from manufacturer's standard range.

8. Cure Type: Single-component, neutral moisture curing.

9. Service Temperature Range: Minus 65 to 180 degrees F (Minus 54 to 82 degrees C).

10. Products: Basis of Design is products manufactured by Dow Corning Corporation.

a. Dow Corning Corporation; 790 Silicone Building Sealant: www.dowcorning.com/construction.

b. Dow Corning Corporation; 795 Silicone Building Sealant: www.dowcorning.com/construction.

c. Sika Corporation; Sikasil WS-295: www.usa-sika.com.

d. Tremco Commercial Sealants; SpecTrem 3: www.tremcosealants.com

B. Sealant Type 2 - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multicomponent; not expected to withstand continuous water immersion or traffic.

1. For use in direct contact with traffic coatings, roofing and waterproofing membranes. At new roof system installations, coordinate with recommendations of new roof membrane system manufacturer.

2. For use in exterior plywood joints.

3. Paintability: Paintable with water, oil, and rubber-based paints.

4. Movement Capability: Plus and minus 35 percent, minimum.

5. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.

6. Color: To be selected by Consultant from manufacturer's standard range.

7. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
8. Products:
    a. Sika Corporation; Sikaflex-1a: www.usa-sika.com.
    b. Masterseal NP-1. www.master-builders-solutions.com
    c. Tremco Dymonic 100. www.tremcosealants.com

C. Sealant Type 3 - Butyl Sealant: One-part gun grade caulking, sealing and glazing compound formulated from virgin butyl rubber and designed to adhered to all types of masonry, steel, aluminum, glass, wood and other common construction materials. Meets requirements of ASTM C-1311 (+/- 7.5% joint movement).
1. Basis of Design is Pecora BC-158 manufactured by Pecora Corporation.
2. Refer to Project Diagrams and Specifications for specific applications.

D. Sealant Type 4 - Butyl Sealant Tape: Isobutylene-Isoprene Copolymer tape designed to adhered to all types of masonry, steel, aluminum, glass, wood and other common construction materials. Meets requirements of ASTM C-1311 (+/- 7.5% joint movement).
1. Basis of Design is SikaLastomer 65 manufactured by Sika Corporation.
2. Refer to Project Diagrams and Specifications for use.

2.04 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
1. Closed Cell: 25 to 33 percent larger in diameter than joint width.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of materials of this section indicates acceptance of substrates and conditions.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Utilize tape to provide a perimeter boundary for joint sealant installation. Ensure tape used does not damage or alter the appearance of substrates that tape is installed over.

C. Joint Backing: Provide in accordance with sealant manufacturer instructions, recommendations, and requirements.

1. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
2. Install joint sealant backing materials (i.e. backer rod, etc) at joints greater than 1/8-inch in width and depth. Coordinate with sealant manufacturer requirements.
3. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

F. Non-sag Sealants: Tool surface concave, unless otherwise indicated; remove joint sealant boundary masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

A. Non-Destructive Adhesion Testing: If there are any failures, notify Consultant and Owner immediately.

B. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

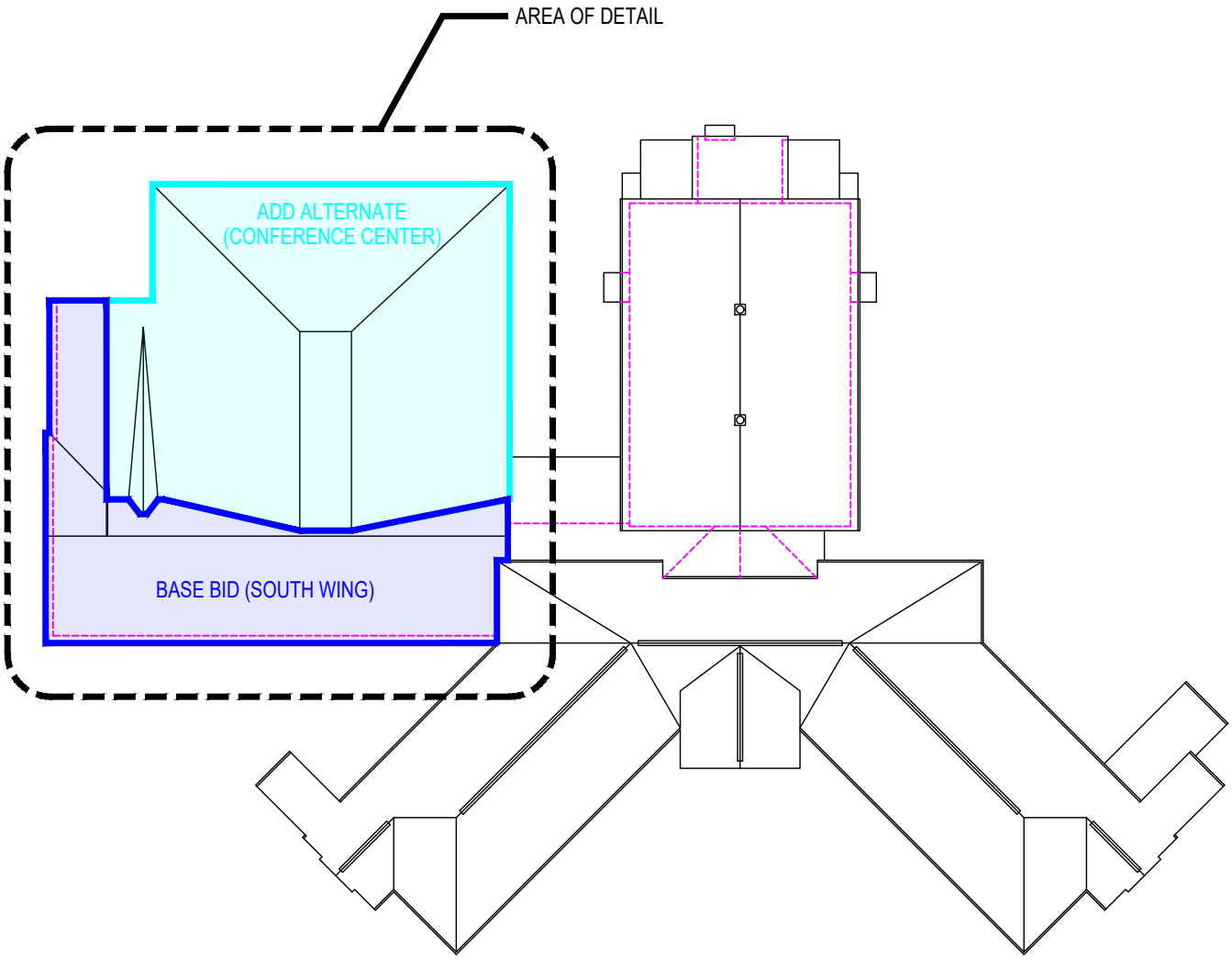
END OF SECTION

EDIFICE
CONSULTING, INC.
A Georgia Corporation

PROJECT DIAGRAMS

BYRON MUNICIPAL BUILDING ROOF PROJECT

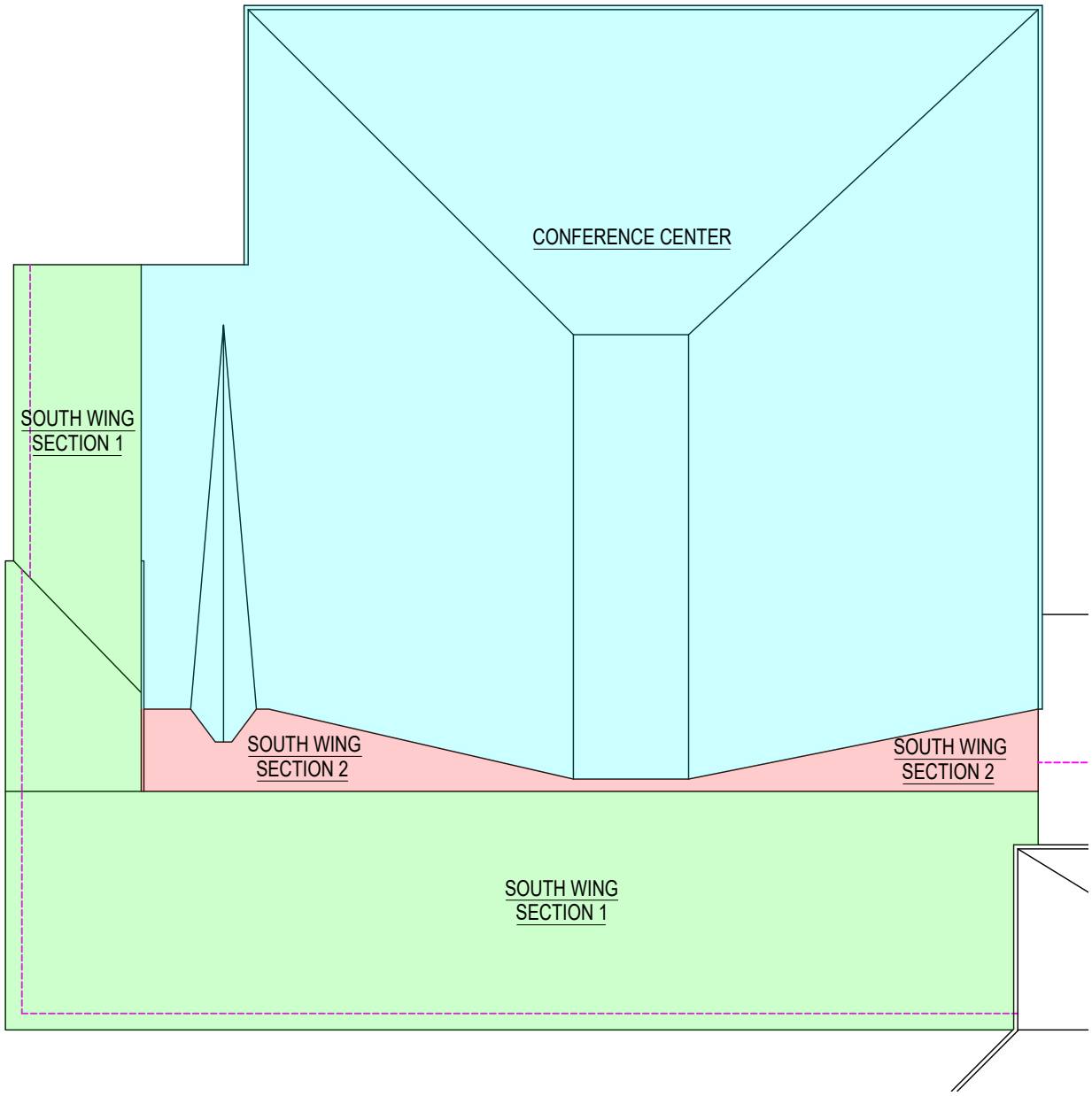
BYRON, GA



BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
KEY PLAN 1 **OVERALL ROOF PLAN**	SCALE: NOT TO SCALE

EDIFICE CONSULTING, INC.
A Georgia Corporation

KEY PLANS	DIAGRAMS
-3-	-10-



SINGLE PLY ROOF REPLACEMENT WITH PROFILE BARS, BASE BID

MODIFIED BITUMEN ROOF REPLACEMENT, BASE BID

SINGLE PLY ROOF RETROFIT, ADD ALTERNATE

BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
KEY PLAN 2 **AREA OF DETAIL**	SCALE: NOT TO SCALE

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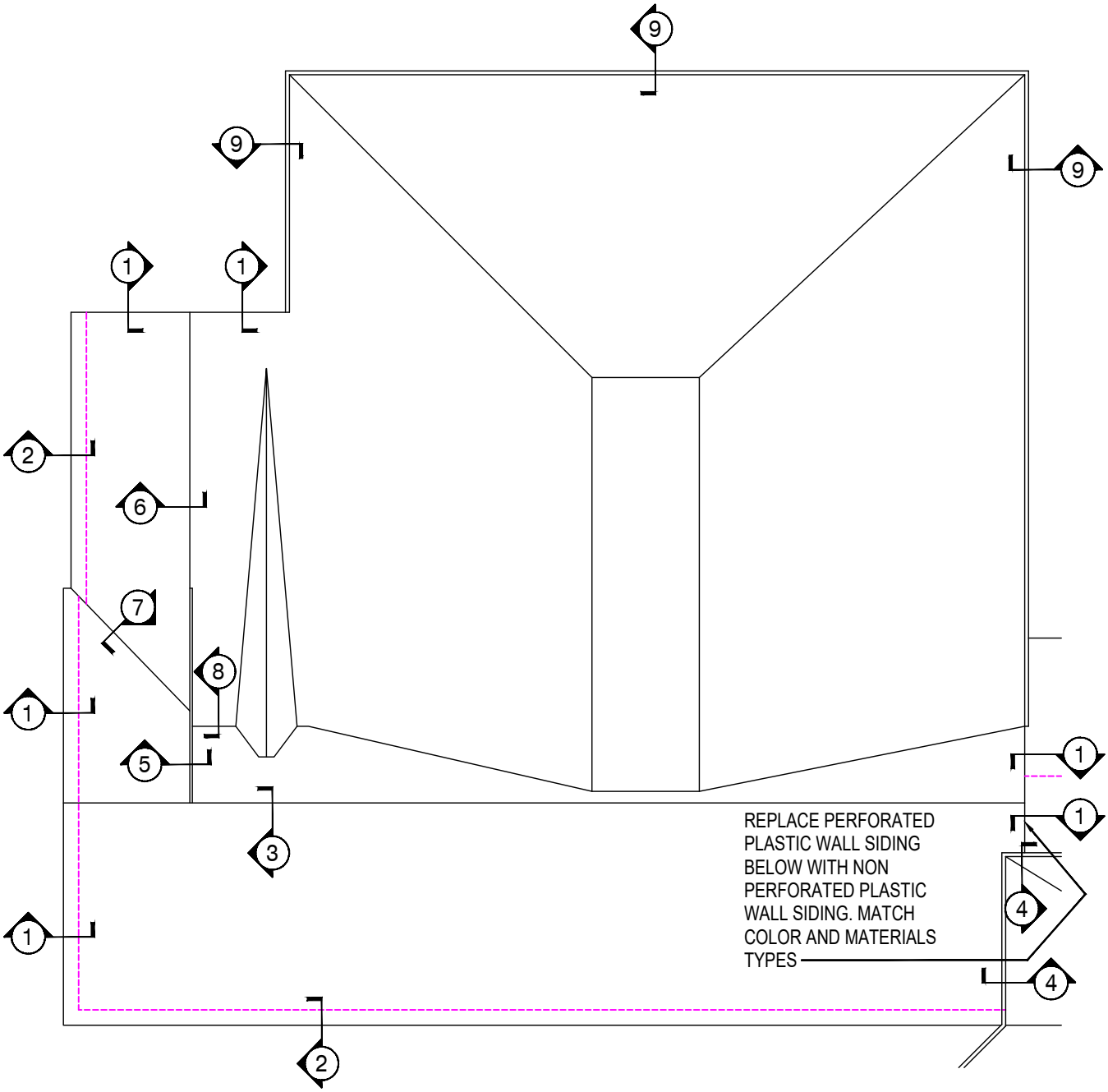
A Georgia Corporation

KEY PLANS	DIAGRAMS
-3-	-10-



BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
KEY PLAN 3 **AREA OF DETAIL AND PROJECT NOTES**	SCALE: NOT TO SCALE

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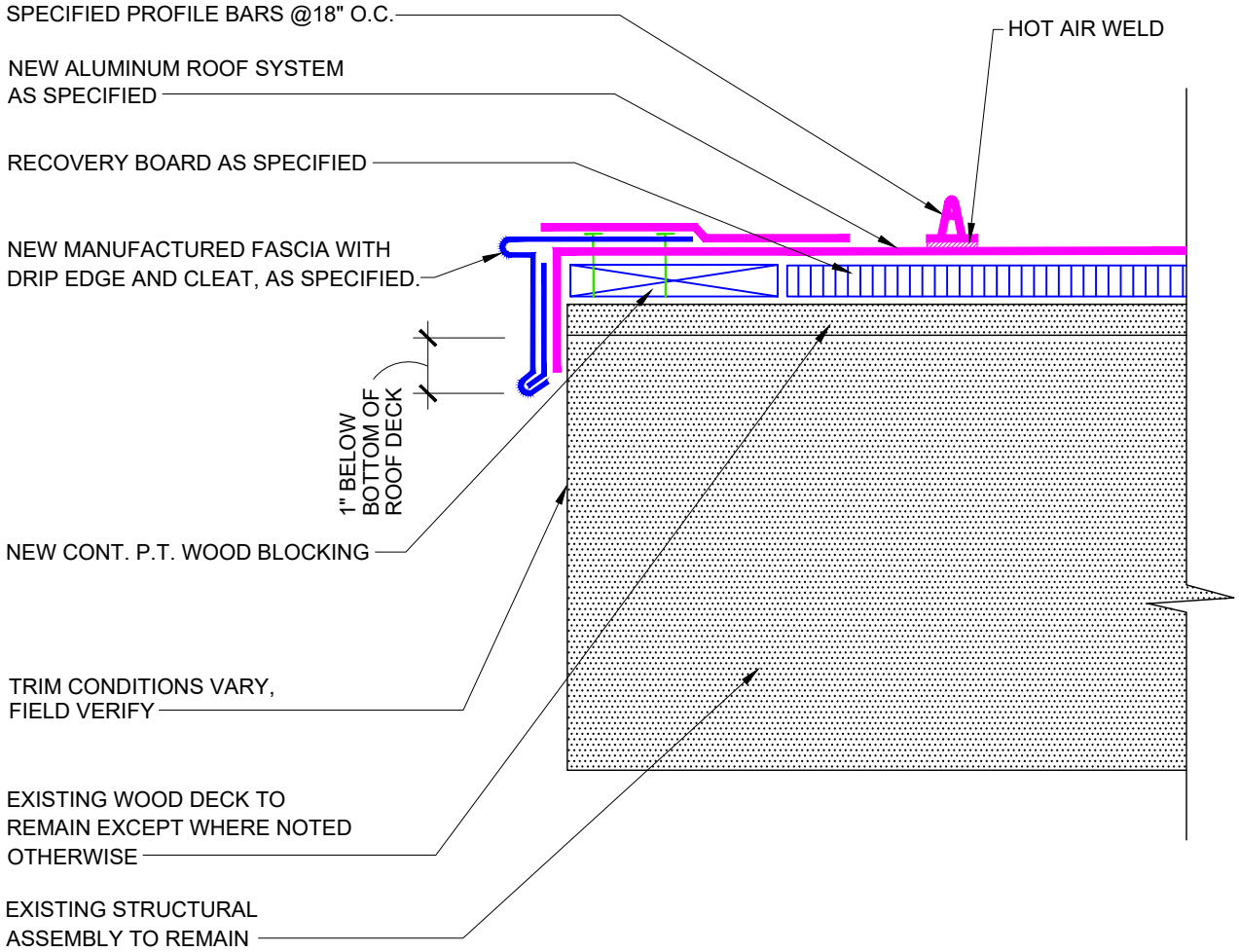
KEY PLANS	DIAGRAMS
-3-	-10-

NOTE: SPACE SHOWN BETWEEN MATERIALS IS FOR GRAPHIC CLARITY ONLY. ENSURE THAT ALL MATERIALS ARE TIGHTLY ABUTTED, UNLESS NOTED OTHERWISE.

ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.



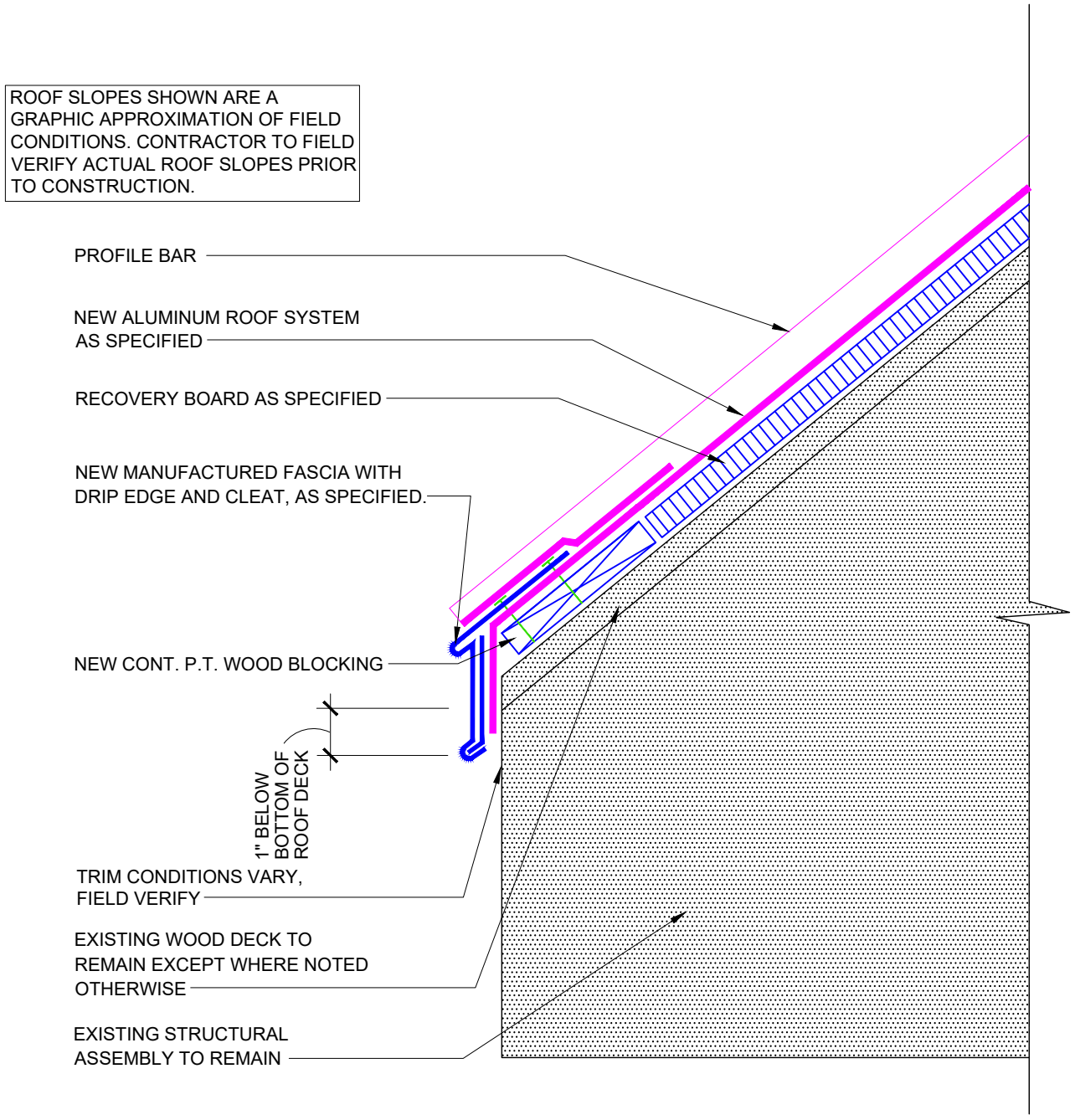
BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 1 **TYPICAL LOW SLOPE ROOF RAKE**	SCALE: NOT TO SCALE

EDIFICE CONSULTING, INC.
A Georgia Corporation

KEY PLANS	DIAGRAMS
-3-	-10-

NOTE: SPACE SHOWN BETWEEN MATERIALS IS FOR GRAPHIC CLARITY ONLY. ENSURE THAT ALL MATERIALS ARE TIGHTLY ABUTTED, UNLESS NOTED OTHERWISE.

ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.



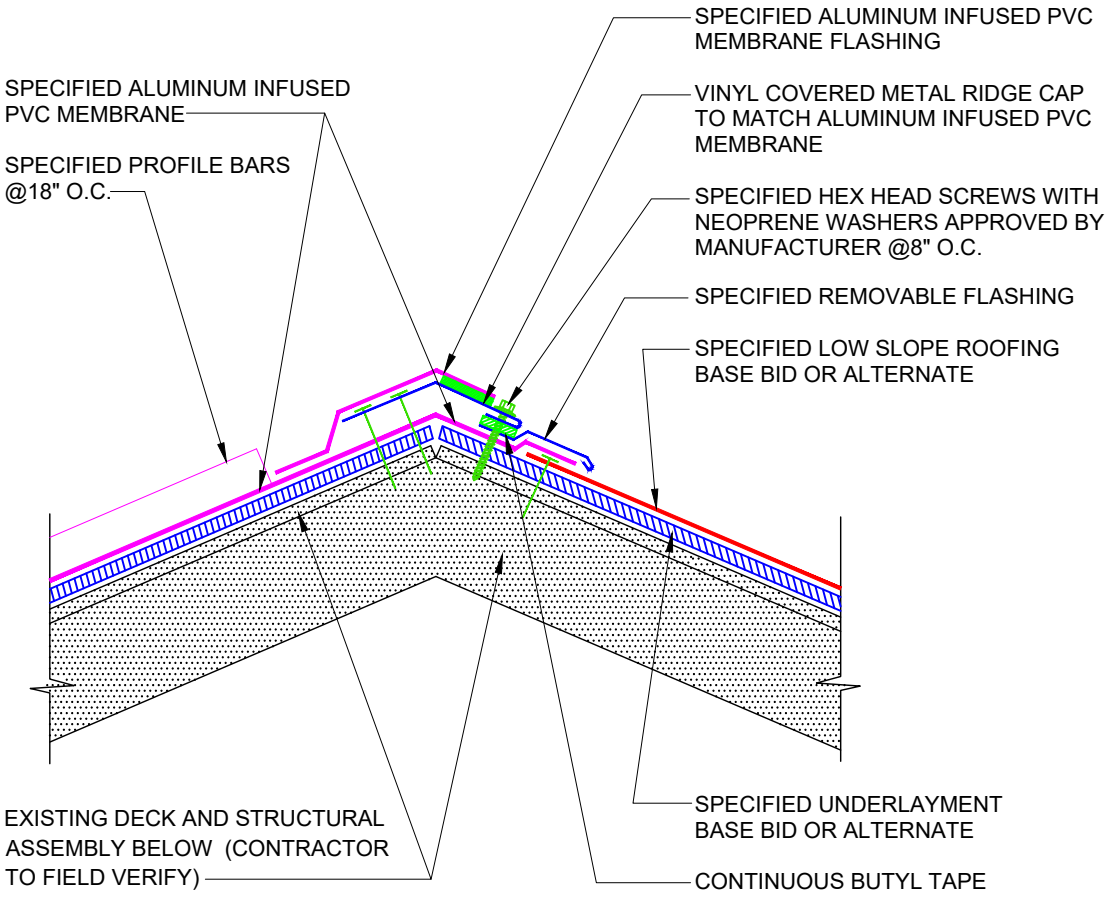
BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 2 **TYPICAL HIGH SLOPE ROOF EDGE**	SCALE: NOT TO SCALE

EDIFICE CONSULTING, INC.
A Georgia Corporation

KEY PLANS	DIAGRAMS
-3-	-10-

NOTE: SPACE SHOWN BETWEEN MATERIALS IS FOR GRAPHIC CLARITY ONLY. ENSURE THAT ALL MATERIALS ARE TIGHTLY ABUTTED, UNLESS NOTED OTHERWISE.

ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.



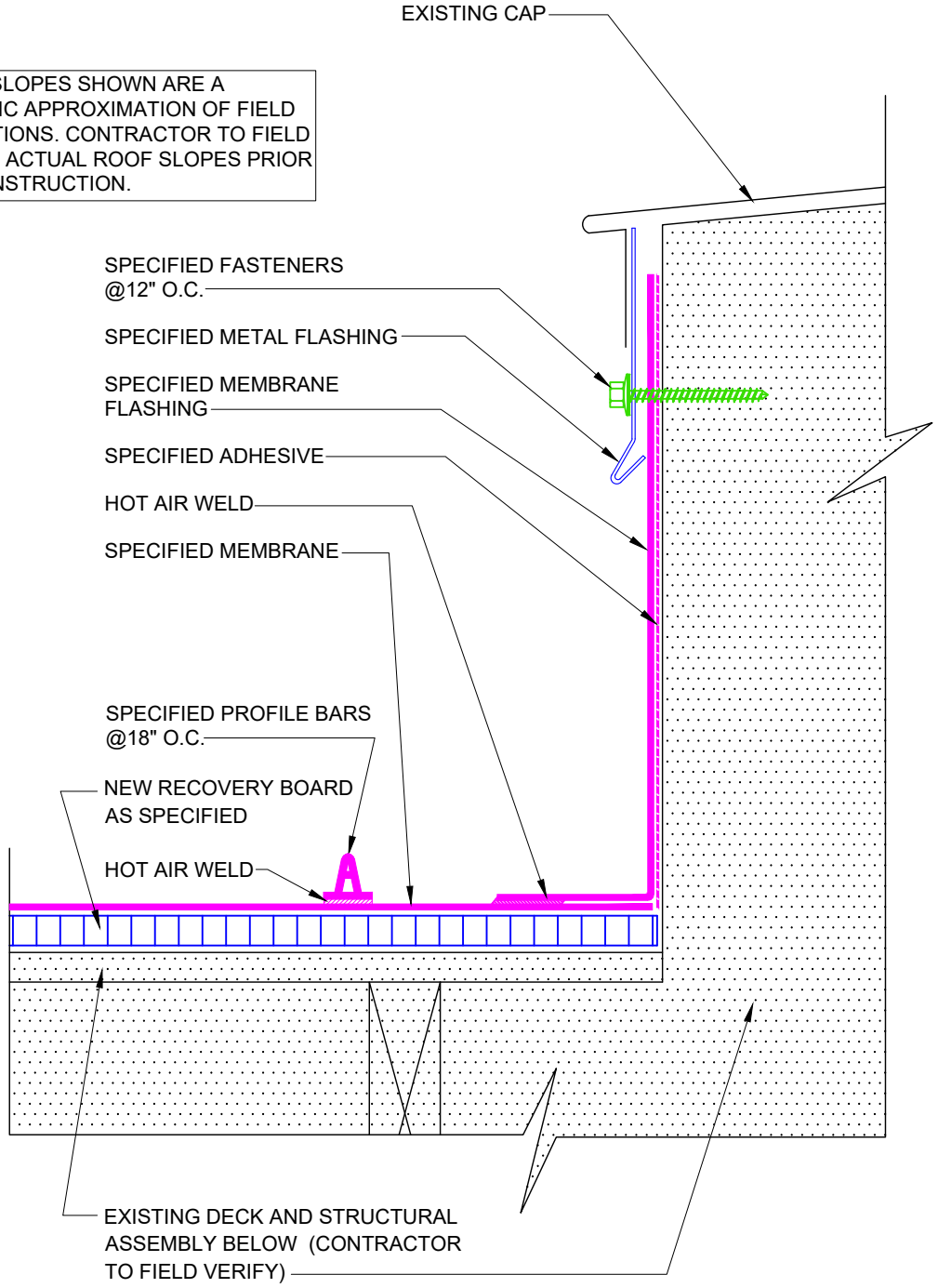
BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 3 **TYPICAL ALUMINUM ROOF NON-VENTING RIDGE**	SCALE: NOT TO SCALE

EDIFICE CONSULTING, INC.
A Georgia Corporation

KEY PLANS	DIAGRAMS
-3-	-10-

NOTE: SPACE SHOWN BETWEEN MATERIALS IS FOR GRAPHIC CLARITY ONLY. ENSURE THAT ALL MATERIALS ARE TIGHTLY ABUTTED, UNLESS NOTED OTHERWISE.

ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.



BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 4 **ROOF TO WALL DETAIL**	SCALE: NOT TO SCALE

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KEY PLANS	DIAGRAMS
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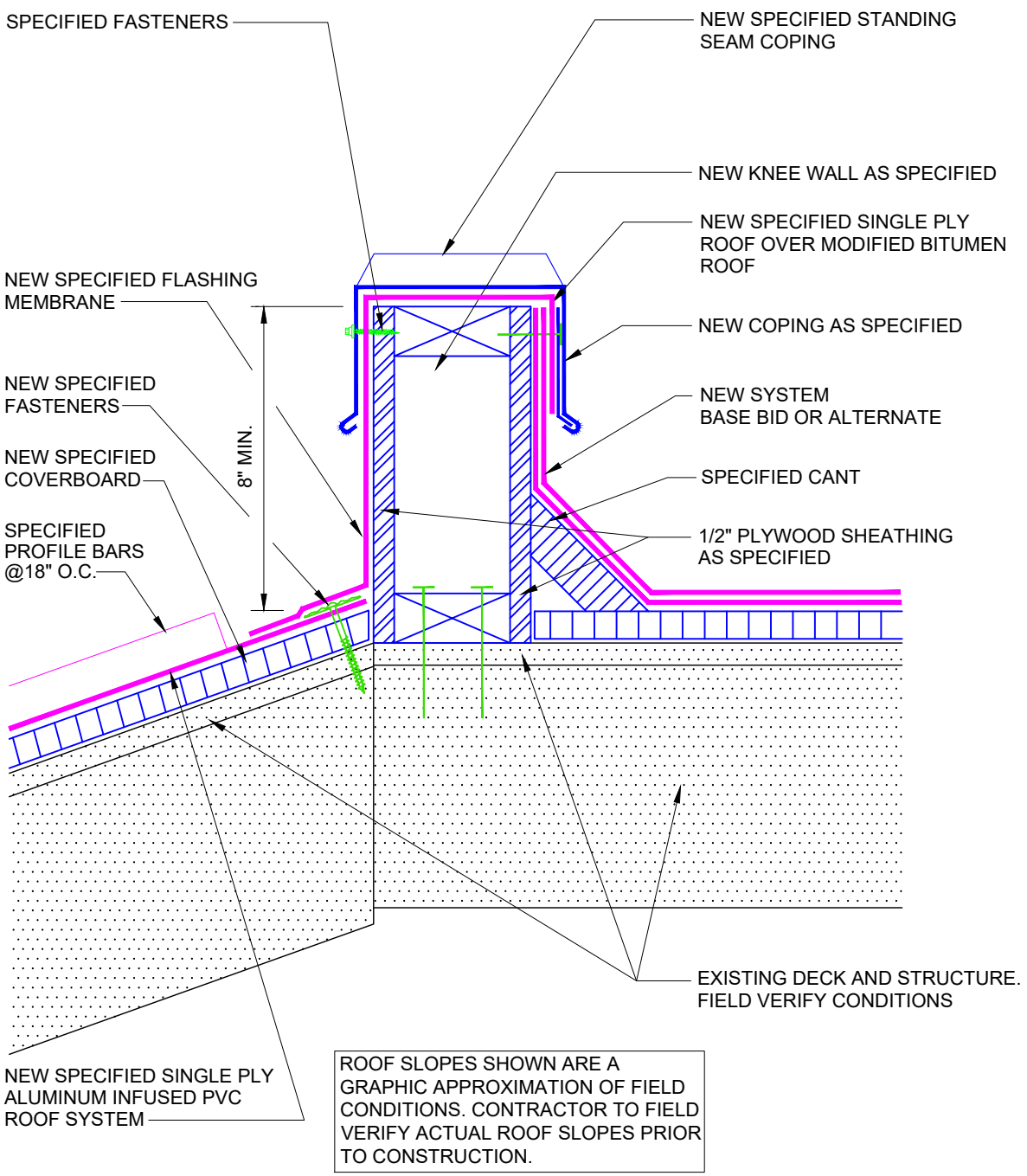

ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.

BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
DIAGRAM 5 **NEW KNEE WALL DETAIL**	DATE: 01/10/22 SCALE: NOT TO SCALE

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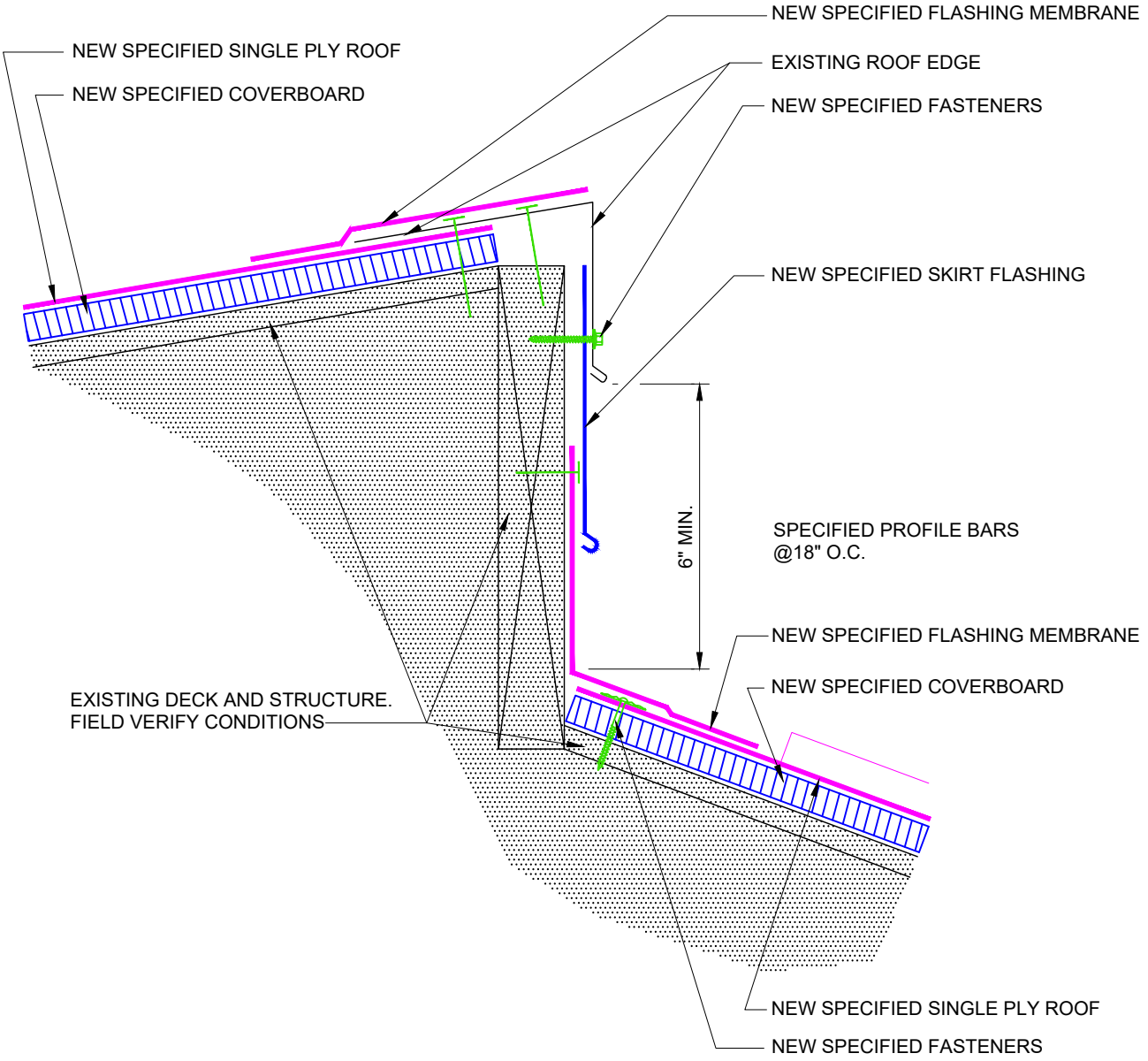

BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 6 **HIGH SLOPE ROOF FLASHING**	SCALE: NOT TO SCALE

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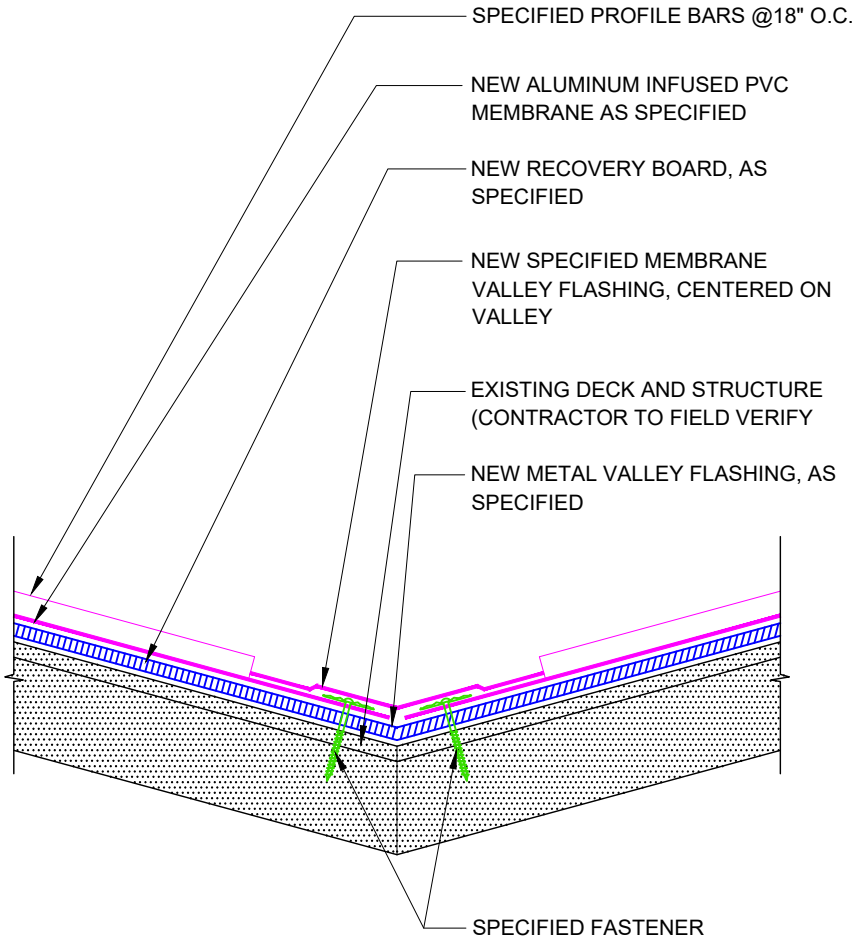

BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 7 **VALLEY FLASHING**	SCALE: NOT TO SCALE

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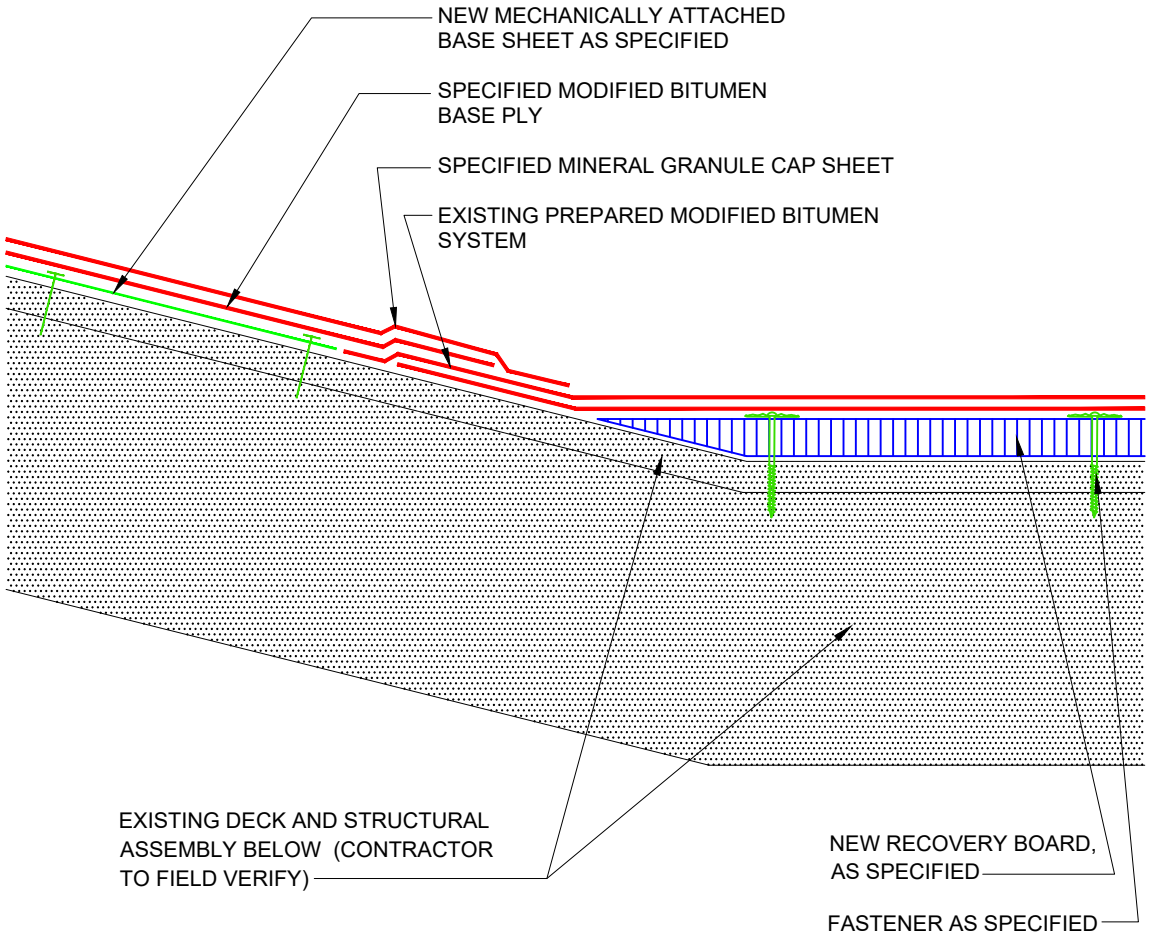
ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.



BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM 8 **LOW SLOPE TO HIGH SLOPE TRANSITION**	SCALE: NOT TO SCALE

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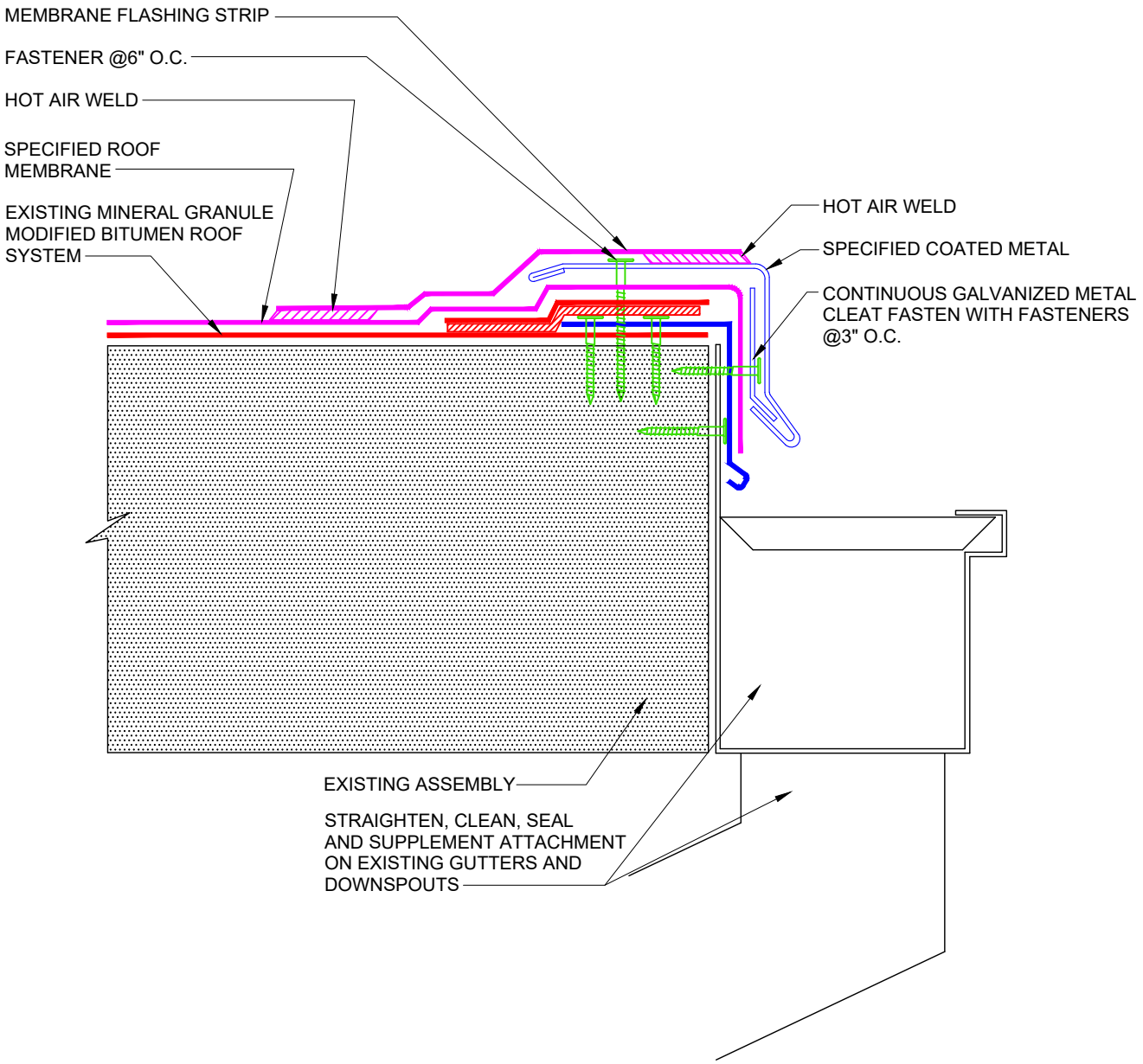

BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
DIAGRAM 9 **TYPICAL ROOF EDGE AT GUTTER**	DATE: 01/10/22
	SCALE: NOT TO SCALE

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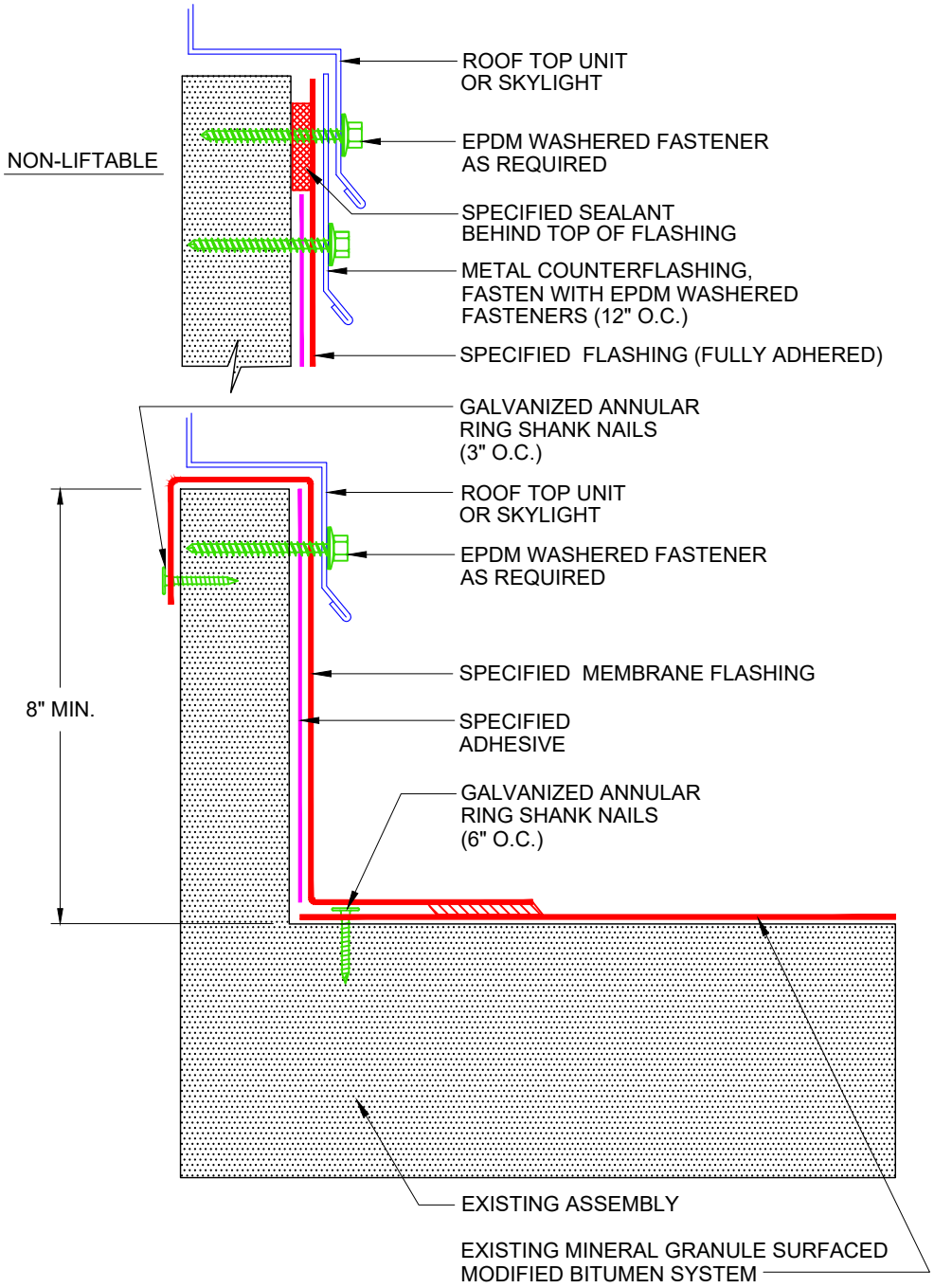

BYRON MUNICIPAL BUILDING ROOF PROJECT **BYRON, GEORGIA**	PROJECT #: 21CBGU01RR281
	DATE: 01/10/22
DIAGRAM A **TYPICAL CURB OR SKYLIGHT FLASHING**	SCALE: NOT TO SCALE

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