CITY OF AUSTELL, GEORGIA

INVITATION TO BID

FOR

Roof Replacement at Threadmill Complex

5000 Austell-Powder Springs Road, Austell, GA 30106

ITB #22-00005-PW

For all questions about this ITB, contact the City via email:

bids@austellga.gov

RELEASED ON :

June 24, 2022

DUE ON :

July 25, 2022, 10 AM ET

Austell City Hall

2716 Broad Street, Austell, GA 30106

All bids must be accompanied by a Bid Bond in the amount not less than five percent (5%) 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/site visit** is scheduled for **July 6, 2022,** at the Threadmill Complex, 5000 Austell-Powder Springs Rd., Austell, GA 30106. The meeting will begin at 10:00 AM.

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

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SECTION 1 BID SUBMISSION INSTRUCTIONS

Ownership of all data, materials, and documentation prepared for and submitted to the City in response to this request for bid shall belong exclusively to the City and will be considered a record prepared and maintained or received in the course of operations of a public office or agency and subject to public inspection in accordance with the Georgia Open Records Act, Official Code of Georgia Annotated, Section 50-18-70 et. seq., unless otherwise provided by law.

BID FORMAT:
Each bid should be prepared simply and economically, avoiding the use of elaborate promotional materials beyond those sufficient to provide a complete presentation. The Bidder is solely responsible for the cost of responding to this ITB.

MANDATORY DOCUMENTS CHECKLIST: Bidder must complete, execute, and include with the bid, the following mandatory documents. Bids received without these documents may be rejected.

- BID BOND *(see specific requirements at the end of this section)
- ACKNOWLEDGEMENT OF ADDENDA
- BID SCHEDULE/COST PROPOSAL
- GEORGIA SECURITY & IMMIGRATION COMPLIANCE (GSIC) ACT AFFIDAVIT
- AFFIDAVIT VERIFYING RESIDENCY STATUS OF AN APPLICANT (SAVE)

BID SUBMISSION AND DELIVERY INSTRUCTION:

The Bidder shall submit one original (conspicuously marked "Original") and three (3) copies of their written bid. The bid submittal must be signed by an officer of the company, who is legally authorized to enter into a contractual relationship in the name of the offeror.

Clearly label the outside of the SEALED envelope as follows:
Name of Contractor submitting the bid
Project Name
ITB #
E-Verify #
All bids must be delivered no later than July 25, 2022 at 10 AM, at which time bids will be publicly opened and read aloud.

Bids should be delivered to:
Finance Department
City Hall
2716 Broad Street, SW
Austell, GA 30106

Hand delivered copies may be delivered to the above address only between the hours of 8:30 AM and 4:45 PM ET, Monday through Friday, excluding holidays observed by the City of Austell.

*Bid Bond

- Bids must be accompanied by a Bidder's Bond for not less than 5% of the bid, made payable to the City.
- Surety must be authorized to do business in Georgia and on Federal Treasury's latest list of approved sureties, Circular 570.
- Bid bond amount must be within underwriting limit.

SECTION II INVITATION TO BID OVERVIEW AND PROCEDURES

Purpose of Procurement

The City of Austell is accepting sealed bids from qualified contractors for the purpose of the removal of existing roofing and installation of new roofing on the Threadmill Complex. Bids should include price for furnishing all materials, labor, tools, equipment, and any other miscellaneous items necessary for the roof replacement. Technical documents can be found in "SECTION V. BID SPECIFICATIONS".

Schedule of Events

This Invitation to Bid (ITB) will be governed by the following schedule:

DATE	MILESTONE
Friday, June 24, 2022	Bid Documents Available
Wednesday, July 6, 2022, 10:00 AM ET	**Mandatory** Pre-Bid Meeting/Site Visit
Tuesday, July 12, 2022, 3 PM ET	Deadline for Submission of Questions
Friday, July 15, 2022, 3 PM ET	Answers Available on City's Website
Monday, July 25, 2022 10 AM ET	Bid Opening
Friday, September 23, 2022	Expiration of Bid

Communication with Staff

From the issue date of the bidding document and until a Contractor is selected and the selection is made public, Contractors are not allowed to communicate for any reason with any City staff or elected official with the exception of the Finance Department as described below, or as provided on existing contracts. For violation of this provision, the City may reject any bid of the offending bidder.

Questions and Answers

All questions concerning this ITB must be submitted via email or writing to the City's Finance Department:

Finance Department
City Hall
2716 Broad Street, S.W.
Austell, Georgia 30106
bids@austellga.gov

Questions and clarification requests must be received by 3:00 PM ET, Tuesday, July 12, 2022. Answers and clarifications issued by the City will be in the form of an addendum to the bid instructions and will be issued to all known potential offerors and placed on the City's website not later than 3:00 PM ET, Friday, July 15, 2022. It is the bidder's responsibility to ensure that they have all applicable addenda prior to submittal. Bidders who obtain this bid document from Georgia Procurement Registry or from any source other than the City of Austell Finance Department are advised to re-visit the Georgia Procurement Registry site or City's website to obtain any addenda which may be issued. The City of Austell assumes no responsibility for bidders' failure to acknowledge any addenda issued.

Bidders must acknowledge any issued addenda. Bids which fail to acknowledge the bidder's receipt of any addendum will result in the rejection of the bid if the addendum contains information which substantively changes the City's requirements.

LATE SUBMITTAL

All bids must be received by the City by the specified date and time. It is not sufficient to show that the submittal was mailed in time to be received before the scheduled closing time. The City will not be responsible for any bids delivered incorrectly or not received by the specified date and time.

WITHDRAWAL OF BIDS

A submitted bid may be withdrawn prior to the due date by a written request to the Finance Department. The request to withdraw a bid must be signed by an authorized individual. Bids shall be valid and may not be withdrawn for a period of 60 days from the date specified for receipt of bids.

REJECTION OF BIDS

Bids will not be accepted from any person, firm, or corporation who is in arrears in any debt or obligation to the City of Austell or any other governmental entity.

The City of Austell reserves the right to waive irregularities, informalities, and technicalities, or to readvertise the bid. The City has the right to reject all bids or any bid that is non-responsive or not responsible.

DISCREPANCY IN UNIT PRICE

In case of discrepancy between a unit price and an extended price and total amount, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

SELECTION CRITERIA

It is the intent of the City to award a contract to the lowest responsive and responsible bidder, provided the bid has been submitted in accordance with the requirements of the bidding documents and does not exceed the funds available.

In determining the lowest responsive and responsible bidder, in addition to price, the following shall also be considered:

The ability, capacity, and skill of the bidder to perform the contract.

The quality of performance on previous contracts.

The Contractor should have at least six years of experience installing specified roof system.

FINANCIAL STANDING

The Contractor selected must be able, if requested, to provide proof that they are in good financial standing. All records submitted by the Contractor may be subject to the Georgia Open Records Act, O.C.G.A. 50-18-70 et seq. As such, the Contractor should be careful to not provide any proprietary information. In addition, the City may require contact information with the Contractor's financial institution(s), along with the necessary consent for the City to contact the institution to inquire as to the financial status of the Contractor.

TERMS AND CONDITIONS

No person or business entity shall on the grounds of race, color, national origin, sex, age, or handicap/disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity conducted by the City.

Compliance with Laws: In connection with the furnishings of supplies or performance of work under the contract, the bidder agrees to comply with the Fair Labor Standards Act, Equal Opportunity Employment Act, Georgia Security and Immigration Compliance Act, and all other applicable Federal and State laws, regulations, and executive orders to the extent that the same may be applicable and further agrees to insert the foregoing provision in all subcontractors awarded hereunder.

If a bidder has any existing client relationship that involves the City of Austell Mayor or Council, the bidder must disclose each relationship.

HOLD HARMLESS AGREEMENT

The Contractor shall hold harmless the City of Austell 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 Contractor'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.

COMMENCEMENT OF WORK AND WORK PERIOD

The City of Austell expects to award the contract within 30 days of the bid opening date. Work should commence within 60 days of award and be completed within the 90 consecutive days following commencement. Any variation or extension to this schedule must be approved by the City Building Supervisor and NOVA Project Manager.

BONDS

Each bid must be accompanied by a bid bond with good and sufficient surety or sureties approved by the City for faithful acceptance of the contract, payable to, in favor of, and for the protection of the City in an amount equivalent to five percent (5%) of the total amount payable by the terms of the contract or, in lieu thereof, in the form of a certified check, cashier's check, or cash in equal amount.

The successful bidder will be required to furnish performance and payment bonds with the executed agreement meeting the requirements of the contract documents, each in the amount of one hundred percent (100%) of the bid. The bond surety must be authorized by the Insurance Commissioner to do business in Georgia and must be on the United States Department of Treasury's list of approved sureties.

CERTIFICATIONS

The City of Austell will not enter into a contract for the physical performance of services unless the Contractor(s) and or Subcontractor(s) registers and participates in the federal work authorization program to verify information of all newly hired employees or subcontractors. Each bid must be accompanied by a notarized work authorization affidavit, as defined in OCGA 13-10-91, et seq, attesting to the following:

The affiant has registered with and is authorized to use the federal work authorization program.
The user identification number and date of authorization for the affiant; and
The affiant is using and will continue to use the federal work authorization program throughout the contract period.

SECTION III INSURANCE REQUIREMENTS FOR CONTRACTORS

Prior to the award of a contract, the Contractor shall furnish a Certificate of Coverage or other proof that it has the following insurance with the City named as additional insured that must remain in force for a period of at least one year after completion of the work:

Commercial General and Umbrella Liability Insurance –
Commercial general liability insurance provides protection against bodily injury and property damage claims arising from operations of a Contractor or independent contractors, products/completed operations, personal injury, contractual, broad form property damage, and underground, explosion, and collapse hazards. The General Contractor 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 the 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. 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.

General Contractor waives all rights against City 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.

Workers' Compensation and Employer Liability Insurance –
Workers' compensation and employer's liability provides statutory protection against bodily injury, sickness or disease sustained by employees of the Contractor while performing within the scope of their duties. Employer's Liability coverage is usually included in Worker's Compensation policies, and ensures common law claims of injured employees made in lieu of or in addition to a Worker's Compensation claim. The General Contractor shall procure and maintain Worker's Compensation and Employer's Liability Insurance in the limits below. 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

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

Business Auto and Umbrella Liability Insurance –
The General Contractor 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).

General Contractor waives all rights against City 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 General Contractor pursuant to this agreement or under any applicable auto physical damage coverage.

Builder's Risk Insurance –
The General Contractor shall procure and shall maintain in force Builder's Risk Insurance on the entire work. Such insurance shall be written on a completed value basis 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 include the City, General Contractor and all subcontractors and sub-subcontractors in the work.

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.

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

City and General Contractor 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 extent covered by builder's risk insurance purchased pursuant to the requirements of this subparagraph or any other property insurance applicable to the work.

Any and all companies providing insurance required by the contract must be obtained from insurance companies that are duly licensed or authorized in Georgia to issue insurance policies for the required limits and coverages. For all contracts, regardless of risk, companies providing insurance under this contract shall have an A.M. Best rating of A-VII or better.

PERFORMANCE BOND AND PAYMENT BOND

Any bid exceeding $50,000 requires a performance and payment bond in the amount of 100% of the job. No material deviation from this language will be accepted. These documents must be filled out completely and notarized with appropriate power of attorney.

The bonding company will only be accepted if it is in good standing within the state of Georgia and must appear on the Federal register of approved companies.

SECTION IV GENERAL CONDITIONS

Contractor shall furnish all service, personnel, material, tools, and equipment as necessary for completion of all work in accordance with specifications.

CONTRACTOR'S INVOICE

The Contractor shall prepare and submit invoices to NOVA Engineering and Mechanical. A proper invoice must include the items listed below:
Name and address of the Contractor
Invoice date and invoice number
Purchase order number for supplies delivered or services performed
Description, quantity, unit of measure, unit price, and extended price of supplies delivered, or services performed
Name and address to which payment is to be sent
Name (where practicable), title, phone number, and mailing address of person to notify in the event of questions
Any other information or documentation required by the contract (e.g., evidence of shipment)

REPORTING DISPUTES

The contractor shall report any contract disputes and/or problems to the City Building Supervisor and NOVA Project Manager, both verbally and in writing, within 48 hours of their occurrence.

SAFETY

The Contractor shall comply with all OSHA requirements associated with the work within this contract.
The Contractor shall employ only such workers as are skilled in the tasks to which they are assigned. The City reserves the right to require the Contractor to remove and/or not to assign any employee the City deems incompetent, careless, insubordinate, or otherwise objectionable to working on City projects.
All Personnel shall be equipped with required Personal Protective Equipment as required by safety standards, provided by the Contractor. Personnel shall have all tools as required to perform the duties of each held position.

MATERIAL

All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in specifications to equipment, material, articles, or patented process by trade name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgement of the NOVA Project Manager, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

PERMITS AND RESPONSIBILITIES

The Contractor shall, without additional expense to the City of Austell, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occurs as a result of the Contractor's fault or negligence. If Contractor fails to take corrective actions, the City reserves the right to withhold payment until damages are corrected, or to correct damage and invoice Contractor for cost incurred. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS

The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work sites, which are not to be removed and which do not unreasonable interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the NOVA Project Manager.

The Contractor shall protect from damage all existing improvements and utilities (a) at or near the work site, and (b) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the NOVA Project Manager may have the necessary work performed and charge the cost to the Contractor.

CONTRACTOR'S USE OF PREMISES

Work may be performed from Monday through Saturday from the hours of 7:30 AM to 7:00 PM. The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials.

SUBCONTRACTORS

If work is performed by a subcontractor, the Contractor shall remain fully liable and responsible for the work done by the subcontractor and shall assure compliance with all requirements of the contract.

The Contractor must provide the City notice of the identity of all subcontractors hired by the Contractor within five days of hiring the subcontractor. The Contractor must obtain affidavits from his or her subcontractors swearing that the subcontractor is registered for and participates in the E-Verify program. The affidavits must be provided to the local government within five business days of the subcontractor being hired to work on the job.

SECTION V BID SPECIFICATIONS

See following pages.

TECHNICAL DOCUMENTS
FOR
THREADMILL
CITY OF AUSTELL

5000 AUSTELL POWDER SPRINGS ROAD
DECATUR, GEORGIA

PROJECT NUMBER:

OWNER:

CITY OF AUSTELL
2716 BROAD STREET, SW
AUSTELL, GEORGIA 30106

CONSULTANT:

MARK GIRTON
NOVA ENGINEERING AND ENVIRONMENT
3900 KENNESAW 75 PARKWAY, SUITE 100
KENNESAW, GEORGIA 30144
MGIRTON@USANOVA.COM

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Not Used

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Not Used

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PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Roof replacement and roof related renovations of the existing facility known as the Threadmill located at the 5000 Austell Powder Springs Road in Austell, Georgia. Work includes, but is not limited to the following:

B. Roof Areas A & B:

1. Remove existing coal tar pitch membrane roof and the modified asphalt recovery system, insulations and underlayments to the wood deck.
2. Repair or replace deteriorated or damaged wood deck. Include 150 square feet in base bid.
3. Scrape or otherwise remove existing sprayed polyurethane foam from walls, curbs and other penetrations. DO NOT DISTURB CAST STONE COPINGS.
4. Rebuild existing and approximate 4-foot length of brick masonry wall at upper roof and reinstall displaced cast stone coping.
5. Remove abandoned roof top equipment and repair install new wood decking over opening.
6. Inspect drains and replace missing or broken components. Replace broken or missing drain strainers with new cast metal strainers. Install tapered 36”-in by 36”-in sumps at drain locations and shown on roof plan.
7. Install new base sheet, fasten to wood deck using fasteners and patterns that meet or exceed ASCE-7 wind uplift requirements. Increase fastener densities at roof perimeters and corners.
8. Install a base layer of 3.5-inch thick polyisocyanurate insulation, set in insulation adhesive. Use adhesives and patterns that meet or exceed ASCE-7 wind uplift requirements.
9. Install tapered crickets/saddles to facilitate roof drainage, set insulation in adhesives. Finished slope shall not be less than ¼-inch positive fall.
10. Install 0.25-inch primed dens-deck coverboard in insulation adhesive.
11. Install a fully adhered 60 mil white TPO membrane.
12. Install new TPO flashings that are fully adhered to substrate.
13. Install new 24 Ga. prefinished metal flashings and counter flashings where shown in drawings.
14. Roof system and components shall meet current IBC code for wind uplift requirements for a building of similar height and geographic location.
15. Install all new metal work as specified herein

16. Provide a 20-yr NDL roofing manufacturer's guarantee along with a Contractor's 3-yr guarantee on materials and labor. All materials included in the roofing manufacturer's guarantee shall be sole source.

C. Roof Areas C: (Base Bid)
   1. Remove existing EPDM membrane roof, insulations, membrane and metal flashings as well as underlayments to the wood deck.
   2. Repair or replace deteriorated or damaged wood deck. Include 150 square feet in base bid.
   3. Inspect drains and replace missing or broken components. Replace broken or missing drain strainers with new cast metal strainers. Install tapered 36"-in by 36"-in sumps at drain locations and shown on roof plan.
   4. Install new base sheet, fasten to wood deck using fasteners and patterns that meet or exceed ASCE-7 wind uplift requirements. Increase fastener densities at roof perimeters and corners.
   5. Install a base layer of 3.5-inch thick polyisocyanurate insulation, set in insulation adhesive. Use adhesives and patterns that meet or exceed ASCE-7 wind uplift requirements.
   6. Install ¼-inch per linear foot tapered insulation system, include crickets and saddles to facilitate roof drainage, set insulation in adhesives. Finished slope of the crickets shall not be less than ¼-inch positive fall.
   7. Install 0.25-inch primed dens-deck coverboard in insulation adhesive.
   8. Install a fully adhered 60 mil white TPO membrane.
   9. Install new TPO flashings that are fully adhered to substrate. Install new 24 Ga. prefinished metal flashings and counter flashings where shown in drawings.
   10. Roof system and components shall meet current IBC code for wind uplift requirements for a building of similar height and geographic location.
   11. Install all new metal work as specified herein
   12. Provide a 20-yr NDL roofing manufacturer's guarantee along with a Contractor's 3-yr guarantee on materials and labor. All materials included in the roofing manufacturer's guarantee shall be sole source.
   13. **Bid Alternate 1** – Install 3 new cast iron roof drains where shown in drawings. Revise taper plan to reflect the additional drains.

D. Rooftop Shed Roof (Area C)
   1. Remove and dispose of existing shingle roof, underlayments and flashings.
   2. Repair deteriorated or damaged wood deck using materials of similar thickness.
   3. Install new self-adhering high temperature underlayment. Install new 24 Ga. prefinished gutter, downspouts and edge metals.

4. Install new laminated fiberglass reinforced roof shingles, secure using a minimum of 6 hand driven nails per shingle. Set shingles tabs along the rake edge in mastic.
5. Remove and dispose of existing vinyl siding.
6. Install new 24 ga. prefinished fluted wall panel system, including flashings, over self-adhering underlayment. Screw fasten using self-drilling fasteners with EPDM washers.
7. Provide a contractor's 3-year warranty.
8. **Bid Alternate 2**- In lieu of shingle roofing and new metal fluted wall panels, cover roof and walls with 60 mil. TPO membrane.

E. Steep Sloping Metal Roofs
1. Clean existing metal roofs, scrape or wire brush areas of surface rust.
2. Remove coating blisters or delaminations and prime as required by the manufacturer.
3. Encapsulate existing fastener heads with approved sealant, replace missing fasteners as needed.
4. Apply new high-build elastomeric coating.
5. Provide a contractor's 3-year warranty.

1.02 WEATHER PROTECTION:

A. Upon beginning work on the existing roof, Contractor shall patch and protect existing roofing as required to prevent leaks.
B. Contractor shall have at the work site, a sufficient amount of moisture proof coverings to provide quick temporary protection to exposed decking, unfinished roof, or open roof in the event of a rapid change in the weather.

1.03 LEAK RESPONSE:

A. In the event of a leak the contractor shall make repairs and stop the leak within 4 hours. The contractor will provide a 24-hour leak report contact and a backup contact prior to mobilizing the project.

1.04 CONTRACTOR'S USE OF PREMISES:

A. Confine operations at site to areas permitted by law, ordinances, permits and to limits of Contract as shown on Contract Documents.
B. All work can be performed from Monday through Saturday from the hours of 7:30 AM to 7:00 PM.
C. Do not unreasonably encumber site with materials or equipment.
D. Do not load structure with weight that will endanger structure.
E. Assume full responsibility for protection and safekeeping of products stored on premises.
F. Move stored products which interfere with operations of Owner.
G. Obtain and pay for use of additional storage or work areas needed for operations.
H. Contractor's employees will refrain from contact with facility personnel except as required. Harassment, lewd behavior, inappropriate comments or

conversation, or gestures, and use of vulgar language is grounds for immediate and permanent removal from the job-site. NO EXCEPTIONS.

I. Any work performed or staged over pedestrian ways are to have overhead protection or other acceptable diversion of the traffic, the owner will accept or reject the plan.

J. Coordinate use of premises under direction of Owner's Representative.

K. Use of Site for Work and Storage:
   1. Restrict Work to areas indicated on Drawings.
   2. Store materials off site except for minor amounts of material which may be stored at designated staging area as approved by Owner.
   3. Access site in areas approved by Owner.
   4. Restrict parking to specific areas as approved by Owner.
   5. Restrict debris removal to Owner-approved area of building site.
   6. Restrict location of construction cranes/lifts to areas as approved by Owner.
   7. Do not allow construction traffic on existing roof membrane except as absolutely necessary to perform new work. Provide 3/4-inch (19mm) plywood protection over existing roof membrane at traffic and work areas.

M. Maintenance of Access and Operations:
   1. Do not perform operations that would interrupt or delay Owner's daily operations.
   2. Maintain access to existing building, facilities, parking, streets, and walkways; especially fire lanes.
   3. Schedule demolition and renovation operations with Owner in such a manner as to allow Owner operations to continue with minimal interruption.
   4. Coordinate work performed around air intake areas with facility personnel. This work includes application of adhesives or flame. Smoke and fume entry into the facility is unacceptable. Blocking off air intake without express written notification of the owner or other designated contact is unacceptable.
   5. During period of construction, do not obstruct exit ways of Owner-occupied areas in any manner.

N. Maintenance of Existing Services:
   1. Do not disrupt existing utility services to existing building.
   2. Maintain environmental control in existing building, especially temperature, humidity, and dust control.
   3. Provide temporary lines and connections as required to maintain existing mechanical and electrical services in building.
   4. Notify Owner a minimum of **seven** days prior to each required interruption of mechanical or electrical services in building. These interruptions shall be only at such times and for lengths of time as approved by Owner. In no event shall interruption occur without prior approval of Owner.

O. Building Access:

1. Access shall be by way of exterior stairway or other owner approved location. Contractor shall document existing stair conditions, include condition of surface, (ie paint damage, cleanliness, metal damage, etc.) prior to mobilization. Upon completion contractor is responsible for returning stair to original condition.
2. Contractor will not have access to unapproved areas of the building interior except as pre-arranged with Owner or in the event of an emergency.
3. Material access for removal and installation can be by way of cranes or other lift mechanisms at the discretion of the contractor. The contractor will be responsible for equipment tie-in and disconnection, permits and required lane closures and this work and fees are to be included in the contractor's bid.

1.04 OWNER OCCUPANCY:

A. Owner will occupy premises during entire period of construction for the conduct of normal, daily operations. Cooperate with Owner's Representative in all construction operations to minimize conflict and to facilitate Owner usage.

B. Contractor shall conduct his operations to ensure least inconvenience to Owner's operations.

C. Contractor shall take precautions to avoid excessive noise or vibration that would disturb Owner's operations. When directed by Owner, Contractor shall perform certain operations at designated time of day or night to minimize disturbance to Owner's operations.

D. Contractor shall take all necessary precautions to assure a watertight condition in the operation portion of the building during construction.

E. Refer to Section 01120 for provisions on security, special sequence of Work, maintenance of access and operations, maintenance of existing utilities and services, and building access restrictions.

1.05 COMMUNICATION DURING CONSTRUCTION

A. Communication during construction is of the utmost importance to ensure accurate installation, maintain building integrity, and a safe place for both building user and construction personnel. To facilitate communication on this project, an "English" speaking foreman or superintendent is required to be onsite at ALL times construction is being performed.

1.06 OVERTIME WORK:

A. Contractor shall include necessary overtime work on weekends and other times as directed by Owner to complete the Work within the Contract Time.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

SECTION 01075 - DEFINITIONS

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Definitions for construction terminology not otherwise defined in Contract Documents.

B. Definitions for special terminology used for this Project.

1.02 ABANDONED - (NO LONGER NECESSARY OR IN USE):

A. "Remove" items so noted, or later defined, as an all inclusive responsibility within this contract. Pay for all work in connection with removal of these items, including municipal, disposal, utility, and service charges. Dispose of all "Excess".

1.03 ADDITION - (TO ADD TO AND BE INCORPORATED) ALSO TO "ADD":

A. Work supplementary to that indicated to accomplish that which is required by the Contract Documents. To bring to a new condition; to extend, fasten, patch, and match to that which is existing.

1.04 DEFECTIVE - (NOT ACCEPTABLE):

A. Refer to Conditions of the Contract, that which does not conform to the Contract Documents. As it applies to "Salvage", in addition to the above, shall mean "unsuitable".

1.05 EXCESS - (NOT REQUIRED):

A. More quantity than required to conform to the Contract Documents and not desired by the Owner. Debris shall be considered "Excess" and not be used as fill or be buried on this site. Remove "Excess" from the site and legally dispose of. "Excess" "Suitable" "Salvage" shall be property of Contractor unless otherwise specified.

1.06 EXISTING - (PRESENTLY THERE):

A. Also may be noted "original". Present conditions and assumed locations, if known, as of the Date of Contract Documents.

1.07 NEW - (TO BE INCORPORATED) NOT EXISTING:

A. Refer to various specification sections for requirements of Work to be incorporated.

1.08 REINSTALL - (TO INCORPORATE AS WAS ONCE DONE):

A. "Remove" and "salvage" existing from its location, if it does exist. "Restore", "Renovate", or "Remodel" and "Reinstall: in its existing location. Reincorporate and "re-work" the original work to the extent required by the Contract Documents.

B. If the "Existing" item, so indicated, is missing, defective, or unsuitable as "Existing", then "Reconstruct" only that portion with "New" products and incorporate as was original. Syn. Replace.

1.09 RELOCATE - ("REINSTALL" IN A NEW LOCATION):

A. "Reinstall" in a new location as indicated on Drawings.

1.10 REMAIN - (TO LEAVE WHERE IT IS EXISTING):

A. The final location of an item in its "existing" position, however, this shall not mandate the fact that this item will not move during this contract, specifically in order to "Preserve" or "Rework".

1.11 REMOVE - (TO TAKE FROM EXISTING LOCATION):

A. Work required to extract a portion or whole by one or a combination of methods and moved to a new location.
   1. "Abandoned": Remove items by dismantling, excavation, extraction, or demolition, if acceptable.
   2. Salvage: Remove by disassembly. "Relocate".
   3. Products: Where a specific portion of component of an assembly or whole is to be removed, take all precautions to prevent damage, defacement, and displacement to the "existing" to remain (i.e., mortar, bricks, and finishes).

1.12 RENOVATE - (TO REPAIR AND MAKE NEW):

A. The process required to bring an item to a present new standard of condition required by the Contract Documents (e.g., to "rework" "existing" "suitable" "salvage" "products" and perform "new" work and "additions" required). (Syn. rehabilitate, recondition, repair.)

1.13 REPLACE - (TO TAKE THE PLACE OF):

A. "Remove" "existing" unserviceable product and provide "new" product in place of unserviceable product.

1.14 REUSE - (TO USE AS ONCE WAS):

A. The use of "suitable" "salvage" for incorporation or re-incorporation in the Work. "Remove", "Relocate", and "Reinstall" as required for "Reuse".

1.15 SALVAGE - (TO BECOME ABANDONED):

A. "Remove", protect, "preserve" incomplete material condition as found "existing". Also to "Save". Determine suitability for incorporation in this Contract. Store at a location mutually agreed upon. Dispose of all "Excess".

1.16 UNKNOWN - (NOT SHOWN ON DRAWINGS):

A. Products beneath surfaces indicated by drawings and encountered during the Work. Immediately support, shore, and protect. Immediately notify the

Consultant and authority having jurisdiction. Allow free access for inspection. "Preserve" in proper condition until the Consultant determines definition and interpretation of Work. Take such measures as required for protection, reinforcement, or adjustment.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

SECTION 01200 - PROJECT MEETINGS

PART ONE - GENERAL

1.01 PRE-CONSTRUCTION CONFERENCE:

A. A Pre-construction Conference will be held at the site at a time to be designated by Owner.

B. Representatives of Contractor, including project superintendent, foreman (English speaking), and all subcontractors, shall meet with Owner or his appointed representative.

1.02 AGENDA:

A. As a minimum, the following items will be on meeting agenda:
   1. Designation of all personnel.
   2. Communication.
   3. Construction Schedule.
   4. Critical work sequencing and deck repair procedures.
   5. Existing facilities and maintenance of operation.
   6. Submittals procedures.
   7. Project record documents procedures.
   8. Processing Field and Change Orders.

1.03 AGENDA FOR PRE-CONSTRUCTION MEETING

A. Attendance:
   1. Owner (Representative, if desired by Owner).
   2. Consultant and On-site Inspector.
   3. Contractor (Manager, Superintendent, and Foreman).
   4. Subcontractors.
   5. Material Suppliers (if required).

B. Sign-in list for all attending including names, title, phone number, and company.

C. Contract Review:
   1. Execution.
   2. Insurance certificates.
   3. Bid review.
   4. Schedule of values and progress payment processing.
   5. Notice to proceed and start date.
   6. Bond, lien, and permit requirements.
   7. Project communications and problem resolution.
   8. Change order and additional work order processing.

D. Job Site Conditions and Requirements:
   1. Services (temporary):
      a) Water.
      b) Power (110, 220).
      c) Sanitary facilities.
      d) Parking areas.

e) Telephone access.
f) Review each of the above as to who shall furnish each, restrictions, and scheduling.

2. Site Access and Restrictions:
   a) Set-up areas, material storage, and handling.
   b) Protection of buildings, grounds, and building interior.
3. Working Area and Preparation:
   a) Review work flow and schedule.
   b) Preparation work by other trades.
   c) Protection of existing roof and deck.

E. Technical Sections:
1. Review submittals.
2. Function of on-site inspector and other on site personnel.
3. Material storage methods.
4. Roof drainage conditions.
5. Coordination of work with other trades; and Owner.
6. Testing.
7. System review.
8. Manufacturer inspections:
   a) Inspection scheduled.
   b) Final inspection and issuance of warranty.

F. Safety and Security - Review Contractor responsibilities, and establish Owner monitoring procedures.
G. Summary and Questions
H. Exchange phone numbers, business cards, and emergency and daily contacts.
I. Issue record of meeting minutes to all attendees.

1.04 AGENDA FOR PROJECT MEETING

A. Attendance:
1. Owner (Representative, if desired by Owner).
2. Consultant.
3. Contractor (Manager, Superintendent, and Foreman).
4. Subcontractors.

B. Sign-in list for all attending, including names, titles, phone numbers, and company name.
C. Project Review:
1. Problem resolution.
2. Project communication.
3. Change order and/or additional work.
4. Review projected work flow and schedule against work completed to date.
5. Progress payment processing.

D. Job Site Conditions:
1. Review set-up area, material storage, and handling.
2. Review work to date against schedule.

3. Review work by other trades.
4. Review quality of work to-date with Contractor and Manufacturer.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

SECTION 01300 - SUBMITTALS

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Submittals required by Specification Sections and as listed in attached List of Submittals.

1.02 REQUIRED SUBMITTALS:

A. Applicator's License Certificate: Copy of the roofing material manufacturer's agreement/contract indicating date application was approved and expiration date.
B. Copy of the Contractor's executed insurance certificate.
C. Material manufacturer's written approval/acceptance of specified warranty for project, fastener pattern layout, details, insulation, and all related materials based upon existing site conditions.
D. Copy of the Contractor's executed payment and performance bonds, if required.
E. Shop drawings of details, if proposed different from project drawings.
F. Manufacturer’s product data sheets and Material Safety Data Sheets (MSDS) on each material proposed for usage.
G. Sample of warranty that is to be issued upon project completion.
H. Submit list of all mechanical, electrical, rigging, sheet metal, and all other subcontractors with evidence of subcontractor's insurance coverage in compliance with contract requirements.
I. Detailed project schedule showing work phasing and proposed daily progress schedule.
J. Permits, notices, and approvals of governing bodies or agencies.

1.03 SHOP DRAWINGS:

A. Original drawings, prepared by Contractor, subcontractor, supplier, or distributor, which illustrate some portion of the Work, showing fabrication, layout, setting, or erection details, prepared by a qualified detailer.
B. Prepare shop drawings for those details that are proposed different than the project drawings. Indicate on a roof plan, the proposed location of detail presented on shop drawing.
C. Indicate joints, types, and locations of fasteners, shapes, sizes, expansion joints, special conditions, and installation procedures for each flashing condition. Note critical dimensions, gauge, and finish of sheet metal for each flashing condition.
D. Submit shop drawings showing layout, joining, profiles, and anchorages of fabricated work, including major counterflashings, trim, and fascia units, gutters, downspouts, scuppers, and expansion joint systems.

1.04 PRODUCT DATA:

A. Submit manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data for each material proposed for use in construction of roof assembly and related flashings and components.
   1. Clearly mark each copy to identify pertinent materials, products, or models.
   2. Show dimensions and clearances required.
   3. Show performance characteristics and capacities.
   4. Indicate the Specification Section and sub-paragraph that applies to each submittal.

1.05 SAMPLES:

A. Physical examples to illustrate materials, equipment, and workmanship; and to establish standards by which completed Work is judged, if requested.

1.06 CONTRACTOR RESPONSIBILITIES:

A. Review shop drawings, product data, and samples prior to submission. Initial, sign, or stamp, certifying the Contractor's review of the submittal.

B. Verify:
   1. Field measurements.
   2. Field construction criteria.
   3. Catalog numbers and similar data.

C. Coordinate each submittal with requirements of Work and of Contract Documents.

D. Contractor's responsibility for errors and omissions in submittals is not relieved by Consultant review of submittals.

E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by the Consultant's review of submittals, unless Consultant gives written acceptance of specific deviations.

F. Notify Consultant, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.

G. Begin no work which requires submittals until return of submittals with Consultant's stamp and initials or signature indicating review and indication to proceed as noted. Work performed prior to submission and approval of submittals may be subject for rejection.

H. Distribute copies after Consultant's approval.

1.07 SUBMISSION REQUIREMENTS:

A. Schedule submissions to the Consultant immediately after Contract award.

B. Submit five copies of submittals.

C. Submit three of each sample requested.

D. Accompany submittals with transmittal letter containing:
   1. Date.
   2. Project title and number.

3. Contractor's name and address.
4. The number of each submittal.
5. Notification of deviations from Contract Documents.

E. Provide each set of submittals bound together with a Cover and Table of Contents.

1.08 RE-SUBMISSION REQUIREMENTS:

A. Product Data and Samples: Submit new data and samples as required for initial submittal.

B. Shop Drawings:
1. Revise initial drawings as required and re-submit as specified for initial submittal.
2. Indicate on drawings any changes which have been made other than those requested by Owner.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW:

A. Consultant will retain two copies of approved or corrected submittals.

B. Consultant will forward one copy of approved or corrected submittals to Owner.

C. Consultant will return remaining copies to Contractor.

D. Contractor shall distribute remaining copies of submittals which carry Consultant's stamp as required for construction, including Contractor's file, jobsite file, subcontractors, suppliers, and fabricators.

1.10 LIST OF SUBMITTALS:

SECTION 01300 - SUBMITTALS

- Submittals - 5 copies.

SECTION 01600 - MATERIAL AND EQUIPMENT

- Substitution Request Form - 2 copies.

SECTION 01700 - CONTRACT CLOSEOUT

- Warranties and Bonds.
- Evidence of Payment and Release of Liens.

SECTION 02072 - MINOR DEMOLITION AND RENOVATION WORK

- Product Data.

SECTION 04500 – MASONRY REPAIR AND CLEANING

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Mortar mix designs
- Manufacturer's Installation Instructions.

SECTION 07220 - ROOF AND DECK INSULATION

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Manufacturer's Installation Instructions.

SECTION 07300 – SHINGLE ROOFING

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Manufacturer's Installation Instructions.

SECTION 07410 – METAL ROOFING AND SIDING

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Manufacturer's Installation Instructions.

SECTION 07533 – THERMOPLASTIC MEMBRANE ROOFING

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Manufacturer's Installation Instructions.

SECTION 07540 – FLUID APPLIED ROOFING

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Manufacturer's Installation Instructions.

SECTION 07620 - SHEET METAL FLASHING AND TRIM

- Product Data.
- Shop Drawings, where applicable.
- Samples, if requested.
- Color Chart.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

SECTION 01400 - QUALITY CONTROL

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. General Quality Control.
B. Manufacturers' Field Services.

1.02 QUALITY CONTROL, GENERAL:

A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
B. Contractor shall be approved by manufacturer to perform the work for the specified guarantee period. Contractor shall have completed previous projects utilizing same materials and provide same warranty as specified herein.
C. Examine each phase of Work and have defective conditions corrected before starting subsequent operations that would cover, or are dependent upon, work in question.
D. Where visual examination is not sufficient, such as in verifying slope of roof deck for proper drainage, use instruments with qualified operators to examine work.
E. Utilize Owner's testing laboratory when services are necessary to assist Contractor in evaluating quality.
F. Perform roof removal and new roof material installation using full-time employees of the Contractor. Installers shall have a minimum of 10-years experience installing the specified system.
G. **Contractor shall have on-site at all phases of work English speaking foreman for communication purposes.**

1.03 WORKMANSHIP:

A. Comply with industry standards, except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B. Utilize qualified personnel who have experience with the specified materials to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
D. Provide finishes to match accepted samples.

1.04 MANUFACTURER'S FIELD SERVICES:

A. When specified in respective Specification Section, require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, and to make appropriate recommendations.
B. A representative of the roof system manufacturer shall visit the project in

progress every two weeks and submit to the owner and consultant a written report of findings.

C. Notify manufacturer's representative a minimum of two weeks prior to date of final inspection. Manufacturer's representative shall conduct an inspection of the completed roof before the final inspection or shall attend the final inspection.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART ONE - GENERAL

1.01 SANITARY FACILITIES:

A. Provide adequate temporary chemical toilets at time Work is commenced.

B. Maintain facilities in compliance with applicable health laws and regulations. Keep clean and unobtrusive.

C. Upon completion of Work, remove these facilities and all traces thereof.

1.02 STORAGE OF MATERIALS:

A. Provide suitable non-combustible, watertight coverings for storage of materials subject to damage by weather. Covering shall be of sufficient size to hold materials required on site at one time. Pallets shall be raised at least 6-inches (150mm) above ground, on heavy joists or sleepers.

B. If temporary storage sheds are used, locate storage areas where directed, maintain in good condition, and remove storage sheds when so directed. Locate storage areas of combustible construction a minimum of 30 feet (10m) from existing building.

C. Store materials on site unless otherwise approved by Owner.

D. Cover and protect materials subject to damage by weather, including during transit.

E. Do not use building as storage facility.

F. Provide additional storage at no cost to Owner in the event that additional storage area is required beyond that provided at project site.

G. Stored materials shall be available for inspection by Owner at all times.

H. Store flammable and volatile liquids in sealed containers located a minimum of 20 feet from existing buildings.

I. Transport flammable or volatile liquids in, and use from, U.L. listed safety cans.

J. Deliver material and equipment in manufacturer's original packaging with all tags and labels intact and legible. Handle and store material and equipment in such a manner as to avoid damage. Liquid products shall be delivered sealed, in original containers. Store roll goods in an upright position.

K. Proper storage of materials is the sole responsibility of Contractor. Protect all materials susceptible to moisture including, but not limited to, all roll goods, insulation, cant strip, wood, and plywood in dry, above ground, watertight storage. Keep all labels intact and legible, clearly showing the product, manufacturer, and other pertinent information.

L. Reject any materials becoming wet or damaged and remove from the jobsite immediately. Any insulation found to be improperly stored at the jobsite shall be considered wet at the discretion of Owner's Representative and removed from the jobsite.
M. Maintain products liable to degrade as a result of being frozen above 40 degrees Fahrenheit (4 degrees Celsius) in heated storage.
N. Random samples of all materials susceptible to moisture will be taken at various stages of the installation to ensure no significant variations in moisture.
O. Distribute material, debris, and equipment over the roof deck to avoid damage to the structural deck. Not more than two weeks supply of material shall be stored on a roof at any given time. Place materials and equipment to be stored on the roof as nearly direct over structural members as can be determined. Secure equipment, material, and debris on the roof to prevent movement by wind or other elements. Contractor assumes full responsibility for loading on the structural deck or roofing materials during roof replacement operations. Owner's Representative reserves the right to reject any loadings deemed unacceptable.

1.03 TEMPORARY WATER:

A. Make arrangements with Owner for water required for construction. Owner will pay for costs of water.
B. Provide hoses for conveyance.

1.04 TEMPORARY ELECTRICAL ENERGY:

A. Make arrangements with Owner for temporary electrical service for completion of the Work. Owner will pay energy charges for temporary power and lighting.
B. Provide all necessary temporary wiring (in conduit if requested by Owner), extensions, and temporary lighting devices.

1.05 TEMPORARY LADDERS, SCAFFOLDS, HOISTS:

A. Furnish and maintain temporary ramps, scaffolds, hoists, or chutes as required for proper execution of Work.
B. Such apparatus, equipment, and construction shall meet requirements of applicable federal, state, and local safety and labor laws.

1.06 GUARDRAILS, BARRICADES, AND TEMPORARY COVERINGS:

A. Provide barricades as required to protect natural resources, site improvements, existing property, adjacent property, and passers-by.
B. Where pedestrian traffic is through or adjacent to work areas, provide necessary guardrails and barricades to protect pedestrians and to prevent pedestrian access to Work areas.
C. Remove guardrails and barricades at completion of construction.
D. Provide suitable temporary watertight coverings over windows and roof

openings as required to protect interior equipment from inclement weather.

E. Provide suitable protection for stairs, elevator, and/or walls and floors in areas used for contractor roof access.

F. Provide temporary 6-foot (2m) chainlink fence around kettle and setup areas.

1.07 PROTECTION:

A. Maintain bench marks, monuments, and other reference points. If disturbed or destroyed, replace as directed.

B. Protect existing adjacent streets, sidewalks, curbs, buildings, and property including trees, lawns, and plants.

C. Refer to Section 01120 for protection requirements of existing building.

1.08 TEMPORARY FIRE PROTECTION:

A. During construction, Contractor and his subcontractors and sub-subcontractors and their agents and employees shall comply with fire safety practices as outlined in NFPA Pamphlet 241 and local fire protection codes, and in addition shall:

1. Provide following stored pressure extinguishers during entire construction period:
   a. One U.L. rating 4A-60B:C dry chemical fire extinguisher.
   b. One U.L. rating 2A 2-1/2 gallon water fire extinguisher.
   c. One U.L. rating 10B:C carbon dioxide fire extinguisher with horn and hose assembly.
2. Provide fire extinguishers together in each of following areas:
   a. Each 3000 square feet of work area or fraction thereof.
   b. Each temporary structure including construction office and storage and tool and workshop sheds.
   c. Each kettle area when kettle is in use.
3. Contractor's superintendent or other assistant superintendents shall be appointed as project fire warden for entire construction period.
4. Train workmen in proper use of each type fire extinguisher.
5. Post telephone number of fire department, specific information regarding location of on-site fire fighting equipment, and procedures to be followed in event of fire.
6. Maintain free access at all times to fire extinguisher equipment, street fire hydrants, and outside connections for standpipe hose systems.
7. Maintain all exit facilities and access thereto, free of material and other obstructions.

1.09 EMPLOYEE CONTROL:

A. Do not allow construction employees to enter Owner-occupied areas. Maintain construction traffic in designated access routes.

1.10 PARKING FACILITIES:

A. Parking area for a designated number of construction personnel vehicles will

be made available at the site by Owner.

1.11 CLEANING DURING CONSTRUCTION:

A. Oversee cleaning and ensure that building and grounds are maintained free from accumulations of waste materials and rubbish.
B. Sprinkle dusty debris with very fine water mist to control accumulation of dust. Do not use water in quantity so as to puddle.
C. At not less than every day during progress of work, clean up work areas and access areas and dispose of waste materials, rubbish, and debris.
D. At Contractor's option, on-site dump containers may be used for collection of waste materials, rubbish, and debris. Locate containers a minimum of 30 feet (10m) away from building entrances at a location acceptable to Owner. If used, remove containers when filled.
E. Do not allow waste materials, rubbish, and debris to accumulate and become an unsightly or dangerous condition.
F. Remove waste materials, rubbish, and debris from site and legally dispose of at public or private dumping areas off Owner's property.
G. Keep streets and access to site free of rubbish and debris.
H. Lower waste materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.

1.12 LEAK (WATER) DAMAGE CONTROL:

A. In the event of rain during roof replacement construction operations, immediately inspect interior of building for leaks.
B. Coordinate with Owner for access to building.
C. Continue to inspect building on a regular basis until rain ceases.
D. If leaks are discovered during rains, immediately cover and protect equipment with fire retardant sheeting in the area of the leak. Immediately notify Owner of leak condition.
E. Perform emergency repairs on roofing to stop leaks.
F. Take all necessary precautions to protect the roof mat and deck from damage. Repair all new areas of damage caused by the negligence of Contractor, at Contractor's expense. Owner's On-site Representative shall determine damage caused by Contractor negligence.
G. Contractor is to be aware of the potential for roof leaks on the existing roof as a result of ruptured blisters and/or roof mat damage as a result of the vacuum process, foot traffic, or material and equipment storage. As a result, Contractor is to take all necessary precautions to prevent damage to the existing roof. All damage to the existing roof that could result in roof leaks is to be repaired on a daily basis by Contractor.

1.13 PERMITS:

A. Obtain and pay for all required local and state permits, licenses, and registrations. Work may be subject to ordinances, laws, codes, and regulations.

B. Prior to bidding, notify Owner and Consultant of any violation, omission, or questions of compliance. Required corrections to Specifications will be made via Addenda prior to receipt of Bids.
C. Be responsible for full compliance and bear cost of additional work not specified that may be required by authorities having jurisdiction.

1.14 REGULATORY REQUIREMENTS:

A. [[Uniform Building Code (UBC)]] [[Standard Building Code (SBC)]] [[Other]], latest edition; as amended by [[the City of _____]] [[Other _____]].
B. Occupation Safety and Health Administration (OSHA) requirements, as applicable.
C. United States Environmental Protection Agency (EPA) requirements, as applicable.
D. Adhere to all limitations, cautions, and regulatory standards referenced by the manufacturer of each material provided.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

WELDING OR CUTTING PERMIT

Contractor: _____ Valid from _____ to _____
Work Location: _____

CONDITIONS TO BE FOLLOWED:

1. Keep work area free of all combustible material.
2. Fire-retardant tarpaulins are acceptable and shall be used.
3. Keep all welding and cutting equipment outdoors whenever possible.
4. If acetylene and oxygen tanks are required indoors, keep them as far from the actual work location as possible.
5. Remove all welding or cutting equipment, whenever practical, from building daily.
6. Keep all equipment such as cables, hoses, regulators, etc., in good condition.
7. Post a fire watch furnished by Contractor, consisting of at least one man with no other assigned duties, at all times to stand by and observe area for any potential hazards while welding or cutting is being done.
8. Equip fire watch with suitable personal eye protection and fire extinguishers as follows:

WORK AREA	TYPE EXTINGUISHERS	NO. REQUIRED
Equipment spaces	CO^2 (15 pound)	2
Other spaces	Water (22 gallon)	1
	CO^2 (15 pound)	1

9. All extinguishers are to be furnished by Contractor.
10. Make two inspections of the work area upon completion of the welding/cutting operation. The first shall be made one-half hour after completion of work followed by another inspection one-half hour later.

I hereby agree to perform the necessary welding or cutting operations as outlined in this permit.

_____ _____
Contractor's Signature Date

The work area involved has been inspected by an Owner's Representative, and all requirements outlined have been explained.

APPROVED BY:

_____ _____
Owner's Representative Date

SUBSTITUTION REQUEST FORM

TO:
Mr._____
Owner

PROJECT NO.: __-____
FROM(CONTRACTOR/BIDDER):

Attn:

CONTRACTOR (BIDDER) HEREBY REQUESTS ACCEPTANCE OF THE FOLLOWING PRODUCT OR SYSTEM AS A SUBSTITUTION IN ACCORDANCE WITH PROVISIONS OF DIVISION ONE OF THE SPECIFICATIONS:

1. **SPECIFIED PRODUCT OR SYSTEM:**
   Substitution request for (Generic Description):
   Specification Section No._____ Article(s) _____ Para.(s)_____

2. **SUPPORTING DATA:**
   Product data for proposed substitution is attached (description of product, reference standards, performance and test data).
   ☐ Sample is attached ☐ Sample will be sent if requested

3. **QUALITY COMPARISON:**

	SPECIFIED PRODUCT	SUBSTITUTION
Name, Brand:	_____	
Catalog No.:	_____	
Manufacturer:	_____	
Vendor:	_____	
Significant Variations:	_____	
	_____	

Maintenance Service Available: ☐ Yes ☐ No

Spare Parts Source:

4. PREVIOUS INSTALLATIONS:
Identification of similar projects on which proposed substitution was used:
Project: _____ Architect:
Address: _____ Owner:
_____ Date Installed:

5. REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEMS:

6. EFFECT OF SUBSTITUTION:
Proposed substitution affects other parts of Work: ☐ No ☐ Yes
(If yes, explain)

Substitution changes contract time: ☐ No ☐ Yes
Add/Deduct _____days

Substitution requires dimensional revision or redesign of structure or M & E Work:
☐ No ☐ Yes (If yes, attach complete data.)

Saving or credit to Owner, if any, for accepting substitution: $_____.
Extra cost to Owner, if any, for accepting substitution: $_____.

7. CONTRACTOR'S (BIDDER'S) STATEMENT OF CONFORMANCE OF PROPOSED SUBSTITUTION TO CONTRACT REQUIREMENTS:
I/we have investigated the proposed substitution. I/we:
- believe that it is equal or superior in all respects to specified product, except as stated above;
- will provide the same warranty as specified for specified product;
- will pay redesign and special inspection costs caused by the use of this product;
- will pay additional costs to other contractors caused by the substitution;
- will coordinate the incorporation of the proposed substitution in the Work;
- will modify other parts of the Work, as may be needed, to make all parts of the Work complete and functioning;
- waive future claims for added cost to Contract caused by the substitution.

Contractor (Bidder): _____ Date:
By:
Answer all questions and complete all blanks - use "NA" if not applicable.

CONSULTANT'S REVIEW AND ACTION

☐ Resubmit Substitution Request Form:
Provide more information in the following categories: _____

☐ Sign Contractor's (Bidder's) Statement of Conformance.

☐ Substitution is accepted.

☐ Substitution is accepted with the following comments:

☐ Substitution is not accepted.

☐ Substitution Request Form received too late.

Consultant

Title

Date

Owner

SECTION 01700 - CONTRACT CLOSEOUT

PART ONE - GENERAL

1.01 GENERAL:

A. Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

1.02 SUBSTANTIAL COMPLETION:

A. Contractor: Shall notify Consultant that Project is substantially complete and schedule time for inspection.
B. Consultant will make an inspection after notification.
C. Should Consultant consider Work not complete:
   1. He will immediately notify Contractor, in writing, stating reasons.
   2. Contractor shall complete Work and send second written notice to Consultant certifying Project is substantially complete.
   3. Consultant will reinspect Work.

1.03 FINAL INSPECTION:

A. Contractor shall submit written certification that:
   1. Contract Documents have been reviewed.
   2. Project has been inspected for compliance with Contract Documents.
   3. Work has been completed in accordance with Contract Documents.
   4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
   5. Project is complete and ready for final inspection.
B. Consultant will make final inspection after notification from Contractor.
C. Should Consultant consider Work complete in accordance with requirements of Contract Documents, he will request Contractor to make Project Closeout submittals.
D. Should Consultant consider Work not complete:
   1. He will notify Contractor in writing, issuing inspection list to Contractor with noted items requiring further consideration.
   2. Contractor shall take immediate steps to remedy the stated deficiencies and submit initialed inspection list to Consultant certifying Work is complete.
   3. Consultant will reinspect Work.

1.04 REINSPECTING COSTS:

A. Should Consultant be required to perform subsequent inspections of the Work due to the failure of the Contractor to correct deficient work, Owner will compensate Consultant for additional services and deduct amount paid to Consultant from the final payment to Contractor.

1.05 CLOSE-OUT SUBMITTALS:

A. Evidence of compliance with requirements of governing authorities.
B. Warranties and Bonds: Refer to requirements of this Section.
C. Evidence of Payment and Release of Liens: Refer to requirements of General and Supplementary Conditions.

1.06 WARRANTY/GUARANTEE:

A. Submit original and duplicate copies of both Contractor's Warranty and Manufacturer's Guarantee to Consultant for review. After review, Consultant will forward Warranty and Guarantee to Owner. Consultant shall approve final pay application (retainage) upon receipt of both Contractor's Warranty and Manufacturer's Guarantee.

1.07 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS:

A. Final Release and Waiver of Liens:
    1. Contractor's Waiver of Liens.
    2. Separate waivers of liens for subcontractors, suppliers, and others with lien rights against property of Owner, together with complete list of those parties.
B. All submittals shall be notarized and sealed before delivery to Consultant.

1.08 FINAL ADJUSTMENT OF ACCOUNTS:

A. Submit final statement of accounting to Consultant.
B. Statement shall reflect all adjustments.
    1. Original Contract Sum.
    2. Additions and Deductions resulting from:
        a. Previous Change Orders.
        b. Deductions for uncorrected Work.
        c. Deductions for Reinspection Payments.
    3. Total Contract Sum, as adjusted.
    4. Previous payments.
    5. Sum remaining due.
C. Consultant will prepare final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

1.09 FINAL APPLICATION FOR PAYMENT:

A. Submit final application in accordance with requirements of General Conditions.
B. Owner and Consultant shall review all data supplied for conformance with Contract Documents. When approved, Owner will accept the Work, release Contractor (except as to conditions of the Performance Bond, any legal rights of Owner, required guarantees, and correction of Faulty Work after final Payment), and make final payment to Contractor.
C. Final payment will not be approved or released until receipt of proper close-out documents.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION

SECTION 01710 - CLEANING

PART ONE - GENERAL

1.01 GENERAL:

A. Maintain premises free from accumulations of waste, debris, and rubbish caused by construction operations.

B. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials. Clean all sight-exposed surfaces. Leave project clean and ready for occupancy.

1.02 REQUIREMENTS OF REGULATORY AGENCIES:

A. Codes and Standards: Applicable federal, state, and local codes and regulations relative to environmental safety regulations.

B. Hazards Controls: Store volatile waste in covered metal containers and remove from premises daily. Prevent accumulation of wastes which create hazardous conditions.

C. Pollution Control: Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on the project site is prohibited.
2. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is prohibited.

PART TWO - PRODUCTS

2.01 CLEANING MATERIALS:

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART THREE - EXECUTION

3.01 DURING CONSTRUCTION:

A. Keep work area and all occupied property in neat and orderly condition at all times. Oversee cleaning and ensure that building and grounds are maintained free from accumulations of waste materials and rubbish. Sprinkle dusty debris with very fine water mist to control accumulation of dust. Do not use water in quantity so as to puddle. Do not allow waste and other materials such as rubbish, debris, wrappers, etc., to accumulate and become unsightly or hazardous. Promptly remove equipment and excess materials as they become no longer needed for the progress of the work. At not less than every day during progress of work, clean up work and access areas and dispose of

waste materials, rubbish, and debris. Legally dispose of waste materials, rubbish, and debris at public or private dumping areas off Owner's property. At the completion of work, restore work area to its original condition. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights. Keep street and access to site free of rubbish and debris.

B. Contractor shall be responsible for damage to or destruction of property of any sort resulting from the work or caused by defective work, or the use of unsatisfactory materials or workmanship.

C. Contractor shall be responsible for the preservation of all private property, trees, fences, etc., along the adjacent street, right-of-way, etc., and shall use every precaution necessary to prevent damage or injury thereto. Use suitable precautions to prevent damage to pipes, conduits, and other structures.

D. If damage to any structures, utilities, or other improvement occurs by reason of Contractor's operations even though special precautions have been employed, Contractor shall be entirely responsible for such damage and shall make all repairs as required to the satisfaction of Owner.

E. Do not injure, destroy, or trim landscaping without authorization by Owner. Landscaping damage will be replaced by Contractor with new stock or with other stock satisfactory to Owner at the expense of Contractor.

3.02 FINAL CLEANING:

A. Employ skilled workmen for final cleaning.

B. Remove grease, mastics, adhesives, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces.

C. Repair, patch, and touch-up marred surfaces to match adjacent finishes.

D. Broom clean paved surfaces; rake clean other surfaces of grounds.

E. Clean exterior stairway and staging areas.

F. Prior to final completion or Owner occupancy, conduct an inspection of sight-exposed interior and exterior surfaces and all work areas to verify that entire Work area is clean.

END OF SECTION

SECTION 02072 - MINOR DEMOLITION AND RENOVATION WORK

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Removal of existing roofing, insulation, flashing, and sheet metal to the structural roof deck.
B. Required minor deck repair or replacement for roof repair work.
C. Modification of existing roof penetrations, equipment supports or curbs, pitch pans, reglets, piping, and electrical service to provide proper flashing height and flashing detail.
D. Routing of existing roof drains lines.
E. Install new nailers and curbs at designated locations.
F. All other miscellaneous and incidental work required to install complete roofing system as specified and to obtain specified manufacturer's warranty.

1.02 RELATED SECTIONS:

A. 04500 – Masonry Cleaning and Restoration
B. 07220 – Roof and Deck Insulation
C. 07300 – Shingle Roofing
D. 07410 – Metal Roofing and Siding
E. 07533 – Thermoplastic Membrane Roofing
F. 07540 – Fluid Applied Roofing
G. 07620 - Sheet Metal Flashing and Trim.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Corps of Engineers (CRD).

1.04 PROJECT CONDITIONS:

A. Environmental Requirements:
    1. Do not remove existing roofing and flashing in inclement weather or when rain is predicted with 30 percent possibility.
    2. When ambient temperature is below 60 degrees Fahrenheit (15 degrees Celsius), expose only enough cement and adhesive required within four hour period.
    3. Do not expose membrane and accessories to constant temperature in excess of 180 degrees Fahrenheit (82 degrees Celsius).
B. Emergency Equipment: Maintain on-site materials necessary to apply emergency temporary seal in event of sudden storms or inclement weather.
C. Smoking is prohibited on roof areas, in existing building, and all of Owner's property.

1.05 SEQUENCING AND SCHEDULING:

A. Sequence minor demolition and renovation with sequence of new work to

maintain facility in dry, watertight condition.

B. Coordinate roof work so that no more existing items are removed in one day than can be replaced with new roofing work in same day.

C. Coordinate work with Owner's operational requirements.

D. Coordinate demolition work and removal with roofing work to maintain facility in dry, watertight condition.

1.06 WARRANTY:

A. Provide Contractor's warranty covering defects in installed materials and workmanship for period of two years from date of final acceptance.

PART TWO - PRODUCTS

2.01 MATERIALS:

A. Wood Members, Nailers, and Blocking: Pressure preservative treated in accordance with AWPA C2, C9 standards, Ground Contact using Chromated Copper Arsenate (CCA) at 0.40 pounds (0.1kg) per cubic foot (0.03cm) wood. Preservatives shall be compatible with roof membrane. Size shall be appropriate for application, minimum 2-inch (50mm) (nominal) thickness.

B. Lumber:

1. Noncombustible Standard Grade Fir or No. 2 Southern Yellow Pine bearing UL label.
2. Complying with American Lumber Standards of manufacturer's association under whose rules lumber is produced.
3. Marked with mill identification.
4. Moisture Content: 19 percent maximum at time of installation.

C. Plywood: Minimum 1/2-inch (13mm) rated sheathing, EXP 1 or "CDX", bearing APA trademark.

D. Fasteners:

1. Wood Substrate:
   a. Securement of metal flanged items shall be nails, No. 10 gauge, galvanized steel wire with 13/32-inch (10mm) diameter head and ring shank such as No. 3255 by Dickson Weatherproof Nail Co. (800/572-9351).
   b. Securement of wood to wood shall be nails, No. 9 gauge, galvanized steel wire nail with ring shank and 5/16-inch (8mm) diameter head such as No. 3055 by Dickson Weatherproof Nail Co. (800/572-9351); length required to provide 1-inch (25mm) penetration minimum into substrate.
   c. Securement of exposed items to wood substrate shall be nails, No. 10 gauge, galvanized steel wire nail with 3/8-inch (9mm) diameter head, ring shank, and EPDM rubber washer such as No. 955 by Dickson Weatherproof Nail Co. (800/572-9351); length required to provide 1-inch (25mm) penetration minimum into substrate.

d. Fasteners for securing roofing materials to wood substrate shall be a hardened steel nail with a 1-inch (25mm) diameter round head and ring shank; length to provide 1-inch (25mm) penetration into substrate, as manufactured by Simplex Nail Co.
e. Fasteners for securing steel to wood substrate shall be steel wood screw with steel washer and integral rubber seal.

2. Concrete Substrate:
   a. Fasteners for securing sheet metal items to concrete substrate shall be a pre-assembled drive anchor with a stainless steel drive screw, a lead/zinc alloy expansion anchor boday (1/4-inch (6mm) diameter, 1-1/2-inch [38mm] length) and a stainless steel washer with integral rubber seal (1-1/8-inch diameter) such as "Zamac Hammer-Screw" as manufactured by Powers Rawl.
   b. Fasteners for securing wood blocking to concrete substrate shall be sleeved stud expansion bolt, 1/2-inch (13mm) diameter (minimum), with 3/4-inch diameter steel washer such as "Kwik Bolt II" by Hilti.
3. Masonry Substrate:
   a. Fasteners for securing wood to solid masonry shall be galvanized steel expansion anchor, 3/8-inch (9mm) diameter (minimum), with 3/4-inch diameter steel washer such as "Countersunk Kwik Bolt II" by Hilti.
   b. Fasteners for securing wood to hollow base masonry shall be 3/8-inch (9mm) diameter (minimum), threaded rod, with 3/4-inch diameter washer, nut, and screen tube such as "HIT C-20 Adhesive Anchor" by Hilti.
   c. Fasteners for securing sheet metal items to concrete substrate shall be a pre-assembled drive anchor with a stainless steel drive screw, a lead/zinc alloy expansion anchor body (1/4-inch (6mm) diameter, 1-1/2-inch [38mm] length) and a stainless steel washer with integral rubber seal (1-1/8-inch diameter) such as "Zamac Hammer-Screw" as manufactured by Powers Rawl.
4. Steel Substrate:
   a. Fasteners for securing wood to steel substrate shall be self-drilling coated heavy duty screw, 1/4-inch (6mm) diameter (minimum), with 5/8-inch (16mm) diameter washer such as "#14 Heavy Duty Screw" by Olympic.
   b. Fasteners for securing steel to steel substrate shall be self-tapping steel screw with steel washer and integral rubber seal.

E. Rust Inhibitive Primer: 100 percent acrylic resin primer such as “Metalclad Interior-Exterior Acrylic Latex Flat Primer & Finish #41702”, Devoe & Raynolds Co.

F. Primer: Quick-drying type, approved by the roofing manufacturer.
G. Roof Drain: Match existing drain diameter (minimum), coated cast iron body with combination flashing clamp/gravel guard and cast iron strainer to accommodate existing pipe diameter such as “Wade 3000”, “Zurn Z-100”, “Smith 1010”, or “Josam 25000”.
H. Storm Water Piping: Storm water piping shall be cast iron pipe and fittings, coated inside and outside, manufactured in accordance with ASTM A 74, FS WW-P-401, and CISPI 301. Weight of pipe shall be as required by code for location and duty. Joints shall be fabricated by the use of "push-on" type gasketed joints or "no-hub" mechanical joints, such as manufactured by Fernco (800/521-1283).

PART THREE - EXECUTION

3.01 EXAMINATION:
A. Examine existing building and existing roofing to determine existing physical conditions that affect removal of existing roofing and installation of new roofing.
B. Verify that required barricades and other protective measures are in place.

3.02 PREPARATION:
A. Take measures to maintain watertight conditions during term of Contract.
B. Install interior protection and dust partitions where deck penetrations shall be removed or replaced.
C. Protect adjacent surfaces.
D. Roof Drains:
1. Examine existing drain lines for debris or blockage.
2. Clean drains and drain lines, removing debris, excessive bitumen, or aggregate. Flush with water to ensure that drains flow freely.
3. Cap drains with drain plugs during daily operations.
4. Remove plugs after daily clean-up and prior to onset of rainfall.

3.03 MINOR DEMOLITION OPERATIONS:
A. Execute demolition in careful and orderly manner with least possible disturbance or damage to adjoining surfaces and structure.
B. Avoid excessive vibrations in demolition procedures that would be transmitted through existing structure and finish materials.
C. Roof Removal:
1. Remove existing roofing, insulation, and flashings; abandoned and obsolete equipment; pitch pans, vents, curbs, and other such items; and sheet metal down to roof deck.
2. Trim existing counterflashing as required for installation of new materials.
3. Do not stockpile debris on roof surface. Promptly dispose of obsolete equipment and debris at authorized disposal site each day. Use

chutes to transfer debris from roof surface to dumpsters.

4. Provide protective method, such as plywood set on minimum 1-inch EPS insulation, when hauling debris over existing roof membrane.

3.04 MINOR RENOVATION WORK:

A. Prepare substrates in accordance with roofing manufacturer's recommendations.

B. Decking:

1. Install new decking of like type, weight, gauge, and dimensions to provide suitable substrate in areas of deteriorated deck or where penetrations through deck are removed.
2. Wood Decking: Where underside of deck is not exposed, utilize plywood, thickness to match existing, for repairs. Where underside of deck is exposed, utilize same material and dimension as existing

C. Nailers:

1. Replace damaged or deteriorated wood nailers and curbs with new nailers and curbs as required.
2. Install additional nailers as required as part of Base Bid price.
3. Clean and prepare existing surfaces to receive wood nailers and curbs.
4. Install wood nailers and curbs continuously with 1/4-inch (6mm) gap between each section. Set level and true. Pre-drill nailers prior to attachment.
5. Securely fasten to structure with appropriate fasteners to resist minimum 175 pounds per linear foot force in any direction. Use of powder-actuated fasteners is prohibited. Place a fastener within 3-inches of each end of each section of wood blocking.
6. Secure nailers to wood deck with screws spaced 12-inches on-center, 6-inches on-center, 10 foot from each corner.
7. Secure nailers to wood substrate using nails 24-inches on-center, staggered. Install nails on an angle.
8. If attaching wood nailer to vertical masonry wall, utilize appropriate anchors spaced 12-inches on-center.
9. Reduce fastener spacing 50 percent at a distance of 10 feet from each corner.

D. New Roof Drains: (Bid Alternate #1)

1. Take accurate measurements to ensure proper location of deck coring and to verify that core location will not interfere with operation of existing piping, ductwork, or equipment in ceiling.
2. Deck cutting shall be performed by trained specialist equipped with proper tools for clean, plumb, and neat work to provide satisfactory opening to receive new roof drain.
3. Install temporary interior protection walls to extend to existing ceiling, piping, ductwork, equipment, and interior finishes to prevent damage from dust, falling debris, and water.
4. Cutting shall take place at time and day pre-approved by Owner.

5. Cutting must take place in presence of roofing contractor's forces. In case of sudden unexpected rain, roofing contractor shall temporarily seal opening watertight.
6. Install roof drains in accordance with manufacturer's code and instructions.
7. Install piping in neat manner with piping run parallel with or perpendicular to lines of structure. Install pipe hangers to maintain accurately aligned piping systems, adequately supported both laterally and vertically.
8. Restore interior wall or ceilings disturbed or damaged by drain or piping modifications. Match existing materials and finish.
9. Upon completion of roof drain installation, test drains and drain lines for leaks. Repair and retest until drains and drain lines do not leak.

E. Mortar Mixes:
1. Measurement and Mixing: Measure cementitious and aggregate material in dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in clean mechanical batch mixer.
2. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding water. Then mix again adding only enough water to produce damp, unworkable mix which will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one to two hours. Add remaining water in small portions until mortar of desired consistency is reached. Use mortar within thirty minutes of final mixing; do not retemper or use partially hardened material.
3. Colored Mortar: Produce mortar of color required by use of selected ingredients. Do not adjust proportions without Architect's approval.
4. Color Pigmented Mortar: Where colored mortar pigments are indicated, do not exceed pigment-to-cement ratio of 1 to 10 by weight.
5. Do not use admixtures in mortar unless otherwise indicated.

F. Brick Rebuilding:
1. Install salvaged brick to replace removed brick. Fit replacement units into bonding and coursing pattern of existing. If cutting is required, use motor driven saw designed to cut masonry with clean, sharp, unchipped edges.
2. Lay replacement brick with completed filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet clay brick using wetting methods that ensure units are nearly saturated but surface dry when laid. Maintain joint width for replacement units to match existing.
3. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.

3.05 CLEANING:

A. Materials, equipment, and debris resulting from demolition operations shall become property of Contractor. Remove and dispose of demolition debris in accordance with applicable city, state, and federal laws at authorized disposal site.

B. Leave substrate clean and dry, ready to receive roofing system.

END OF SECTION

SECTION 04500 - MASONRY RESTORATION AND CLEANING

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Repairing loose, damaged, and/or cracked masonry.
B. Cleaning existing masonry surfaces.
C. Application of water repellent sealer to masonry at indicated areas.

1.02 RELATED SECTIONS:

A. 02072 - Minor Demolition and Renovation Work.
B. 07220 - Roof and Deck Insulation.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Brick Institute of America (BIA).

1.04 SUBMITTALS:

A. Provide Submittals in accordance with Section 01300 - Submittals.
B. Product Data: Submit manufacturer's technical data for each product, including recommendations for product application, installation, and use.
C. Samples: Provide on-site in-place sample or "mock-up", minimum 2 feet by 2 feet in dimension, depicting cleaned masonry surface, mortar crack repairs, and application of clear sealer, if required.
D. Quality Control Submittals: Submit test reports and certifications substantiating that products comply with requirements.
E. Submit manufacturer's written Material Safety Data Sheet (MSDS) for each material used in this Section.
F. Submit sample of brick masonry unit to be used for brick replacement units. Sample to show dimension, color, texture, and appearance.

1.05 QUALITY ASSURANCE:

A. Installation Qualifications: Work must be performed by a firm having not less than five years successful experience in comparable masonry restoration projects and employing personnel skilled in comparable restoration processes and operations.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials to site in manufacturer's original unopened containers and packaging, bearing labels including manufacturer's name, product name, type of material, batch number, date of manufacture, shelf life, and instructions for use.
B. Carefully pack, handle, and ship masonry units and accessories strapped together in suitable packs or pallets or in heavy cartons. Unload and handle to prevent chipping and breakage.

C. Protect masonry restoration materials during storage and construction from wetting by rain, snow, or ground water and from staining or intermixture with earth or other types of materials.
D. Protect grout, mortar, and other materials from deterioration by moisture and temperature. Store in dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage and installation.
E. Remove damaged, deteriorated, or out-of-date material from site.

1.07 PROJECT CONDITIONS:

A. Protect persons, motor vehicles, and surfaces around masonry being restored, building site, and surrounding buildings from injury, contamination, soiling, and damage resulting from masonry work.
B. Prevent chemical solutions from coming into contact with pedestrians, motor vehicles, landscaping, adjacent buildings, and other surfaces which could be damaged by contact.
C. Do not clean masonry during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
D. Dispose of runoff from cleaning operations by legal means and in manner to prevent soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
E. Furnish and erect temporary protection covers over pedestrian walkways and at points of entrance and exit for persons and for vehicles which must remain in operation during course of masonry restoration work.
F. Work masonry surfaces only when air temperatures are 40 degrees Fahrenheit (4 degrees Celsius) and above and will remain so at least seven days after masonry work and until masonry has dried out.
G. Do not repair or install mortar joints or repair masonry unless air temperatures are between 40 degrees Fahrenheit (4 degrees Celsius) and 80 degrees Fahrenheit (27 degrees Celsius) and will remain so for forty-eight hours minimum after repair.
H. Prevent grout or mortar used in repair work from staining face of surrounding masonry and other surfaces. Remove grout and mortar in contact with exposed masonry and other surfaces immediately.
I. Protect sills, ledges, and projections from mortar droppings.

1.08 SEQUENCING AND SCHEDULING:

A. Perform masonry restoration work in following sequence.
    1. Replace steel lintels.
    2. Rake out and remove existing mortar from joints to be sealed.
    3. Repair loose brick masonry.
    4. Rout out and seal masonry cracks to be repaired.
    5. Clean existing masonry surfaces.

6. Apply water repellent sealer.

1.09 WARRANTY:

A. Provide longest available manufacturer's guarantee on application of water repellent sealer, as published in the manufacturer's product literature.
B. Provide contractor's warranty for a period of one year for labor and material to reinstall any work not performing as intended.

PART TWO - PRODUCTS

2.01 MORTAR MATERIALS:

A. Portland Cement:
   1. ASTM C 150, Type I.
   2. Provide nonstaining Portland cement complying with staining requirement of ASTM C 91 for not more than 0.03 percent water soluble alkali for stonework and other masonry.
B. Hydrated Lime: ASTM C 207, Type S.
C. Aggregate For Mortar: ASTM C 144.
D. Water: Clean, free of oil, acids, alkalis, and organic matter.

2.02 MASONRY UNITS:

A. Units to match existing in shape, size, color, texture, and material; ASTM C216, Grade SW.
B. Colored Mortar Aggregate:
   1. Natural or manufactured, hand selected to produce mortar color.
   2. Provide sand with rounded edges for pointing mortar.
   3. Match size, texture, and gradation of existing mortar as closely as possible.
C. Colored Mortar Pigment:
   1. Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes.
   2. Use only pigments with record of satisfactory performance in masonry mortars.

2.03 CLEANING MATERIALS AND EQUIPMENT:

A. Water for Cleaning: Clean, potable, free of oils, acids, alkalis, salts, and organic matter.
B. Brushes: Fiber bristle only.
C. Cleaning Products:
   1. “Enviro Klean 2010”, PROSOCO, a Division of Service Master Industries, Inc.
   2. Or approved equal.

2.04 WATER REPELLENT SEALER:

A. Acceptable Manufacturers for Water Repellent Sealer: Subject to compliance

with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to:
1. BASF.
2. Others require written approval from Consultant.

B. Water Repellent Sealer: Clear penetrating or 100% silane suitable for use on masonry surfaces:
1. "Masterprotect H 1000" by BASF.
2. Or approved equal.

C. Strippable Masking: Temporary coating designed for application to glass, unpainted metal, and polished stone to protect from cleaning materials and mortar such as “Sure Klean Strippable Masking”, by ProSoCo.

2.05 MORTAR MIXES:

A. Measurement and Mixing:
1. Measure cementitious and aggregate materials in dry condition by volume or equivalent weight.
2. Do not measure by shovel; use known measure.
3. Mix materials in clean mechanical batch mixer.

B. Mixing Repair Mortar:
1. Thoroughly mix cementitious and aggregate materials together before adding water.
2. Mix again adding only enough water to produce damp, unworkable mix which will retain its form when pressed into ball.
3. Maintain mortar in this dampened condition for one to two hours.
4. Add remaining water in small portions until mortar of desired consistency is reached.
5. Use mortar within thirty minutes of final mixing.
6. Do not retemper or use partially hardened material.

C. Admixtures: Do not use admixtures in mortar.

D. Mortar Proportions, Repair Mortar for Brick: One part Portland cement, one part lime, and four and one-half to six parts mortar aggregate.

E. Colored Mortar:
1. Produce mortar of color required with selected ingredients.
2. Do not adjust proportions without Consultant’s acceptance.

F. Color Pigmented Mortar: Do not exceed pigment-to-cement ratio of 1-to-10 by weight.

G. Admixtures: Do not use admixtures in mortar.

PART THREE - EXECUTION

3.01 PREPARATION:

A. Comply with recommendations of manufacturers for protecting building surfaces and for installation procedures.

B. Protect glass, unpainted metal trim, and stone from contact with acidic chemical cleaners or mortar by covering them with liquid strippable masking

agent or polyethylene film and waterproof masking tape. Apply masking agent in accordance with manufacturer's recommendations. Do not apply liquid masking agent to painted or porous surfaces.

C. Protect unpainted metal from contact with alkali chemical cleaners by covering metal with either liquid strippable masking agent or polyethylene film and waterproof masking tape.

3.02 CLEANING EXISTING MASONRY:

A. Clean masonry in preparation for application of water repellent sealer.

B. Determine method of cleaning based upon adjoining materials, site conditions, and manufacturer's requirements.

C. Use water blasting or hand method to clean substrate and open pores.

D. Verify surfaces to be restored are clean, free of efflorescence, stains, mildew, grime, dirt, tar, oil, grease, or other foreign matter and discoloration detrimental to application.

3.03 CLEANING EXISTING MASONRY:

A. Cleaning:

1. Proceed with cleaning in an orderly manner; work from top to bottom and from one end of each elevation to the other.
2. Determine method of cleaning based upon adjoining materials, site conditions, and manufacturer’s requirements.
3. Use water blasting, sandblasting, or hand method which will clean substrate and open pores.
4. Metal surfaces may be cleaned by Commercial Blast Cleaning (SSPC-SP6), by hand or power tool cleaning (SP2-SP3), or as required to accept primer. Determine method of cleaning based upon adjoining materials, site conditions, and manufacturer’s requirements.
5. Verify surfaces to receive waterproof coatings are clean, free of efflorescence, stains, mildew, grime, dirt, tar, oil, grease, or other foreign matter and/or discoloration detrimental to application.
6. Perform each cleaning method indicated in a manner which results in uniform coverage of all surfaces, including corners, moldings, interstices and which produces an even effect without streaking or damage to masonry surfaces.
7. Rinse off chemical residue and soil by working upwards from bottom to top of each treated area.

B. Water Cleaning Methods:

1. Spray Applications: Spray-apply water to masonry surfaces to comply with requirements indicated for location, purpose, water temperature, pressure, volume, and equipment. Unless otherwise indicated, hold spray nozzle not less than 6-inches (150mm) from surface of masonry and apply water from side to side in overlapping bands to produce uniform coverage and an even effect.
2. Low Pressure Spray: 100 to 400 psi; three to six gallons per minute.

3. Medium Pressure Spray: 400 to 800 psi; three to six gallons per minute.
4. High Pressure Spray: 800 to 1200 psi; three to six gallons per minute.
5. Steam Wash: Apply steam to masonry surfaces at pressures not exceeding 80 psi. Hold nozzle no less than 6-inches (150mm) from surface of masonry and apply steam from side to side or in direction of tooling in overlapping bands to produce uniform coverage and an even effect.

C. Chemical Cleaner Application Methods:
1. Apply chemical cleaners to masonry surfaces to comply with chemical manufacturer's recommendations using brush or spray application methods, at Contractor's option, unless otherwise indicated. Do not allow chemicals to remain on surface for periods longer than that indicated or recommended by manufacturer.
2. Spray Application; Apply to pressures not exceeding 50 psi, unless otherwise indicated.
3. Reapplication of Chemical Cleaners: Do not apply chemical cleaners to same masonry surfaces more than twice. If additional cleaning is required, use steam wash.

3.04 CRACK AND CORNER JOINT REPAIR:

A. Inspect existing mortar joints for cracked, defective, open, and/or deteriorated mortar.
B. Rake out cracked, loose, or deteriorated mortar from joints to depths equal to 2-1/2 times their widths, but not less than 1-inch (25mm), nor less than that required to expose sound, unweathered mortar.
C. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with new sealant. Brush, vacuum, or flush joints to remove dirt and loose debris.
D. Do not spall edges of masonry units or widen joints.
E. Replace masonry units which are loose, damaged, or spalled.
F. Cut out old mortar by hand with chisel and mallet.
G. Power operated rotary hand saws and grinders will be permitted but only on specific written acceptance of Consultant based on submission by Contractor of satisfactory quality control program and demonstrated ability of operators to use tools without damage to masonry. Quality control program shall include provisions for supervising performance and preventing damage due to worker failure.
H. Fill prepared corner and step cracked joints with joint backing and sealant in accordance with Section 07920 - Sealants and Caulking. "Dust" wet sealant with matching color sand or crushed masonry fines to match adjacent surfaces.
I. Fill remaining prepared joints with repair mortar. Remove excess water from joint surfaces so that surfaces are surface dry at time of mortar application.

3.05 BRICK REMOVAL AND REBUILDING:

A. Masonry Removal:

1. Carefully remove by hand, masonry which are damaged, spalled, or deteriorated. Cut out full units from joint to joint in manner to permit replacement with full size units.
2. Support and protect masonry to remain that surrounds removal area.
3. Salvage as many whole, undamaged masonry units as possible.
4. Remove mortar, loose particles, and soil from salvaged masonry units by cleaning with brushes and water. Store salvaged masonry units for reuse.
5. Clean remaining masonry units at edges of removal areas by removing mortar, dust, and loose debris in preparation for rebuilding.

B. Masonry Rebuilding:

1. Install new or salvaged masonry units to replace removed masonry units. Fit replacement units into existing bonding and coursing pattern. If cutting is required, use motor driven saw designed to cut masonry with clean, sharp unchipped edges.
2. Lay replacement masonry units with filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet clay brick which have ASTM C 67 initial rates of absorption (suction) of more than 30 grams per 30 square inches per minute. Use wetting methods that ensure units are nearly saturated but surface dry when laid. Maintain joint width for replacement units to match existing.
3. Tool exposed mortar joints in repaired areas to match joints of surrounding existing masonry.
4. Repoint new mortar joints in repaired area to comply with requirements for repointing existing masonry, except rake out joints before mortar sets.

3.06 REPOINTING EXISTING MASONRY:

A. Joint Raking:

1. Rake out mortar from joints to depths equal to 2-1/2 times their widths but not less than 1-inch (25mm) nor less than that required to expose sound, unweathered mortar. Blow clean and install urethane sealant within 1/2-inch (13mm) of face.
2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of masonry units or widen joints. Replace masonry units that become damaged.
4. Cut out old mortar by hand with chisel and mallet.
5. Power operated rotary hand saws and grinders will be permitted but only on specific written acceptance of Consultant based on submission

by Contractor of satisfactory quality control program and demonstrated ability of operators to use tools without damage to masonry. Quality control program shall include provisions for supervising performance and preventing damage due to worker failure.

B. Joint Pointing:
   1. Rinse masonry joint surfaces with water to remove dust and mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off and joint surfaces are dry and able to receive sealant application.
   2. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8-inch (9mm) until uniform depth is formed. Compact each layer thoroughly and allow to become thumbprint-hard before applying next layer.
   3. After joints have been filled to uniform depth, place remaining pointing mortar in three layers with each of first and second layers filling approximately 2/5 of joint depth and third layer the remaining 1/5. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have rounded edges, recess final layer slightly from face. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
   4. When mortar is thumbprint hard, tool joints to match original appearance of joints. Remove excess mortar from edge of joint by brushing.
   5. Cure mortar by maintaining in damp condition for not less than seventy-two hours.
   6. Where repointing work precedes cleaning of existing masonry, allow mortar to harden not less than thirty days before beginning cleaning work.
   7. Where mortar joints have step cracked due to lack of control joints and where sealant is applied over these cracks, cut mortar joint to depth of 1-inch (25mm) deep and fill with two component urethane sealant to depth of 1/2-inch (13mm). Allow to cure and finish off tuckpointing with mortar at depth of 1/2-inch (13mm).

3.07 FINAL CLEANING:

A. Thoroughly clean exposed masonry surfaces of excess mortar, sealant, and foreign matter using stiff nylon or bristle brushes and clean water, spray applied at low pressure.
B. Use of metal scrapers or brushes will not be permitted.
C. Use of acid or alkali cleaning agents will not be permitted.

3.08 APPLICATION OF WATER REPELLENT SEALER:

A. After cleaning, sealant work, and masonry repairs are complete, verify

surfaces are clean and dry.

B. Follow manufacturer's written mixing instructions. Thoroughly mix and stir material prior to application.

C. Test Applications: Test prior to beginning application of clear sealer to assure compatibility and desired results. Test area should be a minimum 2 feet by 2 feet area. Test using same equipment and procedures proposed for general application. Allow test application to dry for a minimum of three days before inspection.

D. Precautions: Protect all surrounding non-masonry surfaces from exposure to the sealer. Sealer may be corrosive to many metallic surfaces and may cause stains or damage to painted surfaces, glass, and other non-masonry materials. Protect all ground foilage, pedestrians, and auto traffic from exposure to the water repellent. Cover exterior air conditioning units and air vents during application.

E. Hot Weather Application:
   1. Surface and air temperatures should not exceed 95 degrees Fahrenheit for proper application. Higher temperatures will cause rapid evaporation of water carrier resulting in reduced penetration and formation of surface film or crust.
   2. When surface temperatures exceed 95 degrees Fahrenheit, clear sealer may be successfully applied by cooling the surface with a water mist before applying the repellent. Mist the surface lightly with clear water - do not saturate. Allow surface to dry until surface is once again absorbent (appears dry) and immediately apply sealer.

F. Application:
   1. Equipment: Apply sealer using brush, roller, or low pressure spray applicator (20 psi). When spray applying, use fan type spray tips and adjust pressure to avoid atomization of the material. Fit sprayer with stainless steel or brass fittings and gaskets suitable for handling alkaline solutions (rubber or viton). Brushes and rollers should be of nylon or other synthetic materials resistant to alkaline solutions.
   2. Application:
      a. General: Apply from the "bottom up" with a 4-inch (100mm) to 8-inch (200mm) rundown to assist in a uniform distribution.
      b. Spray Application: Apply sufficient material to provide uniform, saturating coverage. Apply only to the point of saturation, taking care not to over apply the material. Immediately brush out heavy runs or drips to avoid a buildup of material on the surface.
      c. Brush or Roller Application: Apply sufficient material to thoroughly saturate the surface. Avoid excessive overlapping and take care to brush out runs and drips immediately to prevent a buildup of material on the surface.
   3. Coverage: Coverage rates will vary from 80 to 150 square feet per gallon, depending upon surface texture and porosity. Actual coverage should be determined during test applications and based on manufacturer's recommendation for warranty coverage.

3.09 ADJUSTING AND CLEANING:

A. Correct damage to other work by cleaning, repairing or replacing as directed by Owner. Leave work in an undamaged condition.

B. Clean spattered surfaces. Remove overspray materials by proper methods of washing and scraping, using care not to damage finished surfaces.

C. Remove discarded materials, rubbish, cans, and rags resulting from work from project site.

END OF SECTION

SECTION 07220 - ROOF AND DECK INSULATION

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Insulation adhesion of base layer insulation, tapered insulation and cover board.

1.02 RELATED SECTIONS:

A. 02072 – Minor Demolition and Renovation Work
B. 07533 – Thermoplastic Membrane

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Standards:
   1. Factory Mutual Approval Guide.
   2. Underwriters Laboratories: Building Materials Directory.
   3. National Roofing Contractors Association (NRCA): The NRCA Roofing and Waterproofing Manual, Fifth Edition, 1997.

1.04 QUALITY ASSURANCE:

A. Regulatory Requirements:
   1. Classified by Underwriters Laboratories Inc. as Class A rated material.
   2. Follow local, state, and federal regulations, safety standards, and codes. When conflict exists, the more restrictive document shall govern.
B. Installation:
   1. Install in accordance with manufacturer's current published application procedures and general requirements of NRCA.
   2. Consider roof system manufacturer's technical specifications part of this Specification and use as reference for specific application procedures.

1.05 DELIVERY, STORAGE, AND HANDLING:

A. Store materials in accordance with manufacturer's recommendations.
B. Outdoor Storage:
   1. Tarp and shield insulation from moisture and ultraviolet rays.
   2. Elevate insulation above substrate 4-inches minimum.
   3. Secure insulation to resist high winds.
   4. Do not use insulation which has been determined "wet" or which has been wet and has dried.
   5. Distribute insulation stored on roof deck to prevent concentrated loads that would impose excessive stress or strain on deck or structural members.
   6. Remove manufacturer plastic shrink wrapping from materials.

1.06 SEQUENCING AND SCHEDULING:

A. Plan roof layout with respect to roof deck slope to prevent rainwater drainage into completed roofing.

B. Do not install more insulation than can be made watertight in same day.

1.07 PROJECT CONDITIONS:

A. Environmental Recommendations:

1. Apply roofing and insulation in dry weather.
2. Do not proceed with roof construction during inclement weather or when precipitation is predicted with 30 percent or more possibility.
3. Do not apply insulation over wet or moist deck or in foggy conditions.
4. Consider days when wind speeds are 30 mph (48 kph) or greater as "bad weather" days.

B. Maintain on site equipment and material necessary to apply emergency temporary seals in event of sudden precipitation. Costs for emergency roofing shall be paid by Contractor.

PART TWO - PRODUCTS

2.01 ROOF INSULATION:

A. Base Layer Insulation:

1. Polyisocyanurate Insulation Board: Rigid, closed cell polyisocyanurate foam core bonded to glass fiber facers.
   a. Minimum thickness: 3.5-inches.
   b. Aged R-value, ASTM C 518: 6.0 minimum.
   c. Maximum Board Size: 4 feet by 4 feet.
   d. Acceptable Products:
      1) "ACFoam-II", Atlas Energy Products.
      2) "Pyrox", Apache Products Co.
      3) "GAFTemp Isotherm R", GAF.
      4) "E'NRG'Y 2", Johns Manville.
      5) "Iso 95+", Firestone.
      6) Or approved equal.

B. Tapered Insulation for Field of Roof:

1. Rigid, closed cell polyisocyanurate foam core bonded to glass fiber facers.
   a. Thickness: 3.5-inch, 2 percent, thickness at low point tapered at 1/4-inch per linear foot (6 mm).
   b. Aged R-value, ASTM C 518: 6.0 minimum.
   c. Acceptable Products:
      1) "Tapered ISO95+" by Firestone.
      2) "GAFTemp Tapered" by GAF.
      3) Or approved equal.]]

C. Cover Board: 1/4-inch non-structural glass mat faced, silicone-treated gypsum core panel such as "Dens-Deck" by Georgia Pacific.

2.02 RELATED MATERIALS:

A. Insulation Adhesive: fast-acting, two-component, low-rise polyurethane foam adhesive designed to adhere most insulation types to a wide selection of common roof decks and materials. such as “OlyBond Insulation Adhesive" by Olympic Fastener or “approved equal.”

PART THREE - EXECUTION

3.01 EXAMINATION:

A. Roof system manufacturer's representative shall inspect roof deck and associated substrates and provide written acceptance of conditions.

B. Manufacturer's approved roofing contractor shall inspect and approve deck and substrates.

C. Roofing contractor shall examine roof deck and related substrates and verify that there are no conditions that would prevent roof system manufacturer's approved application of roof system. These conditions include, but are not limited to, the following:

1. Inadequate anchorage of decking or substrates to structure.
2. Accumulations of moisture.
3. Tears, holes, cracks, or punctures.
4. Ridges, uneven conditions, or gaps.
5. Rust or other forms of deterioration.
6. Presence of foreign materials.

D. Start of work constitutes acceptance of substrate and site conditions.

3.02 PROTECTION:

A. Provide special protection from traffic on yet to be removed roofing and newly installed temporary roof.

3.03 PREPARATION:

A. Do not install insulation until defects in roof deck and substrates are corrected in order to meet roof system manufacturer's requirements and to ensure that deck conditions will not restrict roof drainage.

B. Broom sweep and clean areas to receive new insulation.

3.04 APPLICATION:

A. Adhered Insulation and Cover Board(Spray-applied Foam Adhesive):

1. Dispense 3/4-inch to 1-inch diameter continuous ribbon of adhesive onto the prepared substrate.
2. Place the ribbon 6-inches inside each edge of the insulation board. Apply two intermediate ribbons spaced 12-inches in the field of the roof, 6-inches at the roof’s perimeter and 4-inches at the corners. Ribbons shall be centered.
3. Firmly set insulation boards in ribbons of sprayed-on polyurethane

foam adhesive.

4. Insulation boards shall be set in accordance with manufacturer's set time based on ambient temperatures and in accordance with manufacturer's written instructions. Walk-in to spread the adhesive ribbon, ensuring maximum contact. Weight boards until insulation is firmly attached.
5. Successive board shall be set in place with the end joints staggered a minimum of 1/3 of the overall length. Long joints shall be continuous.
6. Butt joints tightly, allowing no more than 1/4-inch wide gaps between boards.
7. Install 36"-in by 36"-in roof drain sumps with mitered insulation.
8. Do not use damaged, warped or bent insulation boards.
9. Field cut and fit boards at penetrations.

B. Insulation Filler: Install compressible fiberglass insulation at openings in deck at penetrations, perimeters, and/or curbs.

3.05 CLEANING:

A. Remove debris and material wrappers from roof to dumpster daily. Leave insulation clean, dry, and ready to receive new roofing.

3.06 ADJUSTING:

A. Remove damaged insulation and install acceptable new units before installation of roof system.

3.07 PROTECTION:

A. Provide special protection from traffic on completed work.

END OF SECTION

SECTION 07300 - SHINGLE ROOFING

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Installing new laminated asphalt mineral-surfaced shingles and felt underlayment.

B. Installing new louvered edge metal, sheet metal drip edge, valley flashings, penetration flashings and continuous ridge vents.

1.02 RELATED SECTIONS:

A. 02072 - Minor Demolition and Renovation Work.

B. 07620 - Sheet Metal Flashing and Trim.

1.03 DELIVERY, STORAGE, AND HANDLING:

A. Deliver roofing materials to jobsite in manufacturer's unopened, labeled containers and comply with manufacturer's instructions for storage and handling. Containers shall bear UL label or FM approval marking.

1.04 MAINTENANCE:

A. Extra Stock: Provide 2 percent of installed quantity in unopened, clearly labeled bundles or containers.

1.05 WARRANTY:

A. Manufacturer's Warranty: Manufacturer's thirty year standard warranty shall cover product quality and performance.

B. Contractor's Warranty: Provide Contractor's warranty covering defects in installed materials and workmanship for period of two years from date of final acceptance by Owner.

PART TWO - PRODUCTS

2.01 MATERIALS:

A. Three-dimensional Laminated Strip Shingles: Mineral surfaced, self-sealing, laminated multi-ply overlay construction glass fiber based strip shingle complying with ASTM D 3018 Type I and ASTM D 3462, bearing UL Class A external fire exposure label and UL Wind Resistant label. Color selected by Owner from manufacturer standard colors such as "Dimension III" by Celotex Corporation, "Prestique I" by Elk Corporation, and "Timberline" by GAF Building Material Corporation.

B. Mineral surfaced self-sealing, fiberglass reinforced three-tab shingle, ASTM D 3462 such as "Sentinel" by GAF, "Tough-Glass" by Georgia Pacific, "Standard Strip/20" by Celotex.

C. Roofing Underlayment: High temperature self-adhering SBS rubberized membrane with cross-lamentated polyeolefin film, such as “Blueskin

PE200HT" as manufactured by Henry.

D. Asphaltic Plastic Roof Cement: ASTM D 4586, asphaltic, asbestos free.

E. Nails: Aluminum or hot-dipped galvanized 11 or 12 gauge sharp pointed conventional roofing nails with barbed shanks, 3/8-inch (9mm) minimum diameter head, of sufficient length to penetrate 3/4-inch (19mm) minimum into solid decking or through plywood sheathing.

PART THREE - EXECUTION

3.01 PREPARATION:

A. Verify that surfaces and site are ready to receive work.

B. Replace deteriorated wood deck areas in accordance with Section 02072 - Minor Demolition and Renovation Work.

C. Cover knotholes or minor voids in substrate with sheet metal secured with roofing nails.

D. Verify that substrate is dry and adequately supported and secured.

3.02 UNDERLAYMENT INSTALLATION:

A. Secure underlayment with sufficient nails to hold in place until shingle application.

B. Install 36-inch (900mm) wide strips of underlayment set in asphaltic plastic cement in valleys.

C. Begin installing underlayment parallel to eaves, lapping each course at least 2-inches at edges and 4-inches at ends.

D. Stagger end laps a minimum of 6-feet (2m).

E. Continue underlayment up vertical surfaces a minimum of 4-inches.

F. Install rake drip edge over underlayment; fasten 8-inches (200mm) on-center.

3.03 SHINGLE APPLICATION:

A. Remove tabs from shingles for starter strip and position starter strip with the factory-applied adhesive face up along the eaves. Overhang starter strip approximately 1/4-inch over eave. Set starter strip in bead of caulk.

B. Fasten starter strips 4-inches above the eave. Trim 3-inches from the end of the first shingle in the starter strip. Position fasteners so that they will not be exposed under the cutouts of the first course.

C. Apply a spot of plastic roof cement on the starter strip beneath each tab.

D. Install remaining shingles. Start the first course with a full shingle and apply succeeding courses to the joint halves.

E. Exposure of the shingle shall be a nominal 5-inches . Place nails 5/8-inch above tab. Do not nail into or above factory-applied adhesives. Place a minimum of six nails in each shingle.

F. Set shingles in asphaltic plastic cement at pipe penetrations.

END OF SECTION

SECTION 07410 - MANUFACTURED ROOFING AND SIDING

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Provide labor, materials, tools, and equipment for installation of metal support structure, metal roofing panels, associated trim, and counterflashing.
B. Related components, transitions, and accessories.

1.02 RELATED SECTIONS:

A. 02072 - Minor Demolition and Renovation Work.
B. 07620 - Sheet Metal Flashing and Trim.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Federal Specifications (FS).
C. Sheet Metal and Air Conditioning: Contractor's National Association, Inc. (SMACNA) Architectural Sheet Metal Manual, Fourth Edition, 1987.
D. National Coil Coaters Association:
E. National Roofing Contractor's Association: NRCA Roofing and Waterproofing Manual, Fifth Edition, 1997.

1.04 SUBMITTALS:

A. Shop Drawings:
   1. Submit complete shop drawings and erection details to Architect for review. Shop drawings shall be sealed by Professional Engineer registered in the State of Texas. Do not proceed with manufacture prior to review of shop drawings.
   2. Shop drawings show methods of erection, elevations, and plans of roof panels, sections and details, anticipated loads, flashings, roof curbs, vents, sealants, interfaces with all materials not supplied, and proposed identification of component parts and their finishes.
B. Samples: Submit samples and color chips for all proposed finishes.
   1. Submit one 12-inch (300mm) long sample of panel, including chips.
   2. Submit two 3-inch (75mm) by 5-inch (125mm) color chip samples in color selected by Architect.
C. Applicator's License Certificate: Copy of the material manufacturer's agreement/contract indicating date application was approved and expiration date for the systems specified.
D. List of all mechanical, electrical, rigging, sheet metal, and all other subcontractors with evidence of subcontractor's insurance coverage in compliance with contract requirements.
E. Proposed personnel resumes and project experience list for specified systems.

F. Detailed project schedule showing work phasing and proposed daily progress

schedule, if required.

G. Permits, notices, and approvals of governing bodies or agencies.

1.05 QUALITY ASSURANCE:

A. Applicator:
   1. Approved by manufacturer of accepted roof system.
   2. A single applicator with a minimum of five years previous successful experience in installations of similar systems.

B. Regulatory Requirements:
   1. System shall be classified by Underwriter's Laboratories, Inc. as a Class A roof covering.
   2. Follow local, state, and federal requirements, safety standards, and codes.
   3. Refer to applicable building codes for roofing system load design requirements. When a conflict exists, the more restrictive document will govern.

C. Installation:
   1. Install in accordance with manufacturer's current published application procedures and the general recommendations of the American Metal Roofing Association. Follow Underwriter's Laboratories requirements acceptable for use with specified products or systems.
   2. All roofing shall be as described in this Section and shall be provided and/or approved by the roof system manufacturer. Any materials not manufactured or provided by manufacturer shall have written approval from the manufacturer stating that the materials are acceptable and are compatible with the other materials and systems required.

D. Perform entire work of this Section in accordance with the best standards of practice relating to trades involved.

E. Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field measurements of structural or substrate to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.

1.06 PROJECT CONDITIONS:

A. Protection:
   1. Provide protection or limit traffic on the existing roof.
   2. Facility is occupied; therefore, protect interior from sudden storms or inclement weather.

1.07 WARRANTY:

A. Upon final acceptance for project, metal panel manufacturer to furnish a warranty covering bare metal against rupture, structural failure, and perforation due to normal atmospheric corrosion exposure for a period of twenty years.

B. Provide warranty covering panel finish against cracking, checking, blistering,

peeling, flaking, chipping, chalking, and fading for a period of twenty years.

PART TWO - PRODUCTS

2.01 MANUFACTURERS:

A. Butler Manufacturing Co.
B. MBCI.
C. Or approved equal.

2.02 PRIMARY MATERIALS:

A. Roof Panels:
   1. Panel Profile: Nominal 5/8-inch high rib by 36-inch width.
   2. Panel Style: 36" wide by 24 Ga. low profile panels with 0.75-inch high ribs spaced 6-inches on center such as "PBU Panels" manufactured by MBCI
   3. Texture: Smooth.
   4. Finish: Premium fluorocarbon coating produced with Kynar 500 resin, twenty-year warranty.
   5. Color: Selected from manufacturer's standard line.

B. Miscellaneous Materials:
   1. Panel side lap sealant shall be "hot melt" sealant. Panel end laps shall be a minimum of 6-inches (150mm), sealed with sealants and fastened together by clamping plates, permitting a free floating splice not connected to roof secondary structures.
   2. Fasteners: Panel connections shall be made of stainless steel with exterior heads gasketed.

C. Accessories:
   1. Material used in flashing and transition parts and furnished as standard by manufacturer may or may not match the roof panel material. Parts shall by compatible and shall not cause a corrosive condition. Do not use copper and/or lead materials with zinc or aluminum coated panels.
   2. Perpendicular Flashings:
      a. Fabricate flashing from material matching existing.
      b. Details and installation shall be in accordance with the manufacturer's drawings.

D. Required Performances: Fabricate panels and other components of wall system for the following installed-as-indicated performances:
   a. Water Penetration: No significant, uncontrolled leakage at 4 pounds per square foot (192N/m^2) pressure with spray test.
   b. Air Infiltration: 0.02 cfm per square foot for gross roof areas, with 4 pounds per square foot (192N/m^2) differential pressure.

2.03 FABRICATION:

A. Roll form panels in continuous lengths, full length of detailed runs.
B. Fabricate trim, flashing, and accessories to detailed profiles.
C. Fabricate trim and flashing from same material as panel.

PART THREE - EXECUTION

3.01 GENERAL:

A. Perform entire work of this Section in accordance with the best standards of practice relating to trades involved.
B. Follow local, state, and federal regulations, safety standards, and codes. When a conflict exists, the more restrictive document shall govern.
C. Comply with roof panel fabricator's and material manufacturer's instructions and recommendations for installation as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal/structural movement.
D. Installed system to be wind rated..

3.02 INSTALLATION:

A. Exposed Fastener Metal Wall Panels: Install weathertight metal panel system in accordance with manufacturer's written instructions, approved shop drawings, and project drawings. Install metal panels in orientation, sizes, and locations indicated, free of waves, warps, buckles, fastening stresses, and distortions. Anchor panels and other components securely in place. Provide for thermal and structural movement.

B. Panel Sealants: Install manufacturer's recommended tape sealant at panel sidelaps and endlaps.

C. Panel Fastening: Attach panels to supports using screws, fasteners, and sealants recommended by manufacturer and indicated on approved shop drawings.

1. Fasten metal panels to supports at each location indicated on approved shop drawings, with spacing and fasteners recommended by manufacturer.

3.03 INSTALLATION TOLERANCE:

A. Shim and align units within installed tolerance of 1/4-inch (6mm) in 20 feet on level/plumb/slope and location/line, and within 1/8-inch (3mm) offset of adjoining faces and of alignment of matching profiles.

3.04 JOINT SEALERS:

A. Install gaskets, joint fillers, and sealants where required for weatherproof performance of panel systems. Provide types of gaskets and sealants/fillers recommended by panel manufacturers.

3.05 CLEANING AND PROTECTION:

A. Remove temporary protective coverings and strippable films (if any) as each panel is installed. Upon completion of panel installation, clean finish surfaces as recommended by panel manufacturer. Maintain in a clean condition throughout construction.

B. Touch up minor scratches and abrasions.

C. Replace all damaged panels and other components of the work which have been damaged or have deteriorated beyond successful repair by means of finish, touch up, or similar minor repair procedures.

END OF SECTION

SECTION 07533 - THERMOPLASTIC MEMBRANE

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. New elastomeric sheet roofing system on flat roof areas.
B. Related membrane flashings and other accessories.

1.02 RELATED SECTIONS:

A. 02072 - Minor Demolition and Renovation Work.
B. 07220 – Roof and Deck Insulation
C. 07620 - Sheet Metal Flashing.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).

1.04 QUALITY ASSURANCE:

A. Applicator:
   1. Approved by manufacturer of accepted roofing system.
   2. A single applicator with a minimum of ten years previous successful experience in installations of similar systems.
   3. Be present at job site at all times when work is being performed. Supervise workers as required to ascertain workmanship, progress, and adherence to details.
   4. Report to Owner's Representative daily.
   5. Be responsible for schedule and coordination.
   6. Have authority to make binding commitments upon Contractor in the field.
B. Regulatory Requirements: Classified by Underwriters' Laboratories, Inc. as a UL 790 Class A roof covering.
C. Notify Owner's Representative a minimum of forty-eight hours in advance of start of field work. In event that Owner provides a full-time Owner's Representative, do not perform work until Owner's Representative is present except as authorized in writing by Owner.
D. Schedule manufacturer's technical representative to be on site during first two days of membrane installation and two times per month during project duration. Manufacturers shall provide written report within five days of each inspection outlining any deficiencies in the completed installation and recommendations for corrective procedures.
E. Attach ALL roofing system materials (including roof insulation, roofing membrane, flashing, and other materials) as required to resist all wind uplift, wind lateral loading, and other wind force conditions which can be reasonably expected within the next twenty years. At a minimum, comply with the more stringent of the following standards and requirements:
   1. All applicable codes, ordinances, and regulations.
   2. System to be secured to meet ASCE-7 Wind Uplift Resistance

Classification.

3. The best standards of good practice.

F. Submit proposed fastening details and product data for all conditions. Submit a Certificate stating that all roofing system construction complies with all applicable standards and requirements as required herein.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.

B. Store materials in accordance with manufacturer's recommendations. Store rolled goods on clean raised platforms. Store other materials in dry area, protected from water and direct sunlight, and maintain at a temperature of 50 to 90 degrees Fahrenheit (10 to 32 degrees Celsius).

C. Deliver materials in sufficient quantities to allow continuity of work without delay.

D. Store materials in weather protected environment, clear of ground, and free from moisture. Protect materials against damage. Keep all materials used in construction of the roofing free from moisture prior to and during application. Do not store in plastic bags which may create condensation within bags.

E. Store roof insulation and separation membrane flat on pallets or dunnage at least 4-inches (100mm) above the ground, roof, or deck and protect as necessary to keep dry.

F. Handle all materials so as to prevent damage to roofing system components and completed roof system.

G. Proper storage of materials is the sole responsibility of Contractor. Protect all materials susceptible to moisture including, but not limited to, all roll goods, insulation, cant strip, wood, and plywood in dry, above ground, watertight storage. Keep labels intact and legible, clearly showing the product, manufacturer, and other pertinent information.

H. Any materials becoming wet or damaged will be rejected and shall be removed from job site immediately. Any insulation found to be improperly stored at jobsite shall be considered wet at the discretion of Owner's Representative and removed from jobsite.

I. Maintain products liable to degrade as a result of being frozen above 40 degrees Fahrenheit (4 degrees Celsius) in heated storage.

1.07 PROJECT CONDITIONS:

A. Existing Conditions: Examine existing building and existing roofing to determine existing physical conditions that affect removal of existing roofing and installation of new roofing.

B. Environmental Requirements:

1. Apply roofing in dry weather.
2. Do not remove existing roofing and flashing in inclement weather or when rain is predicted (30 percent or more possibility).
3. When ambient temperature is below 60 degrees Fahrenheit (16 degrees Celsius), expose only enough sensitive cements, sealants, and

adhesives as required within a four hour period.

4. Do not expose membrane and accessories to a constant temperature in excess of 180 degrees Fahrenheit (71 degrees Celsius).

C. Protection:
   1. Provide special protection and avoid traffic on completed areas of membrane installation.
   2. Restore to original condition or replace work or materials damaged during handling of roof materials.
   3. Take precautions as required to protect adjacent work and structures.

D. Emergency Equipment: Maintain on site equipment necessary to apply emergency temporary edge seal in event of sudden storms or inclement weather.

E. Restrictions:
   1. Comply with requirements of Section 01010 - Summary of Work on use of site.
   2. Smoking is prohibited on roof areas or in existing buildings.
   3. Maintain facility and all utility services in a functional condition for Owner's utilization.

1.08 SEQUENCING/SCHEDULING:

A. Do not remove more existing roofing in one day than can be replaced in same day.

B. Install new roof membrane system immediately after completion of insulation/cover board layer installation.

C. Schedule work as required to prevent traffic and material handling over completed work.

D. Do not expose existing roof deck or new material to water or sun damage in quantities greater than can be weatherproofed during same day. See additional roof protection provisions herein.

E. Notify Owner's Representative at least two hours prior to installing temporary water cut off edge seal at end of day's work.

1.09 WARRANTY:

A. Contractor: Provide Owner a written warranty for a period of three years after Owner's final acceptance covering all repairs required to correct all defects due to faulty materials or workmanship and to otherwise maintain the roof in a watertight condition and to correct all other defects without regard to watertightness. Make repairs promptly on notification and at no expense to Owner.

B. Roof System Manufacturer: Manufacturer of the single-ply membrane roof system shall furnish a written warranty and guarantee that warrants and guarantees Owner with a watertight condition of roof system and all components thereof for a period of twenty years from date of Owner's final acceptance. Warranty and guarantee shall cover all labor and materials required to maintain a watertight condition and a roof system free of defects.

PART TWO - PRODUCTS

2.00 GENERAL:

A. Install all materials in accordance with manufacturer's current written specifications and details. Make no deviations without prior written approval from manufacturer. Should any specifications or details conflict with the Contract Documents, submit to Owner for approval, the recommended alternative which provides the best long term moisture protection and complies with manufacturer's warranty requirements.

2.01 MANUFACTURERS:

A. Acceptable Manufacturers:
   1. John Manville.
   2. Carlisle SynTec Systems.
   3. Sarnafil Roofing Products.

B. Products furnished for roofing system shall be products of a single manufacturer.

2.02 FULLY ADHERED MEMBRANE ROOFING SYSTEM:

A. Polyester reinforced elastomeric sheet compounded with polymer, minimum 60 mil thickness, white in color.

B. Acceptable Products:
   1. “JM PVC – 60 mil.
   2. "SureFlex – 60 mil" by Carlisle SynTec Systems.
   3. "Sarnafil PVC 60 mil" by Sarnafil Roofing Products.

2.03 RELATED MATERIAL:

A. Membrane Fasteners and Plates: Hex head self-drilling steel screw with minimum 2-inch diameter steel plate, length necessary to penetrate the structural element a minimum of 1-inch (25mm), such as "Purlin Fastener" as manufactured by Olympic Fasteners.

B. Flashing: Minimum 60 mil, reinforced or unreinforced flashing membrane as furnished by membrane manufacturer, white in color.

C. Bonding Adhesive: Furnished by membrane manufacturer for substrate.

D. Caulks: Membrane manufacturer's approved sealant to seal penetrations through the membrane system or miscellaneous caulking applications that come in contact with roof system components.

E. Lap/Seam Sealant: As furnished by membrane manufacturer for this system.

F. Water Cut-off Mastic: As furnished by membrane manufacturer for this system.

G. Inside Corners and Outside Corners and Molded Pipe Flashings: White molded pipe flashings as furnished by membrane manufacturer for this system.

H. Walkway Pads: PVC based, reinforced walkpads, as approved by membrane manufacturer.

I. Other miscellaneous materials shall be of the best grade available and

approved in writing by roof system manufacturer for the specific application.

PART THREE - EXECUTION

3.00 GENERAL:

A. Perform entire work of this Section in accordance with the best standards of practice relating to trades involved.

B. Follow local, state, and federal regulations, safety standards, and codes. When conflict exists, the more restrictive document shall govern.

C. Follow insurance underwriter's requirements acceptable for use with specified products or systems.

D. Consider roof system manufacturer's current technical specifications a part of this Specification and use as a reference for specific application procedures and recommendations.

E. Mechanically fasten both the reinforced membrane and insulation/separation underlayment to roof deck.

F. Refer to manufacturer's technical specifications for proper fastener selection and spacing in accordance with specific deck types and appropriate roll width for field of roof and perimeters.

3.01 EXAMINATION OF SURFACES:

A. Verify that all components of the existing roofing system have been removed and other preparatory work has been completed.

B. Examine roof areas for conditions that would prevent proper application of new roofing.

C. Verify that all demolition, renovation, and substrate replacement work has been completed and cured.

D. Verify that new wood nailers are properly installed to receive roofing system.

E. Examine substrate, roof deck, and related surfaces, and verify that there are no conditions such as inadequate anchorage, foreign materials, moisture, ridges, or other conditions which would prevent the satisfactory installation of the roofing system.

F. Correct or complete any conditions requiring correction or completion prior to installation of roofing system. Notify Owner's Representative in writing of unacceptable conditions.

G. Verify location of all interior ducts, electrical lines, piping, conduit, and/or similar obstructions. Perform all work in such a manner as to avoid contact with the above-mentioned items.

H. Verify that separation membrane has been properly installed in the areas in accordance with requirements of membrane manufacturer for conformance with ASCE-7 Wind Up-Lift requirement and warranty requirements.

I. Start of work under this Section constitutes acceptance of substrate and site conditions.

J. Verify:

1. Deck and substrates are clean, smooth, and free from depressions, waves, projections, defects, and damage.

2. Surfaces in contact with any single-ply material are free from bitumen, grease, oil, or other foreign material.
3. Surfaces in contact with roofing membrane or separator sheet are free from sharp edges, fins, or projections.
4. All materials are completely dry and free from ice and snow, including substrate, deck, insulation, and roofing membrane as applicable. Confirm dryness by moisture meter and demonstrate to Owner's Representative.
5. All roof equipment, openings, curbs, pipes, sleeves, ducts, vents, and blocking members are solidly and properly set.
6. All mechanical/electrical work to be covered has been installed, tested, and approved.
7. Work has been completed where possible for all other trades that require work or traffic on the roofing area.

3.02 PREPARATION:

A. Verify that debris has been completely removed.
B. Broom clean roof deck immediately prior to roofing application. Debris under roof membrane is unacceptable.

3.03 APPLICATION:

A. Roofing Membrane:
   1. Install roof membrane in accordance with roofing manufacturer's specification and installation instructions. Cut sheets to maximum size possible in order to minimize seams.
   2. Position membrane over substrate without stretching membrane. Allow membrane to relax for one-half hour before bonding, fastening, welding, and flashing.
   3. Begin installation of new roofing system at the lowest point of the project area and work to the highest point to prevent backwater laps. This will include completion of all flashings, terminations, and seals on a daily basis.
   4. Execute work so membrane can be temporarily sealed on a down slope surface at the end of each day with nite-seal in accordance with the detail drawings.
   5. Install fully adhered roofing system over the field of the roof with the length of the sheets parallel to the long dimension of the roof.
   6. Position the roof membrane perimeter sheet along the perimeter of the roof over the acceptable substrate. Perimeter membrane width and securement shall be in accordance with manufacturer's recommended procedures for building height and location. Sheet placement shall permit edge, overlaps, and fastening as required by manufacturer.
   7. Secure the membrane to wall with specified fasteners and plates. Fastener pattern shall not exceed 12-inches on center. Do not overdrive fasteners. Overdriving, which causes wrinkling of the membrane, is unacceptable and shall be corrected prior to

acceptance.

8. Work shall progress across the roof deck with manufacturer's recommended minimum overlap provided at the previously secured sheet edge.

B. Membrane Splicing:

1. Membrane lap splices for membrane overlaps along the length of the membrane shall be as necessary to achieve proper weld. Minimum distance between the edge of the fastening plate and edge of the membrane shall be 1/2-inches, minimum. Splices at end roll overlaps (width of the membrane) shall be 6-inches wide, minimum. Plan sheet layout so that end roll overlaps can be stripped in with a continuous membrane head lap (minimum 18-inches wide).
2. Allow top sheet to fall freely into place over bottom ply without wrinkling or stretching.
3. Surfaces to be welded must be cleaned, primed and dirt-free. Remove excessive dirt by washing with a detergent. Rinse thoroughly, allow to dry, and then wipe surface with manufacturer's solvent/cleaner.
4. Use automatic hot air welding equipment approved by roof system manufacturer for all field seams. Perform small work and repairs using hand welders. Roof system manufacturer's representative shall be on site at start of project to supervise welding operations and to inspect and approve welded seams.
5. Probe all laps each day to verify that welder set-up is effective. Allow membrane to cool. In addition, perform random lap test sample checks (including checks at start of each day) to verify peel strength. Caulk cut edges by applying manufacturer's seam caulk.

C. Flashing:

1. Install flashing at all roof penetrations, interruptions, and any roof intersection including roof edges with vertical or sloped surfaces in accordance with manufacturer's recommended procedures and the detail drawings.
2. Raise/modify all curbs, projections, and risewall conditions as required to accommodate new roofing.
3. Remove all existing flashing. Remove existing flashing at any compression type membrane termination to provide for termination directly to the substrate.
4. Apply manufacturer's bonding adhesive to both underside of flashing and surface to which it is to be bonded, at a rate of approximately one gallon per 50 square feet of surface coverage.
5. Do not apply bonding adhesive to that portion of flashing that overlaps onto itself. Use hot-air welding throughout the system where membrane overlaps itself.
6. Allow bonding adhesive to dry to finger touch until it does not string or stick to a dry finger. Roll the flashing into dry adhesive. Take care to assure that flashing does not bridge where there is any change of direction.

7. Mechanically top fasten all flashing under or through appropriate counterflashing with approved fasteners as shown in detail drawings.
8. Install flashings for vents, pipe, soil vents, and other round projections in accordance with manufacturer's recommendations and the detail drawings.
9. Install preformed flashing membrane as required to form a continuous membrane seal in each corner or change in plane.

D. Flashing - Other Penetrations:
1. General:
   a. Flash all penetrations passing through the membrane in accordance with the manufacturer's recommended procedure.
   b. Flashing seal must be made directly to the penetration passing through the membrane system.
   c. All existing flashing must be approved.
2. Pipes, Round Supports, Etc.:
   a. Flash pipes with molded pipe flashings where their installation is possible.
   b. Where molded pipe flashings cannot be installed, use field fabricated pipe seals.
   c. After pipe flashing is installed, secure with steel draw band and seal top edge with sealant.

E. Daily Seal:
1. Ensure that water does not flow beneath any completed sections of membrane system. This will include completion of all flashings, terminations, and daily seals. When possible, install starting at the highest point of the project area, working to the lowest point.
2. Temporarily seal any loose membrane edge with manufacturer's water cut-off sealant. Exercise caution to ensure that membrane is not temporarily sealed in such a manner as to promote water migration below the membrane or impede drainage.
3. Install daily night seals by extending the roof membrane beyond the insulation and sealing to existing roof surface.
4. When work is resumed, remove and dispose of membrane where asphalt or other sealants were previously applied before resuming installation.

3.04 CLEANING:

A. Exterior: Remove debris, adhesives, and sealant from surfaces.

END OF SECTION

SECTION 07540 - FLUID-APPLIED ROOFING

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Surface preparation, repair, sealing, and field coating all exposed metal roofing components including flashing and related fabrications to provide a complete watertight roof system.

B. Repair, resecure, or replace all fasteners which are unsuitable for fluid-applied roofing in accordance with fluid roofing manufacturer's instructions.

C. Install new flexible EPDM pipe vent flashings.

1.02 RELATED SECTIONS:

A. 02072 - Minor Demolition and Renovation Work.

B. 07620 - Sheet Metal Flashing and Trim.

1.03 DEFINITIONS:

A. "Coating" as used in this Section means coating system materials including primers, sealers, caulks, fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.04 QUALITY ASSURANCE:

A. Manufacturer Qualifications: Provide primary products of single manufacturer with not less than five years of successful experience in producing fluid-applied roofing materials of type required for Project applications equivalent to requirements for this Project. Provide secondary materials only as recommended by manufacturer of primary roofing materials.

B. Installer Qualifications: Manufacturer licensed or approved applicator as certified in writing by primary roofing materials manufacturer.

C. Regulatory Requirements: Provide fluid-applied roofing system materials which have been tested and listed by UL for Class A construction or which have been evaluated by Factory Mutual for Class I construction over existing metal roofing and related slopes.

1.05 DELIVERY, STORAGE, AND HANDLING:

A. Deliver roofing materials to jobsite in manufacturer's unopened, labeled containers and comply with manufacturer's instructions for storage and handling. Containers shall bear UL label or FM approval marking.

1.06 PROJECT CONDITIONS:

A. Apply coatings only when temperature of surfaces and surrounding air temperatures and humidity levels are within limits specified by fluid-applied roofing manufacturer during application and drying periods.

B. Do not apply coating in snow, rain, fog, mist, or when relative humidity exceeds 85 percent, or to damp or wet surfaces unless otherwise permitted by fluid-applied roofing manufacturer's printed instructions. Roofing may be

continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by fluid-applied roofing manufacturer during application and drying periods.

C. Allow sufficient daylight hours necessary for fluid-applied roofing system to cure if ultraviolet light is required for curing process.

1.07 WARRANTY:

A. Manufacturer's Warranty: Provide manufacturer's ten year written warranty, signed by authorized representative of manufacturer, warranting applied roofing materials and labor from leakage or other failures resulting from installation labor and normal roof exposures.

B. Contractor's Warranty: Provide Contractor's warranty covering defects in installed materials and workmanship for period of two years from date of final acceptance by Owner.

PART TWO - PRODUCTS

2.01 MANUFACTURERS:

A. Acceptable Manufacturers:
   1. Mule Hide.
   2. Weather Barrier Mid South, Inc.
   3. Or approved equal.

2.02 MATERIALS:

A. Rust Inhibitor: Water-based rust inhibitor to be applied over rusted areas after surface preparation.

B. Primer: Water-based anti-corrosive primer to be applied over prepared surfaces to achieve proper bonding surface for base coat.

C. Base Coat: Single-component acrylic elastomer in color contrast with top coat.

D. Top Coat: Single-component acrylic elastomer with fungus resistant protection, reflective in color and in color contrast with base coat.

E. Flashing Compound: Trowel grade acrylic elastomer.

F. Reinforcing Fabric: Flexible polyester mat of weight and type or composition recommended by liquid membrane manufacturer for embedment in liquid membrane material for project applications.

G. Gutter Coating: Single-component, non-acrylic elastomer coating resistant to ponded water such as "Liquid EPDM" as manufactured by Weather Barrier.

H. Pipe Flashing: EPDM with pleated cone and flexible round aluminum base to conform to panel configuration such as “Dektite Pipe Flashing” as manufactured by ITW Buildex.

I. Miscellaneous Accessories: All products shall be supplied or approved by the roofing manufacturer.

PART THREE - EXECUTION

3.01 PREPARATION:

A. Comply with manufacturer's instructions for preparation of substrate to receive fluid-applied roofing system.

B. Scrape loose coatings and sealants from roof surface.

C. Pressure wash surfaces at 2500 to 4000 PSI utilizing manufacturer's recommended roof preparation wash or approved biodegradable detergent to remove oils, and other materials that may prevent proper adhesion. Thoroughly rinse surfaces with clean water and allow to fully dry.

D. Perform an adhesion test to ensure that the coating can be adequately adhered.

E. Repair flashings and metal prior to applying fluid roofing in accordance with fluid-applied roofing manufacturer's recommendations.

F. Install new flashing sheets and accessory items as required to provide suitable substrate for fluid-applied roofing.

G. Treat panel seams over 1/16-inch in width with reinforcing fabric or pre-cured transition sheets.

H. Fill voids, including non-moving joints and rough areas of substrate, with flashing compound in manner recommended by fluid applied roofing manufacturer. Fill voids larger than 1/4-inch with materials recommended by fluid-applied roofing manufacturer's recommendations. Form coves at penetrations and corners in substrate.

I. Prime and seal substrate and apply rust inhibitor as recommended by fluid-applied roofing system manufacturer.

J. Mask off, neat and square, adjoining areas and, as needed, areas not to receive fluid-applied roofing.

K. Completely encapsulate all fasteners with flashing compound. Install new fasteners with grommeted washers where missing or stripped. Use fasteners one diameter larger than existing fasteners.

L. Submit roofing manufacturer's written approval/acceptance of the completed work between each phase of construction.

3.02 APPLICATION:

A. Comply with instructions of roofing materials manufacturer for application of fluid-applied roofing, including integral flashings, reinforcing fabric, or surfacing. Apply total thickness of roofing membrane in number of coats required by the manufacturer to obtain a ten-year materials and labor warranty.

B. Lap Joints and Flashing Detail Areas: Flash fasteners, laps, and seams, including horizontal seams and gutter seams, with reinforcing fabric and flashing compound as recommended by fluid-applied roofing manufacturer's recommendations.

1. Apply a continuous troweling of flashing compound along the folded side of the vertical standing seam and the exposed edges of panel end laps and flashings.
2. Apply an initial minimum 8-inch wide strip of coating of the flashing compound, at rate recommended by manufacturer, over all panel end

laps and flashing transitions.

3. Embed reinforcing fabric into flashing compound minimum 6-inches wide, centered over end laps.
4. Embed reinforcing fabric into compound minimum 12-inches wide at flashings or locations of potentially high movement. Fabric shall extend 6-inches onto deck surface and 6-inches up vertical surface.

C. Fluid-applied Roofing Membrane: Apply membrane coating in manner to provide uniform thickness as required by fluid-applied roofing manufacturer. **Spraying of material not allowed; must be roller applied.**

1. First Coat: Apply coating perpendicular to metal roofing ribs at 1-1/2 gallon per 100 square feet. Cure in accordance with fluid-applied roofing manufacturer's recommendations. Correct defect, flaws, or holidays before applying second coat.
2. Second Coat: Apply coating parallel to metal roofing ribs at 1-1/2 to 2 gallons per 100 square feet. Cure in accordance with fluid-applied roofing manufacturer's recommendations. Correct defects, flaws, or holidays. Cure in accordance with fluid-applied roofing manufacturer's recommendations before allowing traffic on roof.

3.03 FIELD QUALITY CONTROL:

A. Start installation of fluid-applied roofing membrane only in presence of manufacturer's technical representative. Installation of fluid-applied roofing membrane prior to presence of manufacturer's technical representative is subject to rejection. Submit written approval/acceptance of substrate conditions.

3.04 ADJUSTING:

A. Remove overspray, drips, runs, and spills and restore affected areas to pre-project condition prior to final acceptance of Project by Owner.

B. Repair or replace, as required, deteriorated or defective work found at time of final inspection. No seams should be visible on roof. Repair damages to roofing which occurred subsequent to roofing installation and prior to final inspection. Ensure that roof is in optimum condition at time of Substantial Completion and final inspection.

3.05 CLEANING:

A. Remove trash and debris from jobsite daily. Remove remaining materials furnished by Contractor or subcontractors from jobsite and dispose of after completion of roofing system.

END OF SECTION

SECTION 07620 - SHEET METAL FLASHING AND TRIM

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Shop or field-formed sheet metal work for moisture protection.
B. Types of work specified in this Section include:
   1. Roof penetration sleeves and hood and umbrella counterflashing.
   2. Metal counterflashing.
   3. Expansion joint.
   4. Scuppers.
   5. Miscellaneous sheet metal accessories.

1.02 RELATED SECTIONS:

A. 07533 – Thermoplastic Membrane

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Federal Specifications (FS).
C. National Roofing Contractor's Association (NRCA): NRCA Roofing and Waterproofing Manual, 2019.
D. Sheet Metal and Air Conditioning Contractor's National Association, Inc. (SMACNA): Architectural Sheet Metal Manual, Seventh Edition.

1.04 WARRANTY:

A. Contractor's Warranty: Provide Owner a written warranty which shall warrant sheet metal work to be free of leaks and defects in materials and workmanship for two years after date of final acceptance by Owner.
B. For pre-finished metal, provide manufacturer's twenty-year guarantee covering deterioration or failure of the fluoropolymer finish.

PART TWO - PRODUCTS

2.01 MANUFACTURERS:

A. Acceptable Sheet Metal Manufacturers:
   1. Berridge Manufacturing Company.
   2. Peterson Aluminum Corporation.
   3. Architectural Building Components.
   4. MBCI.
   5. Or approved equal.

2.02 SHEET METAL MATERIAL:

A. Pre-finished Metal:
   1. "Kynar 500" or "Hylar 5000" fluoropolymer pre-finished G90 galvanized steel, minimum 24 gauge. "Kynar 500" or "Hylar 5000" finish shall

consist of a two coat Polyvinyladine flouride, minimum 70 percent by weight in coatings, dry film thickness 1 mil, factory applied by metal manufacturer or supplier.

2. Color: As selected by Owner from manufacturer's standard color chart.

B. TPO clad metal: 20 mil UV-resistant PVC (polyvinyl chloride) with Elvaloy® KEE (ketone ethylene ester) membrane laminated to 24 gauge galvanized steel.

2.03 FASTENERS:

A. Fasteners shall be same metal as flashing and sheet metal or noncorrosive metal.

B. Exposed fasteners shall be self-sealing or gasketed for watertight installation.

C. Heads of fasteners, including but not limited to, rivets, screws, and bolts, that are exposed or visible shall have same manufactured finishes as item being secured; color to match when applicable.

D. Mechanical Fasteners:

1. Washers: Steel washers with bonded rubber sealing gasket.
2. Screws: Self-tapping sheet metal type compatible with material fastened.
3. Rivets: Stainless steel material for the head and stem, closed end, type and size as recommended by sheet metal manufacturer.

2.04 RELATED MATERIALS:

A. Metal Accessories: Sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.

B. Sealant:

1. Type A: One component polyurethane sealant such as "Dynatrol I" by Pecora Corp., color to match finish of metal.
2. Type B: Low modulus silicone sealant for sealing metal-to-metal surface (i.e. metal edge, cover plates) such as "895 Silicone Building Sealant" by Pecora Corp., color to match finish of metal.

C. Termination Bar: 1/8-inch thick, 1-inch wide extruded aluminum bar with flat profile, factory punched oval holes (1/4-inch by 3/8-inch) spaced 6-inches on-center, such as "TB 125" by The TruFast Corp.

D. Stainless Steel Clamp: Self-locking stainless steel flexible hose-type clamp such as "Pan-Steel Stainless Tie System" by Panduit Corp.

2.05 FABRICATION - GENERAL:

A. Fabricate work in accordance with SMACNA Architectural Sheet Metal Manual and other recognized industry practices and reviewed shop drawings.

B. Comply with material manufacturer's instructions and recommendations for forming material.

C. Shop fabricate work to greatest extent possible. Fabricate inside and outside corners for metal edges, counterflashing, and coping caps.

D. Fabricate for waterproof and weather resistant performance with expansion provisions for running work sufficient to permanently prevent leakage,

damage, or deterioration of work. Form work to fit substrates.

E. Make angle bends and folds for interlocking metal with full regard for expansion and contraction to avoid buckling or fullness in metal after installation.

F. Form materials with straight lines, sharp angles, smooth curves, and true levels. Avoid tool marks, buckling, and oil canning.

G. Fold back edges on concealed side of exposed edge to form hem.

H. Lap joints 1-inch minimum. Rivet and solder joints on parts that are to be permanently and rigidly assembled.

I. Seams:
   1. Fabricate non-moving seams in sheet metal with flat-lock seams.
   2. Pre-finished Galvanized Steel: Seal pre-finished metal seams with rivets and silicone sealant.
   3. Metal Other than Aluminum: Tin edges to be seamed, form seams, and solder.

J. Expansion Provisions: Where lapped or bayonet type expansion provisions in work cannot be used or would not be sufficiently waterproof or weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with mastic sealant concealed within joints.

K. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant in compliance with SMACNA standards.

2.06 FABRICATED ITEMS:

A. Counterflashings: Minimum 24 gauge prefinished galvanized steel formed in maximum 10 foot lengths. Utilize two piece configuration at masonry walls.

B. Wind Clips: Minimum 22 gauge steel, 1-inch wide, length to engage counterflashing a minimum of 1/2-inch.

C. Roof Penetration and Umbrella Counterflashing: Minimum 24 gauge stainless steel, two-piece construction, fabricated in accordance with project drawings.

D. Metal Edge:
   1. Minimum 24-gauge pre-finished galvanized steel formed in maximum 10 foot lengths, with 6-inch wide cover plates of same profile.
   2. Provide expansion slip joints at maximum 20 feet on-center.
   3. Fabricate interior and exterior corners from one continuous piece using 2 foot minimum legs. Lap, rivet, and seal prior to installation.

E. Continuous Cleats: Continuous strips, same base material, and fascia profile, and next heavier gauge available as adjacent metal item.

F. Coping: 24 gauge pre-finished galvanize steel with 6-inch wide cover plates of same profile.

G. Scupper: Minimum 24-gauge TPO clad steel with prefinished galvanized face plate.

PART THREE - EXECUTION

3.01 EXAMINATION:

A. Verify that substrates are smooth and clean to extent needed for sheet metal work.

B. Verify that reglets, nails, cants, and blocking to receive sheet metal are installed and free of concrete and soil.

C. Do not start sheet metal work until conditions are satisfactory.

3.02 INSTALLATION:

A. Install sheet metal with lines, arises, and angles sharp and true, and plane surfaces free from objectionable wave, warp, or buckle. Exposed edges of sheet metal shall be folded back to form 1/4-inch hem on concealed side from view. Finished work shall be free from water retention and leakage under all weather conditions. Prefabricated corners or transitions are required at changes in direction, elevation or plane, and at intersections. Locate field joints not less than 12-inches, nor more than 3 feet from actual corner. Laps shall be 1-inch, riveted and soldered at following locations: prefabricated corners; transitions; changes in direction, elevation, and plane; and at intersections.

B. Anchor units of work securely in place to prevent damage or distortion from wind or buckling. Provide for thermal expansion of metal units; conceal fasteners where possible; and set units true to line and level as indicated. Install work with laps, joints, and seams permanently watertight and weatherproof.

C. Install fabricated sheet metal items in accordance with manufacturer's installation instructions and recommendations and with SMACNA Architectural Sheet Metal Manual.

D. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces with zinc chromate, bituminous coating, or other permanent separation at locations of contact as recommended by manufacturer or fabricator. Do not use materials incompatible with roofing system.

E. Continuous Cleat: At exposed edges of gravel guards, fascias, cap flashings, and where required, attach continuous cleat at 6-inches on-center with appropriate fasteners positioned on the vertical face. At a distance of 10 feet from each direction of corner, install fasteners 3-inches on-center.

F. Counter flashings:

1. Install new counter flashings under new receivers along rise walls.
2. Secure counterflashing at 6-inches on-center with self-tapping screws.
3. Saw cut new joint in existing masonry where required and install new receiver. Secure new receiver in place with appropriate fasteners spaced 12-inches on-center.
4. Lap adjacent sections of receivers and counterflashings a minimum of 4-inches. Apply a continuous bead of sealant, Type B in lap.

3.03 CLEANING:

A. Remove flux and residual acid immediately by neutralizing with baking soda and washing with clean water. Leave work clean and free of stains, scrap, and debris.

B. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration/damage of finishes. Paint (color to match) areas of prefinished metal where finish is damaged. Replace sheet metal items when damaged finish can not be repaired to an acceptable condition.

C. Prime soldered area of phosphatized metal after cleaning to prevent rusting.

D. Paint with aluminized paint, metal flashings that have been soiled with bitumen. Use medium nap roller to apply paint to surfaces to achieve monolithic finished color.

END OF SECTION

Threadmill - Roof Replacement and Related Renovations

5000 Austell Powder Springs Road
Austell, Georgia

CLIENT:

City of Austell

DESIGN:

NOVA Engineering & Environmental
3900 Kennesaw 75 Parkway
Suite 100
Kennesaw, GA 30314

DRAWING INDEX:

SITE LOCATION:

5000 Austel Powder Springs Road
Austell, GA.

N

SCOPE OF WORK:

A. FACADE REPLACEMENT AND RELATED RENOVATIONS OF MAIN ENTRANCE OF THE EXISTING FACILITY KNOWN AS THREADMILL IN AUSTELL, GEORGIA GENERAL SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

B. ROOF AREAS A & B
1. REMOVE AND DISPOSE OF EXISTING ASPHALT BUILT-UP RECOVERY ROOF, INSULATION, AND PREVIOUS COAL TAR PITCH ROOF ASSEMBLY TO THE WOOD DECK.
2. REMOVE ABANDONED EQUIPMENT FROM ROOF, REPAIR OPENING IN WOOD DECK AS REQUIRED
3. REPAIR OR REPLACE DETERIORATED OR BROKEN WOOD DECKING, INCLUDE 150 SQUARE FEET IN BASE BID.
4. REMOVE SPRAYED POLYURETHANE FOAM AND CLEAN SURFACES TO RECEIVE NEW ROOF SYSTEM. DO NOT DISTURB SEALED CAST STONE COPING
5. INSTALL NEW VENTED BASE SHEET, FASTEN BASE SHEET USING PATTERNS AND DENSITIES TO MEET ASCE-07 WIND UPLIFT RESISTANCE REQUIREMENTS. INCREASE DENSITIES AT CORNERS AND ROOF EDGES
6. INSTALL NEW 4'X4'X3.5" THICK POLYISOCYANURATE INSULATION, SET INSULATION IN APPROVED ADHESIVE. PROVIDE 4'X4' SUMPS AROUND ALL ROOF DRAINS.
7. INSTALL TAPERED CRICKETS BETWEEN DRAINS TO FACILITATE DRAINAGE
8. INSTALL NEW ½" WATER RESISTANT COVER BOARD, SET IN APPROVED ADHESIVE
9. INSTALL NEW 60 MIL. TPO ROOF MEMBRANE WITH WELDED SEAMS, FULLY ADHERE TO SUBSTRATE.
10. INSTALL NEW TPO MEMBRANE FLASHINGS, ADHERE TO SUBSTRATE.
11. INSTALL NEW 24 GA. PRE-FINISHED METAL COUNTER FLASHINGS
12. OTHER MISCELLANEOUS WORK AS REQUIRED TO RESULT IN A WATERTIGHT SYSTEM
13. PROVIDE A MANUFACTURER'S 20-YEAR NDL GUARANTEE AND CONTRACTOR'S 3-YEAR WARRANTY
14. REBUILD ONE SECTION OF FALLEN BRICK MASONRY AND CAST STONE COPING

C. ROOF AREA C- BASE BID
1. REMOVE AND DISPOSE OF EXISTING EPDM MEMBRANE, INSULATION, AND OTHER UNDERLAYMENTS TO THE WOOD DECK.
2. REPAIR OR REPLACE DETERIORATED OR BROKEN WOOD DECKING, INCLUDE 150 SQUARE FEET IN BASE BID.
3. REMOVE SPRAYED POLYURETHANE FOAM AND CLEAN SURFACES TO RECEIVE NEW ROOF SYSTEM.
5. INSTALL NEW VENTED BASE SHEET, FASTEN BASE SHEET USING PATTERNS AND DENSITIES TO MEET ASCE-07 WIND UPLIFT RESISTANCE REQUIREMENTS. INCREASE DENSITIES AT CORNERS AND ROOF EDGES
6. INSTALL NEW TAPERED POLYISOCYANURATE INSULATION SYSTEM WITH A MINIMUM 3.5" THICKNESS, SET INSULATION IN APPROVED ADHESIVE. PROVIDE 4'X4' SUMPS AROUND ALL ROOF DRAINS.
7. INSTALL TAPERED CRICKETS BETWEEN DRAINS TO FACILITATE DRAINAGE
8. INSTALL NEW ½" WATER RESISTANT COVER BOARD, SET IN APPROVED ADHESIVE
9. INSTALL NEW 60 MIL. TPO ROOF MEMBRANE WITH WELDED SEAMS, FULLY ADHERE TO SUBSTRATE.
10. INSTALL NEW TPO MEMBRANE FLASHINGS, ADHERE TO SUBSTRATE.
11. INSTALL NEW 24 GA. PRE-FINISHED METAL COUNTER FLASHINGS
12. OTHER MISCELLANEOUS WORK AS REQUIRED TO RESULT IN A WATERTIGHT SYSTEM
13. PROVIDE A MANUFACTURER'S 20-YEAR NDL GUARANTEE AND CONTRACTOR'S 3-YEAR WARRANTY

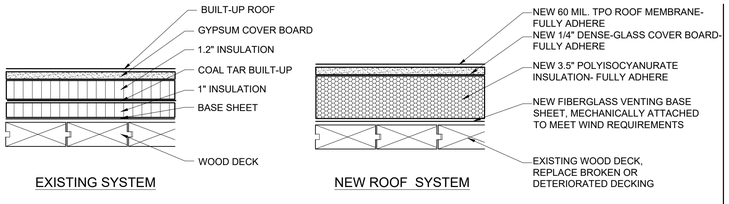
D. ROOF AREA C- BID ALTERNATE 1- INSTALL 3 ADDITIONAL ROOF DRAINS, REVISE DRAINAGE PLAN TO REFLECT THE ADDED DRAINS

E. ROOFTOP SHED ROOF
1. REMOVE AND DISPOSE OF EXISTING ASPHALT SHINGLE ROOF AND UNDERLAYMENTS TO THE WOOD DECK.
2. REMOVE AND DISPOSE OF EXISTING VINYL WALL SIDING AND UNDERLAYEMENTS.
3. INSTALL NEW HIGH TEMPERATURE SELF-ADHERING WATERPROOF MEMBRANES OVER ROOF AND WALL SURFACES
4. INSTALL NEW 24 GA. PREFINISHED GUTTERS AND EDGE METALS AT ROOF PERIMETERS.
5. INSTALL NEW FIBERGLASS REINFORCED ASPHALT ROOF SHINGLES, SET TABS ALONG RAKE EDGES IN MASTIC.
6. INSTALL NEW 24 GA. PREFINISHED SIDING PANELS, SECURE USING SELF-DRILLING FASTENERS WITH EPDM WASHERS. BASIS OF WALL PANEL DESIGN: "PBU" PANEL AS MANUFACTURED BY MBCI. INCLUDE ALL INSIDE AND OUTSIDE CORNER FLASHING AS WELL AS INCIDENTALS REQUIRED TO RESULT IN A WATERTIGHT SYSTEM.
7. PROVIDE A CONTRACTORS 3-YEAR WARRANTY ON THE ROOFING AND SIDING

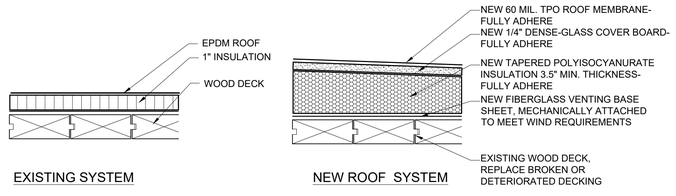
F. METAL ROOFS:
1. CLEAN EXISTING METAL ROOFS, CUT OUT BLISTERS AND AREAS OF LOOSE COATING.
2. APPLY NEW ELASTOMERIC COATING

GENERAL NOTES:

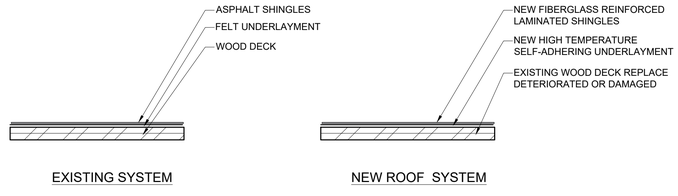
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD. DO NOT SCALE DRAWINGS. DIMENSIONS SHOWN ON THE DRAWINGS ARE TAKEN FROM VARIOUS SOURCES AND ARE PROVIDED FOR INFORMATION ONLY.
2. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES. QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY.
3. THE CONTRACTOR SHALL COORDINATE REQUIREMENTS AND PROVIDE PROOF OF INSURANCE PRIOR TO THE START OF WORK.
4. THERE SHALL BE COMPLETE COOPERATION BETWEEN THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS TO ENSURE SATISFACTORY PROGRESS AND PERFORMANCE OF THE WORK.
5. THE CONTRACTOR SHALL VERIFY EXISTING PLUMBING AND ELECTRICAL LINES AND EQUIPMENT THAT WILL BE ACCESSED AS PART OF WORK PERFORMED.
6. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, LICENSES, AND GOVERNMENT FEES AS REQUIRED. THE CONTRACTOR SHALL COMPLY WITH CODES, ORDINANCES, RULES, REGULATIONS, ORDERS, AND OTHER LEGAL REQUIREMENTS OF PUBLIC AUTHORITY WHICH GOVERN THE PERFORMANCE OF THE WORK.
7. THE CONTRACTOR SHALL PROMPTLY SUBMIT VERBAL AND WRITTEN NOTICE TO THE ARCHITECT/ENGINEER OF OBSERVED VARIANCE OF THE CONTRACT DOCUMENT FROM ACTUAL ON-SITE CONDITIONS.
8. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH MATERIAL SAFETY DATA SHEETS (MSDS) FOR EACH CHEMICAL THAT WILL BE BROUGHT ONTO THE JOB SITE AND SHALL COMPLY WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD.
9. THE CONTRACTOR MUST SUBMIT DEMOLITION AND CONSTRUCTION SCHEDULES TO THE OWNER AND ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO BEGINNING DEMOLITION.
10. THE PRODUCTS SPECIFIED ARE BELIEVED TO HAVE PROPERTIES ADEQUATE FOR SUCCESSFUL COMPLETION OF THE WORK. IF THE CONTRACTOR HAS FOUND THESE PRODUCT TO BE UNACCEPTABLE OR HAS HAD DIFFICULTY USING THESES MATERIAL, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ARCHITECT/ENGINEER.
11. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF THE REPAIR WORK.
12. NOVA ENGINEERING & ENVIRONMENTAL SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEAN, METHODS, TECHNIQUES, SEQUENCING, OR PROCEDURES OR FOR SAFETY PRECAUTIONS AND SAFETY PROGRAMS IN CONNECTION WITH THE PROJECT. SINCE THESE ARE THE RESPONSIBILITY OF OTHERS, NOVA ENGINEERING & ENVIRONMENTAL SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. NOVA ENGINEERING AND ENVIRONMENTAL SHALL NOT HAVE CONTROL OVER OR CHARGE OF ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTORS, OR THEIR AGENTS OR EMPLOYEES, OR OF ANY OTHER NON-NOVA ENGINEERING & ENVIRONMENTAL PERSONS PERFORMING PORTIONS OF THE PROJECT.
13. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL JOB SAFETY DURING THE REPAIR WORK.
14. THE EXISTING BUILDING MUST REMAIN IN OPERATION 100 PERCENT OF THE TIME. DEMOLITION REQUIRED SHALL PROCEED ONLY AT THE DIRECTION OF THE OWNER ACCORDING G TO SCHEDULES AS MUTUALLY AGREED UPON. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CONTROLS AS NECESSARY TO ALLOW FOR THE BUILDING OPERATIONS.
15. THE CONTRACTOR WILL LIMIT ON-SITE STORAGE OF MATERIAL TO THOSE AREAS IDENTIFIED BY THE OWNER. THE CONTRACTOR SHALL NOT UNREASONABLY ENCUMBER SITE WITH MATERIALS OR EQUIPMENT. THE MATERIAL AND EQUIPMENT SHALL BE CONFINED TO THE AREAS INDICATED IN THE CONTRACT DOCUMENTS OR BY THE DIRECTION OF THE OWNER OR ARCHITECT/ENGINEER. DO NOT LOAD STRUCTURE WITH WEIGHT THAT WILL ENDANGER STRUCTURE. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE PROTECTION AND SAFEKEEPING OF PRODUCTS ON THE PREMISES. THE CONTRACTOR SHALL MOVE ANY STORED MATERIAL OR PRODUCTS WHICH INTERFERE WITH OPERATIONS OF THE OWNER.
16. WATER AND ELECTRICITY MAY BE TAKEN FROM BUILDING FOR CONSTRUCTION PURPOSES ONLY AT AREAS IDENTIFIED ACCEPTABLE BY THE OWNER. TOILET FACILITIES IN BUILDING SHALL NOT BE USED BY THE CONTRACTOR.
17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN REQUIRED DUST BARRIERS, CANOPIES, BARRICADES, PROTECTION, AND WARNING LIGHTS IN GOOD CONDITION UNTIL THE COMPLETION OF THE WORK REQUIRING SUCH PROTECTIONS AND THEN REMOVE THE SAME. ALL CANOPIES AND BARRICADES SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
18. THE CONTRACTOR SHALL MAINTAIN PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIAL AND RUBBISH.
19. THE CONTRACTOR SHALL PROTECT THE GROUNDS AND LANDSCAPING WHEN PERFORMING WORK. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGE TO GROUNDS AND LANDSCAPING AND WILL BE REQUIRED TO REPAIR OR REPLACE AS NECESSARY.
20. THE CONTRACTOR SHALL COMPLY WITH ALL SECURITY MEASURES AND PROCEDURES.
21. COSTS CAUSED BY ILL-TIMED WORK, DEFECTIVE WORK, OR WORK NOT CONFORMING TO THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
22. THE CONTRACTOR SHALL PROVIDE SHORING, BRACING, AND SUPPORT AS REQUIRED TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE NEW OR EXISTING CONSTRUCTION DURING THE WORK. CONSTRUCTION DEBRIS SHALL BE REMOVED IN A MANNER THAT AVOIDS OVERLOADING ADJACENT STRUCTURAL MEMBERS.
23. DO NOT STOCKPILE CONSTRUCTION MATERIAL IN A MANNER THAT WILL OVERLOAD OR EXCEED THE CAPACITY OF THE STRUCTURAL MEMBERS.
24. WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS, EVEN THOUGH NOT SPECIFICALLY MARKED ON THE DRAWINGS.
25. ALL CONSTRUCTION SHALL BE SUBJECT TO REVIEW BY THE ARCHITECT/ENGINEER BEFORE IT IS CONCEALED FROM VIEW. COORDINATE EXPECTED REVIEW ITEMS WITH THE ARCHITECT/ENGINEER PRIOR TO THE START OF CONSTRUCTION AND PROVIDE REASONABLE NOTIFICATION TO THE ARCHITECT/ENGINEER TO ALLOW FOR SUCH REVIEWS AS THE WORK PROCEEDS.
26. REMOVE AND DISPOSE OF IN A PROPER MANNER (OFF-SITE) ALL EXISTING MATERIAL REMOVED FROM THE BUILDING DURING THE COURSE OF THE WORK ON A DAILY BASIS. REMOVAL AND DISPOSAL SHALL BE SATISFACTORY TO THE ARCHITECT/ENGINEER AND OWNER.
27. THE CONTRACTOR SHALL COORDINATE USE OF PREMISES UNDER THE DIRECTION OF THE OWNER. TEMPORARY DISRUPTIONS TO THE USE OF THE BUILDING BY EMPLOYEES AND PUBLIC, INCLUDING NOISE, DUST, AND DISRUPTION OF UTILITIES SHALL BE COORDINATED A MINIMUM OF 48 HOURS IN ADVANCE AND APPROVED BY THE OWNER. CONTRACTOR WORK NOT COORDINATED IN ADVANCE WHICH CAUSES DISRUPTIONS TO THE USE OF THE BUILDING BY EMPLOYEES AND PUBLIC MAY BE STOPPED BY THE OWNER AND SHALL NOT BE COMMENCED AGAIN UNTIL PROPER COORDINATION IS ACHIEVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM WORK STOPPAGES OR DELAYS CAUSED BY THE CONTRACTORS LACK OF COORDINATION WITH THE OWNER.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATER TIGHTNESS OF THE AREAS OF THE STRUCTURE BEING WORKED ON DURING THE COURSE OF THE WORK. PROVIDE TEMPORARY PROTECTION OF THE EXISTING CONSTRUCTION FROM THE WEATHER UNTIL REMOVED PORTIONS ARE COMPLETELY REPLACED WITH NEW CONSTRUCTION. THE COST OF DAMAGE AND REPAIRS SHALL BE MADE AT NO COST TO THE OWNER.
29. IN THE EVENT OF CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT AND BETTER QUALITY SHALL GOVERN UNLESS WRITTEN NOTIFICATION IS PROVIDED BY THE ARCHITECT/ENGINEER.



ROOF AREAS A & B



ROOF AREAS C



SHED TYPE ROOF

NOVA
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3900 Kennesaw 75 Parkway
Suite 100
Kennesaw, GA 30144
office: 770.425.0777
fax: 770.425.1113

www.usanova.com

Threadmill Roof Replacement & Related Renovations

Project Address :

5000 Austell Powder Springs Road
Austell, Georgia

Client:

City of Austell
2716 Broad Street, SW
Austell, GA. 30106

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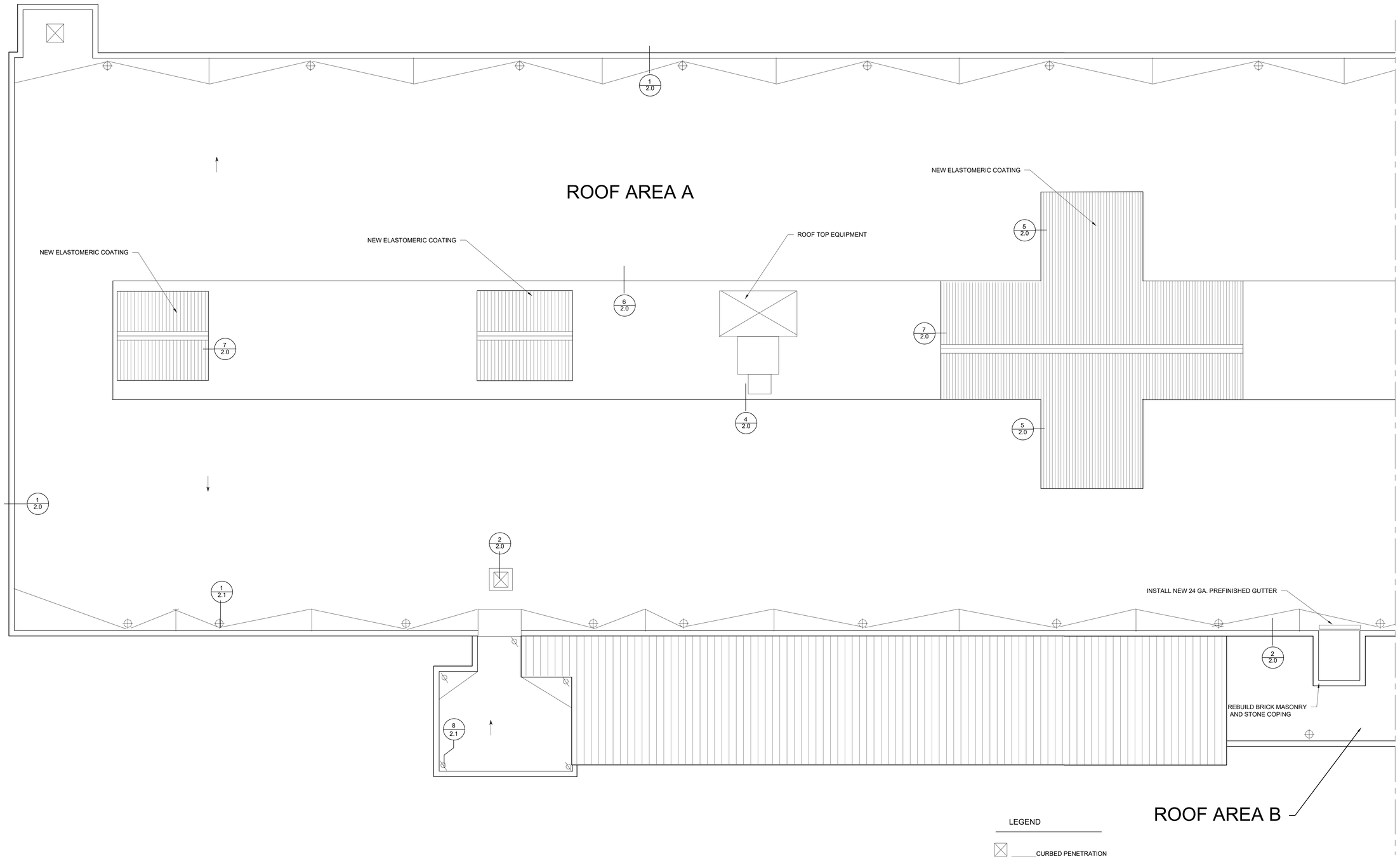

LEGEND

- CURBED PENETRATION
- EXISTING ROOF DRAIN
- NEW ROOF DRAIN
- SOIL STACK
- CAPPED PENETRATION

1 PARTIAL ROOF PLAN
SCALE: 1/8" = 1'-0"

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Roof Plan

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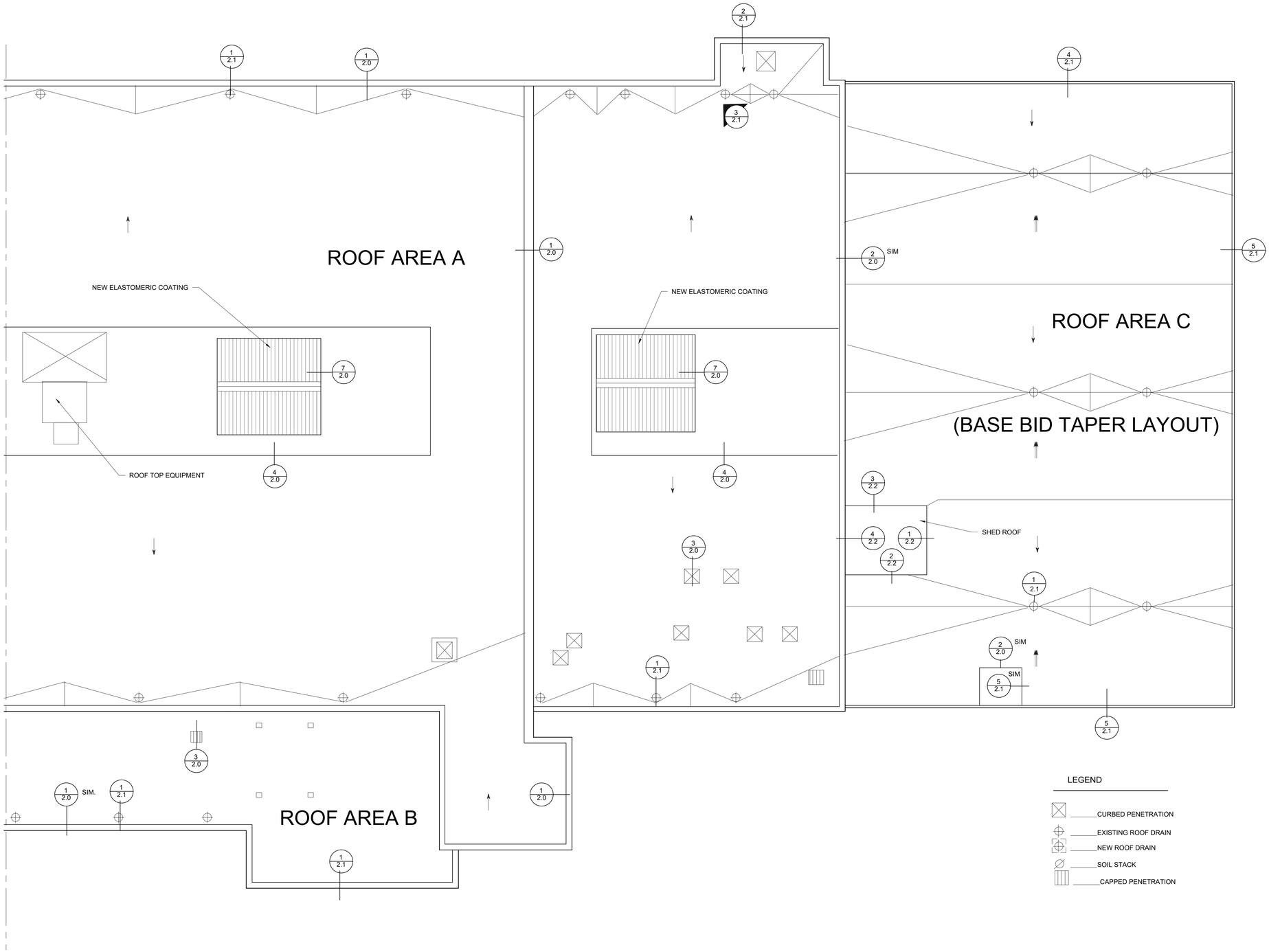

1 PARTIAL ROOF PLAN
SCALE: 1/8" = 1'-0"

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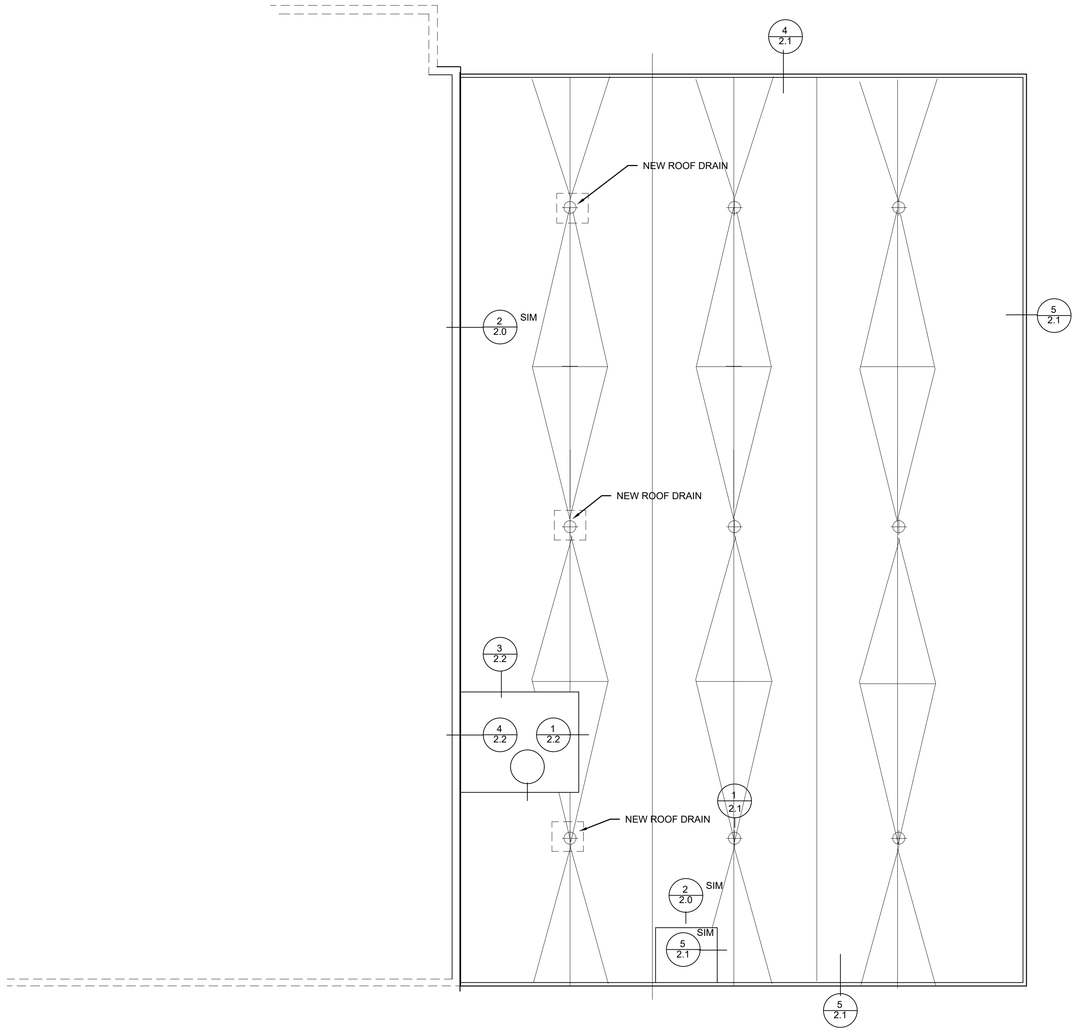

(BID ALTERNATE TAPER LAYOUT)

LEGEND

- CURBED PENETRATION
- EXISTING ROOF DRAIN
- NEW ROOF DRAIN
- SOIL STACK
- CAPPED PENETRATION

1 ROOF PLAN AREA C
SCALE: 1/8" = 1'-0"

N

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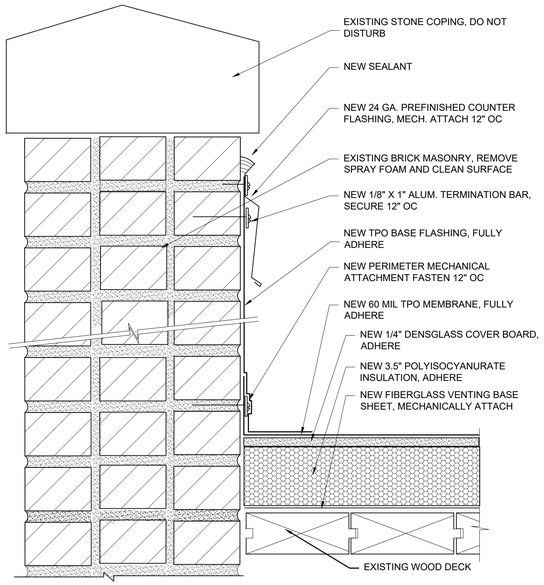
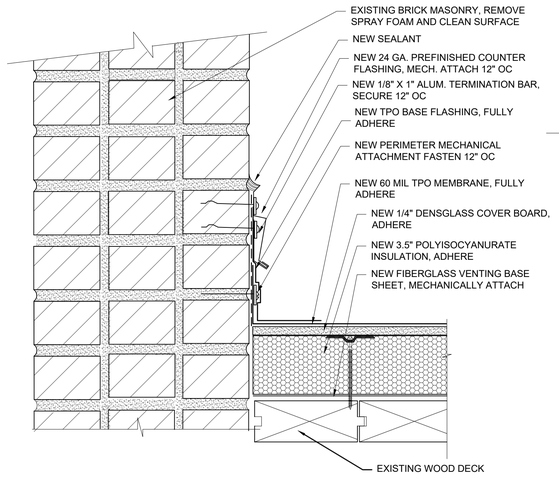
Alt Roof Plan

Sheet No. 1.1



1 PARAPET WALL
SCALE: NTS



2 RISE WALL
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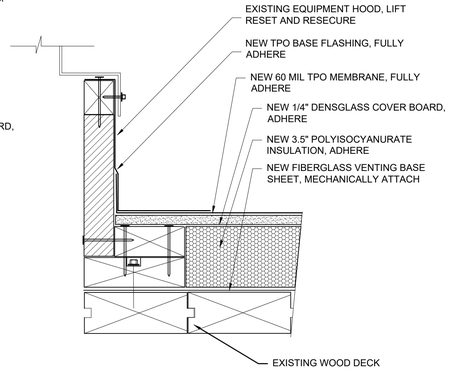
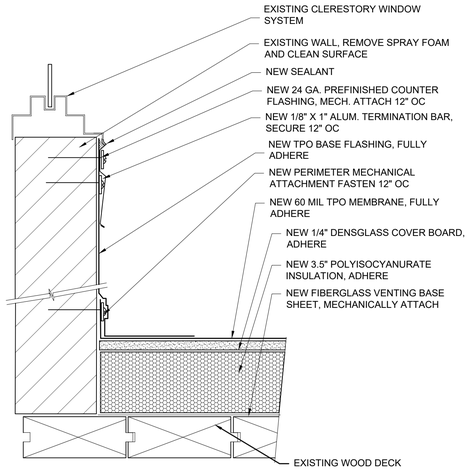
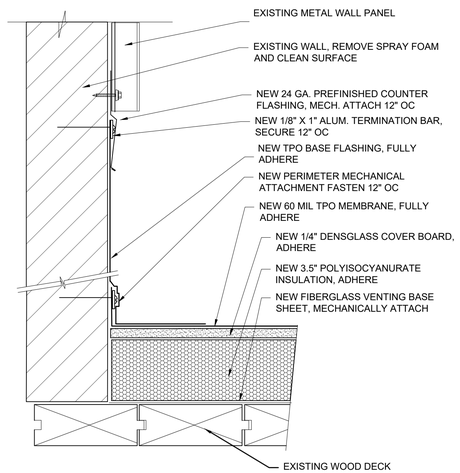


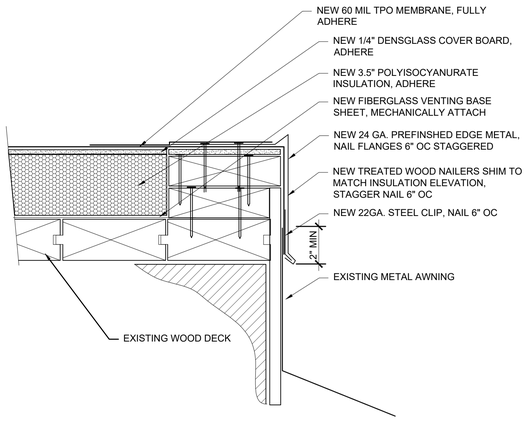
3 TYPICAL CURB
SCALE: NTS



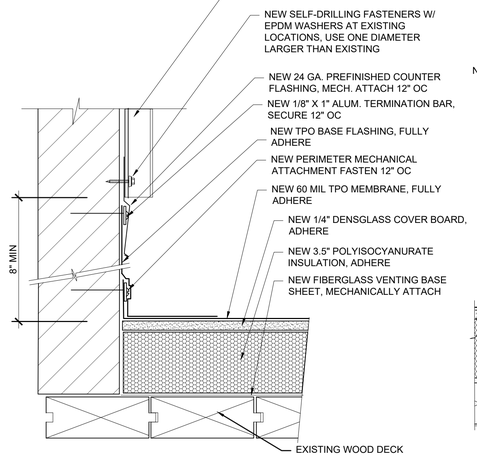
4 CLERESTORY WALL
SCALE: NTS



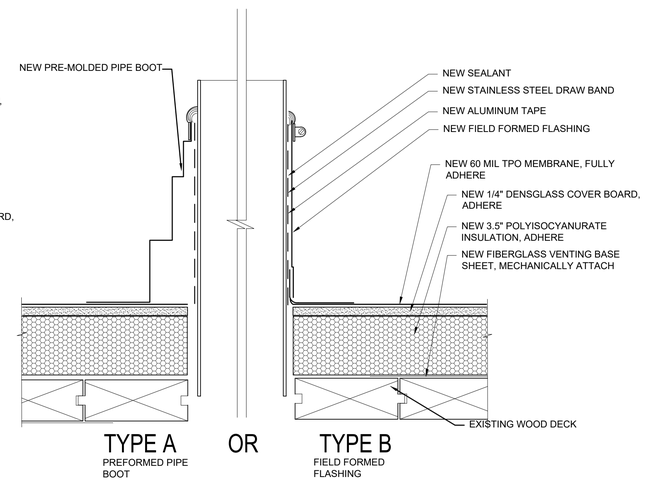
5 FLASHING @ METAL WALL
SCALE: NTS



6 RAISED ROOF EDGE
SCALE: NTS



7 PENTHOUSE WALL
SCALE: NTS



8 SOIL STACK/PIPE PENETRATION
SCALE: NTS

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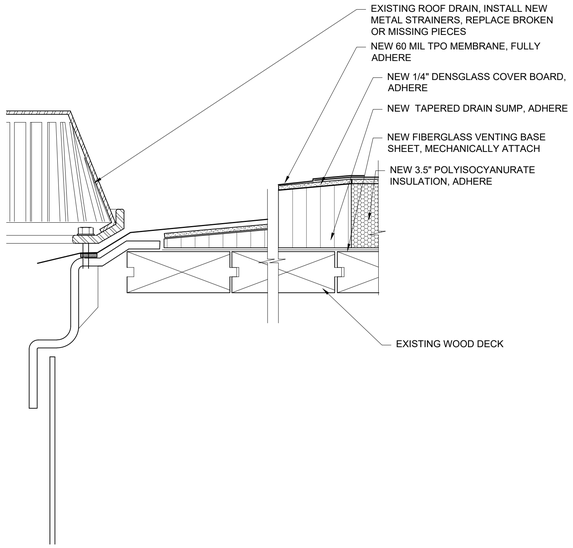
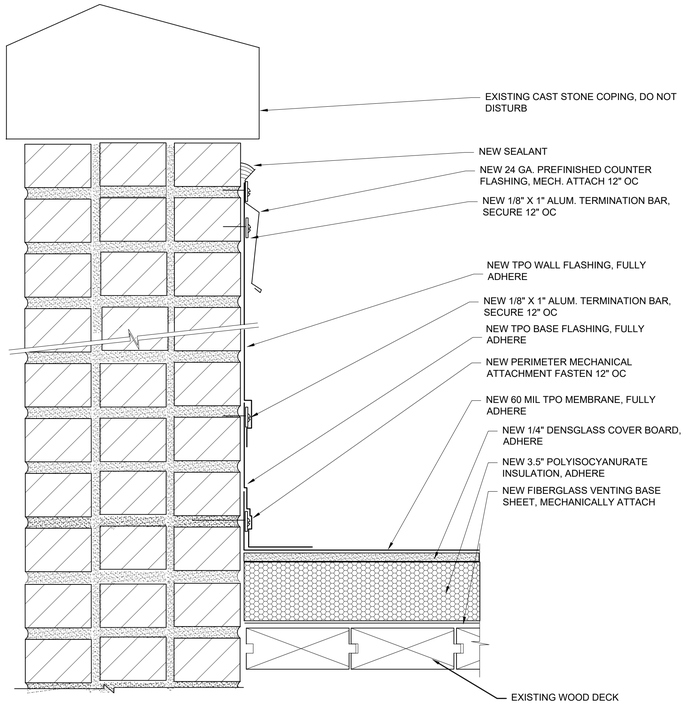
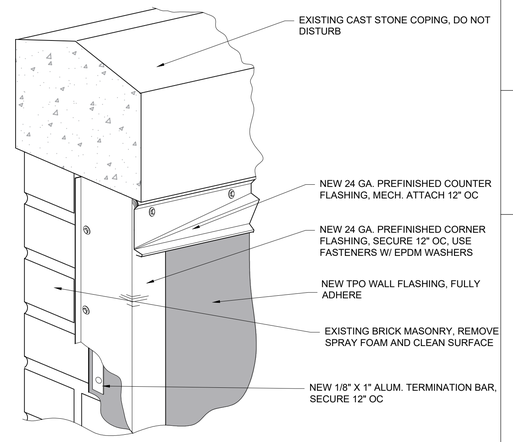


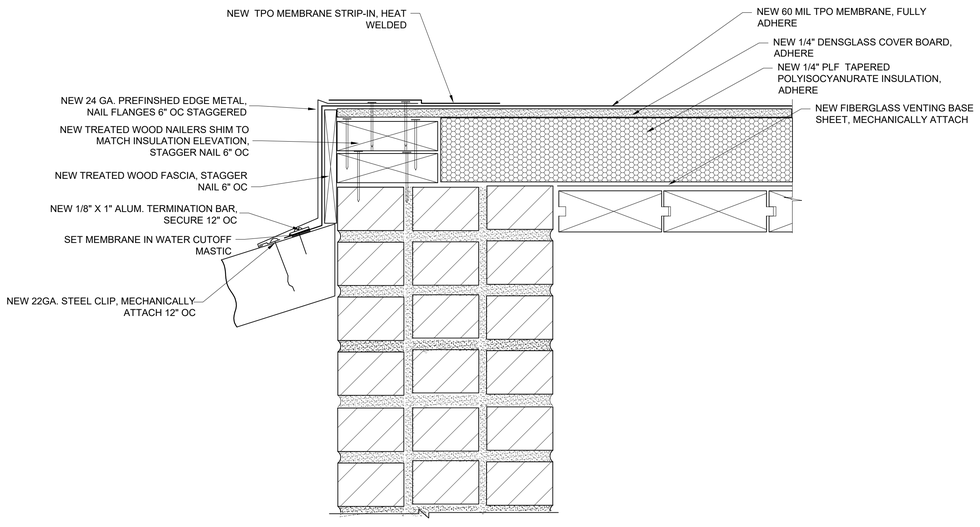
1 ROOF DRAIN
SCALE: NTS



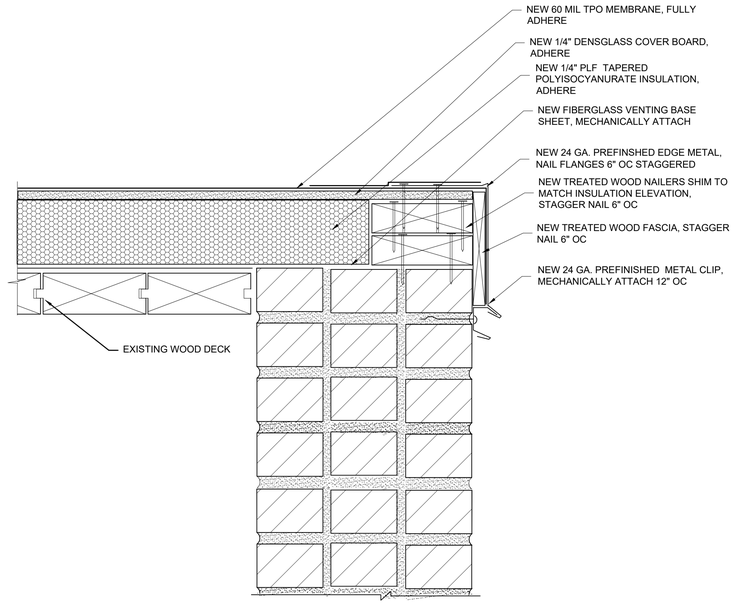
2 HIGH WALL
SCALE: NTS



3 HIGH WALL @ CORNER TERM.
SCALE: NTS



4 LOW ROOF EDGE @ GRADE
SCALE: NTS



5 TYP. LOW ROOF EDGE
SCALE: NTS

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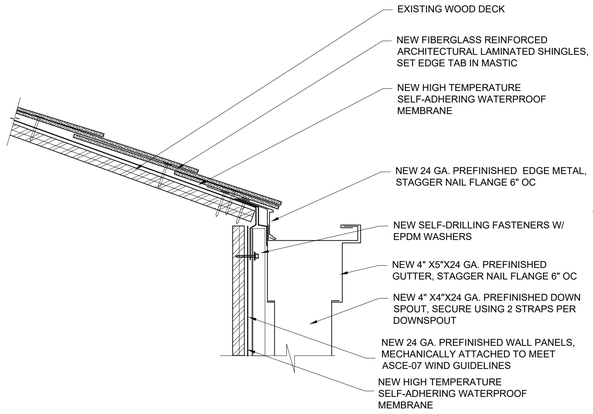
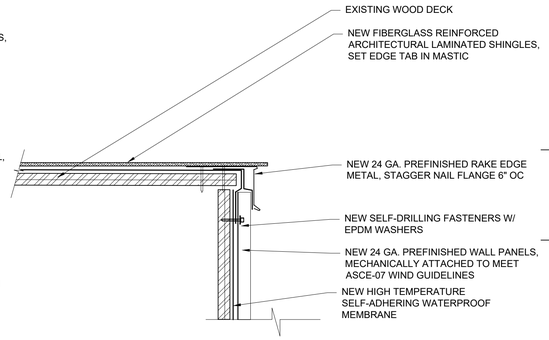
Details

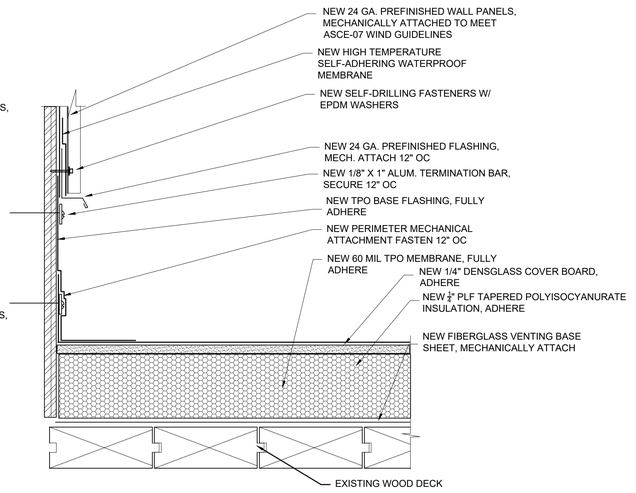
Sheet No. 2.1



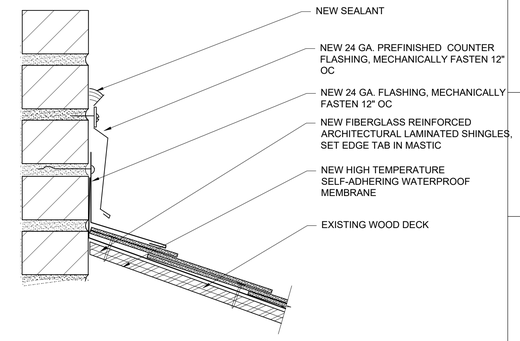
1 SHED ROOF GUTTER EDGE
SCALE: NTS



2 SHED ROOF & WALL RAKE
SCALE: NTS



3 SHED BASE FLASHING
SCALE: NTS



4 SHED @ RISE WALL
SCALE: NTS

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3900 Kennesaw 75 Parkway
Suite 100
Kennesaw, GA 30144
office: 770.425.0777
fax: 770.425.1113

www.usanova.com

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Project Address :

5000 Austell Powder Springs Road
Austell, Georgia

Client:

City of Austell
2716 Broad Street, SW
Austell, GA. 30106

DATE	REVISION

Project No.

Checked:

Drawn: MG

Date:

Sheet Title:

Details

Sheet No. 2.2