



The Reno-Sparks Convention & Visitors Authority is soliciting a
Bid for
**Reno-Sparks Convention Center Hall 3 Roof Replacement Section A
and B**

**Bid 2020-01
PWP-WA-2019-268**

*Released by Trent LaFerriere, Senior Project Manager
(Monday, July 1, 2019)*

The Point of Contact is Trent LaFerriere, Senior Project Manager at (775) 827-7709,
Fax (775) 827-7701, or e-mail tlaferriere@RenoTahoeUSA.com.

All questions or additional information concerning the Bid document must be submitted to the point of contact. No communication to any other staff or Board Member of the Reno-Sparks Convention & Visitors Authority in regards to this Bid is allowed.

SUBMISSION DATE AND TIME: Thursday, August 1, 2019 2:00pm (PST)

Company Name: _____



TABLE OF CONTENTS

I. INTRODUCTION.....	4
II. SCHEDULE.....	4
III. SUBMISSION OF RESPONSE.....	5
IV. BIDDER’S CHECKLIST.....	6
V. PROPOSER INFORMATION.....	7
A. Company Information	7
B. Company Background	8
C. Nevada Contractor License Information:.....	9
D. Business License Information:.....	9
VI. SUBCONTRACTORS EXCEEDING 5% OF BID	10
VII. SUBCONTRACTORS EXCEEDING 1% OF BID AMOUNT	11
VIII. CERTIFICATION REGARDING DEBARMENT	12
IX. LOCAL PREFERENCE AFFIDAVIT.....	13
X. ACKNOWLEDGMENT AND EXECUTION	14
XI. PERFORMANCE BOND, PAYMENT BOND AND BID BOND.....	15
A. Performance Bond.....	15
B. Payment Bond.....	15
C. Bid Bond.....	15
XII. GENERAL TERMS AND CONDITIONS	15
A. The bidder agrees that.....	15
B. Addenda.....	16
C. Advertisements, Product Endorsements.....	16
D. Annual Appropriation of Funds.....	16
E. Brand Names.....	16
F. Business License Requirement	17
G. Compliance.....	17
H. Confidential Information.....	17
I. Conflict of Interest	17
J. Default of Agreement.....	17
K. Disputes	18
L. Document Ownership	18
M. Document Submittals	18
N. Evaluation And Recommendation, Selection And Agreement.....	18



O.	Exceptions	19
P.	Indemnification	19
Q.	Insurance	19
R.	Items Offered	20
S.	Late Bids, Modifications, or Withdrawals	20
T.	Lawful Performance	21
U.	Litigation Warranty.....	21
V.	Non-Discrimination.....	21
W.	Open Meeting Law	21
X.	Prevailing Wages	22
Y.	Protests.....	22
Z.	Signature.....	23
AA.	Submission of Responses	23
BB.	Tax Exemption.....	25
CC.	Venue	25
DD.	Withdrawal of Bids/Proposals.....	25
XIII.	BASE BID FORM.....	26
XIV.	5% BID BOND.....	34
	PROJECT MANUAL.....	36



I. INTRODUCTION

The Reno-Sparks Convention and Visitors Authority ("Authority") is currently accepting sealed responses from qualified Bidders (a "Bidder") for the provision of services, as set forth in this **Bid 2020-01 PWP-WA-2019-268**.

The Authority, an independent governmental entity, was established in February 1959 as the Washoe County Fair and Recreation Board. The Authority owns and/or operates the Reno-Sparks Convention Center, Reno Events Center, National Bowling Stadium, Reno-Sparks Livestock Events Center, and Wildcreek Golf Course. The Authority is the operating instrumentality in the Washoe County area for promoting conventions, tourism, and outdoor recreation.

This bid is for the Roof Replacement of Hall 3 Section A and B at the Reno-Sparks Convention Center.

II. SCHEDULE

Request for Proposals Available	Monday, July 1, 2019
Mandatory Pre-bid Meeting	Thursday, July 11, 2019 2:00PM (PST)
Written Questions Due (if any)	Thursday, July 18, 2019 5:00PM (PST)
Written Responses to Questions Issued	Thursday, July 25, 2019
Bid Responses Due	Thursday, August 1, 2019 2:00PM (PST)
Bid Opening Time	Thursday, August 1, 2019 2:10PM (PST)

A Mandatory Pre-Bid meeting will occur on July 11, 2019, 2:00 PM (PST), at the Reno-Sparks Convention Center, Administrative Offices, 4590 South Virginia Street, Reno, Nevada.

Any irregularities or lack of clarity in this Bid should be brought to the attention of the Point of Contact prior to or on the date for Written Questions set forth in this Section for correction or clarification.

Any addenda to this Bid issued will forthwith become an integral part of this Bid. Bidder is required to acknowledge receipt of same by signing and returning the addenda in its response.



III. SUBMISSION OF RESPONSE

Bidder will submit its response to this Bid on the letterhead of its company, Bidder establishment, corporation, etc. attached to the original Bid 2020-01 PWP-WA-2019-268 document. Bidder will sign and return the ENTIRE BID DOCUMENT, together with any addenda.

Responses will be enclosed in a sealed envelope addressed to:

Reno-Sparks Convention and Visitors Authority
Finance Department
P.O. Box 837
Reno, NV 89504-0837

Or delivered to:

Reno-Sparks Convention and Visitors Authority
Finance Department (located at the Reno Town Mall)
4001 S. Virginia Street, Suite G
Reno, NV 89502

Response envelope must indicate name and address of Bidder, Bid number, and opening date.

In order for a response to be considered it will be mandatory that the response be in conformance with the terms and conditions of this Bid.



IV. BIDDER'S CHECKLIST

Bidders are instructed to complete and return the following items in order for their proposals to be complete. Failure to return all the items may result in your proposal being declared "non-responsive."

Bidder Information Requirements		Page	Completed
V.A.	Company Information	7	<input type="checkbox"/>
V.B.	Company Background	8	<input type="checkbox"/>
V.C.	Nevada Contractor License Information	9	<input type="checkbox"/>
V.D.	Business License Information	9	<input type="checkbox"/>
VI.	Subcontractors Exceeding 5% of Bid	10	<input type="checkbox"/>
VII.	Subcontractors Exceeding 1% of Bid	11	<input type="checkbox"/>
VIII.	Certification Regarding Debarment	12	<input type="checkbox"/>
IX.	Local Preference Affidavit	13	<input type="checkbox"/>
X.	Acknowledgment and Execution	14	<input type="checkbox"/>
XIII.	Base Bid Form	26	<input type="checkbox"/>
XIV.	5% Bid Bond	34	<input type="checkbox"/>



V. PROPOSER INFORMATION

The following information must be completed, either typed or printed, and returned with the bid in accordance with the General Conditions contained herein.

A. Company Information

Company Name:
Contact Name:
Address:
City, State Zip Code:
Telephone Number:
Facsimile Number:
E-Mail:



B. Company Background

Has your company ever failed to complete any contracts awarded to it?
No___ Yes___ (If yes, please provide details.)

Has your company filed any arbitration request or law suits on contracts awarded within the last five years? No___ Yes___ (If yes, please provide details.)

Does your company now have any legal suits or arbitration claims pending or outstanding against it or any officers relating to the performance of a public contract?
No___ Yes___ (If yes, please provide details.)

Does your company now employ any officers or principals who were with another Bidder when that company failed to complete a contract within the last five years?
No___ Yes___ (If yes, please provide details.)

Has your company had a contract partially or completely terminated for default (cause) within the past five years? No___ Yes___ (If yes, please provide details.)

Has your company been found non-responsible on a government bid within the last five years? No___ Yes___ (If yes, please provide details.)



C. Nevada Contractor License Information:

Prospective bidders will be required to have a current Contractor's License under the Nevada State Law for the type of work specified herein.

License Number:
Classification:
Limitation(s):
Date Issued:
Date of Expiration:
Name of Licensee:
City, State, Zip Code:
Telephone Number:

D. Business License Information:

City of Reno
License Number:
License Expiration:
Name of Licensee (if different):

Or

License will be obtained after award.



VI. SUBCONTRACTORS EXCEEDING 5% OF BID

Pursuant to NRS 338.141, the Bidder must submit the following names of First-Tier Subcontractors who will provide to Bidder labor or a portion of the work or improvements for which Subcontractor will be paid an amount exceeding five percent (5%) of the bid. The Bidder shall list the name of a Subcontractor for each portion of the Work, the value of which exceeds five percent (5%) of the Bid Price. If Bidder will perform more than 5% of the work, Bidder shall also list their name and description of the work that the prime contractor will perform in the space provided below. If, additional space is needed, attach a separate page.

Subcontractor Name	
Nevada License	Limit of License
Address	
Telephone	
Description of Work	
Subcontractor Name	
Nevada License	Limit of License
Address	
Telephone	
Description of Work	
Subcontractor Name	
Nevada License	Limit of License
Address	
Telephone	

Bidder Name: _____ Authorized Signature: _____



VII. SUBCONTRACTORS EXCEEDING 1% OF BID AMOUNT

In compliance with NRS 338.141, Bidder submits the following names of First-Tier Subcontractors who will provide to Bidder labor or a portion of the Work or improvements for which Subcontractor will be paid an amount exceeding one percent (1%) of the Bid or \$50,000, whichever is greater. The Bidder shall list the name of a Subcontractor for each portion of any of the Work the value of which exceeds one percent (1%) of the Bid Price.

Since all Subcontractors listed on the Bidder’s 5% Subcontractor Information Form are over 1% of the Bid amount, those Subcontractors shall automatically be deemed incorporated into this 1% Subcontractor Information form and need not be re-listed below.

Information provided must be submitted within two (2) hours after the completion of the opening of the bids (Per NRS 338.141). Bidder shall enter “NONE” under “Name of Subcontractor” if not utilizing subcontractors exceeding this amount. This form must be complete in all respects. If, additional space is needed, attach a separate page. The bidder may elect to submit this information with the bid proposal and, in that case, the bidder will be considered as having submitted this information within the above two hours.

Subcontractor Name	
Nevada License	Limit of License
Address	
Telephone	
Description of Work	
Subcontractor Name	
Nevada License	Limit of License
Address	
Telephone	
Description of Work	

Bidder Name: _____ Authorized Signature: _____



VIII. CERTIFICATION REGARDING DEBARMENT

Certification Regarding Debarment, Suspension, And Other Matters

(This to be signed and returned at the time of bid)

The prospective bidder, _____ certifies to the best of its knowledge and belief that it and its principals:

- Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. Any exceptions provided will not necessarily result in denial of award, but will be considered in determining bidder responsibility and whether or not the Authority will enter into contract with the party. For any exception noted, indicate on an attached sheet to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Signature:
Print Name:
Title:
Date:



IX. LOCAL PREFERENCE AFFIDAVIT

This form is required to receive a preference in bidding on projects exceeding \$250,000. This form must be submitted no later than two (2) hours following the opening of bids, only if the bidder wishes for their preferential status (established by their current Certificate of Eligibility) to be considered in the evaluation of bids. A copy of the bidder's Certificate of Eligibility must be submitted at the time the contractor submits their bid.

I, _____, on behalf of the Contractor, _____, swear and affirm that in order to be in compliance with NRS 338.0117 and be eligible to receive a preference in bidding 2020-01 PWP-WA-2019-268 Reno-Sparks Convention Center Hall 3 Roof Replacement Section A and B certify that the following requirement will be adhered to, documented and attained on completion of the contract. Upon submission of this affidavit on behalf of _____, I recognize and accept that failure to comply with any requirements is a material breach of the contract and entitles the Authority to damages. In addition, the Contractor may lose their preference designation and/or lose their ability to bid on public works for a period of time, pursuant to NRS 338:

- The Contractor shall ensure at least 50 percent of workers employed on the public work possess a Nevada driver's license or identification card;
- The Contractor shall ensure all vehicles used primarily for the public work will be registered and (where applicable) partially apportioned to Nevada;
- The Contractor shall ensure payroll records related to this project are maintained and available within the State of Nevada.

These requirements are not applicable to Contractors who do not use the "Bidder's Preference" eligibility certificate in their bid or do not receive an advantage in ranking of bids due to their preference status.

Signature:
Print Name:
Title:
Date:



X. ACKNOWLEDGMENT AND EXECUTION

_____ (Name of Principal) being first duly sworn, deposes and says: That he/she is the Bidder, or authorized agent of the Bidder for whom the aforesaid described work is to be performed by; that he/she has read the Plans, Specifications, and related documents including but not limited to, any addenda issued and understands the terms, conditions, and requirements thereof; that if his/her bid is accepted that he/she agrees to furnish and deliver all materials except those specified to be furnished by the Authority and to do and perform all work for the bidding 2020-01 PWP-WA-2019-268 Reno-Sparks Convention Center Hall 3 Roof Replacement Section A and B together with incidental items necessary to complete the work to be constructed and/or services to be provided in accordance with the Specifications, Plans, and Contract Documents annexed hereto.

The undersigned, as Bidder, declares that the only persons or parties interested in this proposal, as principals, are those named herein, the Bidder is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid: that this proposal is made without collusion with any other person, firm or corporation; that he/she has carefully examined the location of the proposed work; the proposed form of Contract, the Contract Provisions, Plans, Specifications and Contract Documents incorporated therein referred to and made part thereof; that he/she proposes and agrees if this proposal is accepted, that he/she will contract with the Authority in the form of the Contract prescribed, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Contract and annexed Contract Provisions, Plans and Specifications, in the manner and time prescribed and according to the requirements of the Project Representative as therein set forth, it being understood and agreed that the quantities shown herein are approximate only and are subject to increase or decrease, and that he/she will accept, in full, payment therefore the indicated prices.

Signature:
Print Name:
Title:
Date:



XI. PERFORMANCE BOND, PAYMENT BOND AND BID BOND

All Bonding Companies must have an "A" rating or better with Moody's or A.M. Best Company, and be included on the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bond and as Acceptable Reinsuring Companies" as published in circular 570 (as amended) by the audit staff, Bureau of Accounts, U.S. Treasury Department. (In other words, the company is T-listed.)

A. Performance Bond

The Contractor awarded this bid will be required to furnish the Authority with a surety bond conditioned upon the faithful performance of the contract. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the Authority. The bond shall be in a sum equal to one hundred percent (100%) of the amount of the contract price. Such bond shall be forfeited to the Authority in the event that bidder receiving the contract shall fail or refuse to fulfill the requirements and all terms and conditions of the contract.

B. Payment Bond

The Contractor awarded this bid will be required to furnish the Authority with a payment bond. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the Authority. The bond shall be in a sum equal to one hundred percent (100%) of the amount of the contract price. The bond must be solely for the protection of claimants supplying labor or materials to the contractor to whom the contract was awarded, or to any of his subcontractors, in the prosecution of the work provided for in such contract.

C. Bid Bond

A bid deposit in an amount equal to at least 5% of the bid is required as a bid security by the Authority. The bid security may only be in cash, cashier's check, certified check or bid bond. Checks must be made payable to the Reno-Sparks Convention And Visitors Authority. If the bid security is a bond, it shall be executed by a surety insurer authorized to issue surety bonds in the State of Nevada. The bid security must be executed by the bidder and enclosed with the bid proposal in the sealed bid envelope.

XII. GENERAL TERMS & CONDITIONS

A. The bidder agrees that

Bidder has carefully examined the specifications, and all provisions relating to the item(s) to be furnished or the work to be done; understands the meaning, intent, and requirements; and

Bidder will enter into a written Agreement and furnish the item(s) or complete the work in



the time specified, and in strict conformity with the Reno Sparks Convention and Visitors Authority's specifications for the prices quoted.

No communication to any other staff or Board Member of the Authority in regards to this Bid is allowed, except through the designated point of contact, and any such communication initiated by the Bidder may result in a disqualification of the Bidder.

Note: Bidder is defined as any individual, partnership, or corporation submitting a bid, proposal, or quotation in response to a request for bid (Bid), request for proposal (RFP), request for information (RFI) or request for qualification (RFQ). A Bidder may also be referred to as a bidder, contractor, proposer, supplier or vendor.

The use of the title "Bidder", "Contractor", "Consultant", "Proposer", or "Vendor" within this solicitation document and any resulting Agreement shall be deemed interchangeable and shall refer to the person or entity with whom the Authority is soliciting and/or contracting for the service or product referenced within the bid document.

B. Addenda

The effect of all addenda to the bid documents shall be considered in the bid, and said addenda shall be made part of the bid documents and shall be returned with them. Before submitting a bid, each Bidder shall ascertain whether or not any addenda have been issued, and failure to acknowledge any such addenda may render the bid invalid and result in its rejection.

All potential Bidders are responsible for monitoring the Authority website regarding the availability of new bid documents or addenda (where applicable). The Authority will not be responsible for the results of any potential failures in automatic notification systems to potential Bidders or plan holders with respect to these documents and will not adjust bid schedules or requirements due to any potential failures of those systems.

C. Advertisements, Product Endorsements

Authority employees are prohibited from making endorsements, either implied or direct, of commercial products or services without written approval of the Authority President/CEO.

D. Annual Appropriation of Funds

In the event the Authority fails to obligate requisite funds for the ensuing fiscal year(s) for payment of amounts due against an agreement resulting from this Request for Proposal, necessitating cancellation of the Agreement, the successful Bidder(s) shall agree to hold the Authority free from any charge or penalty.

E. Brand Names

The herein contained technical information shall in no manner be construed as restrictive as to the manufacturer, process or point of origin. References appearing restrictive shall be



deemed inadvertent or employed as a descriptive device to delineate as to the quality, or configuration.

Offers made as an alternate to those specified shall be given consideration in the evaluation process provided said alternatives shall be fully described using brochures, specifications, literature, or any combination thereof, accompanying and deemed an integral portion of the Bidder's response.

The Authority shall solely determine the acceptability of all offerings.

F. Business License Requirement

All companies doing business with the Authority are required to obtain and maintain a current business license from the appropriate jurisdiction prior to the commencement of work. Bidder(s) awarded an Agreement resulting from this bid shall be required to obtain a current business license if they do not already possess one.

G. Compliance

All material and work performed shall comply with standing Federal, State, and Local Codes and Regulations, including but not limited to Occupational Safety and Health Act, Americans with Disabilities Act, etc.

H. Confidential Information

Any information deemed confidential or proprietary should be clearly identified by the Bidder as such. It may then be protected and treated with confidentiality only to the extent permitted by state law. Otherwise the information shall be considered a public record. Information or data submitted with a bid will not be returned.

I. Conflict of Interest

No Authority employee or member of the employee's immediate family, may participate directly or indirectly in the procurement process pertaining to this bid if they:

- Have a financial interest or other personal interest that is incompatible with the proper discharge of their official duties in the public interest or would tend to impair their independence, judgment or action in the performance of their official duties.
- Are negotiating for or have an arrangement concerning prospective employment with Bidder. The Bidder warrants to the best of his knowledge that the submission of the bid will not create such conflict of interest.

J. Default of Agreement

In case of default by the successful Bidder, the Authority may procure the product(s) or service from other sources and hold the Bidder responsible for any excess cost occasioned thereby.

If necessity requires the use of materials or supplies not conforming to the specifications, they may be accepted and payment therefore shall be made at a proper adjustment in price.

Default by the Bidder in any manner including failure or refusal to furnish any product(s) or service at the price and/or the time specified may be considered cause to commence with proceedings against any surety held, or assess a penalty equal to five (5) percent of the total proposal price.

K. Disputes

All disputes under this proposal shall be submitted to binding arbitration in accordance with the procedures of the Commercial Rules of the American Arbitration Association and judgment of the arbitrator shall be binding as a final judgment and shall be entered by a court of competent jurisdiction. Such arbitration shall be conducted in Washoe County, Nevada. The procedures specified herein shall be the sole and exclusive procedure for resolution of disputes arising out of, or relating to this proposal except those instances otherwise overseen by the governing law of the State of Nevada.

L. Document Ownership

All technical documents and records originated or prepared pursuant to this Agreement, including papers, reports, charts, and computer programs, shall be delivered to and become the exclusive property of the Authority and may be copyrighted by the Authority. Bidder assigns all copyrights to Authority by undertaking this agreement.

M. Document Submittals

It should be noted that the documents submitted by prospective Bidders are competitive sealed proposals and not competitive sealed bids. When proposals are opened, prices and other information will not be made public until the proposal is awarded. There shall be no disclosure of any Bidder's information to competing Bidders prior to the award of the proposal.

Upon award of the Agreement, the executed Agreement and proposals will become public information. Accordingly, each proposal should be submitted on the vendor's most favorable terms from a price and technical standpoint.

N. Evaluation and Recommendation, Selection and Agreement

The Authority reserves the right to waive any informalities or irregularities.

The Authority reserves the right to alter, amend, or modify any provisions of this Bid, or to withdraw this Bid, at any time prior to the award of an Agreement pursuant hereto.

The Authority reserves the right to hold responses for a period of ninety (90) days from the date of opening before awarding or rejecting said responses.

Severability exists with regard to acceptance or rejection of any item, group of items, or



section unless the Bidder has stipulated specific limitations.

Once a final selection has been made as described above, the Authority will work with the Bidder on preparing an Agreement (the "Agreement") for execution, which will set forth the terms and scope of the engagement of the selected Bidder, including, but not be limited to, the terms set forth in this Bid. If the Authority and the selected Bidder have not executed a negotiated agreement within fifteen (15) business days after selection by the Authority, the Authority may terminate negotiations with that selected Bidder and may initiate negotiations with an alternative Bidder.

No Agreement may be assigned to any other person or entity.

Upon notification of selection and full execution of the Agreement, the Bidder selected must be duly licensed to conduct business in the State of Nevada, Washoe County and the City of Reno or the City of Sparks. Proof of certificates, licenses, and permits must be submitted to the Authority Finance Department before work can begin. Cost of all required certificates, licenses, and permits are the responsibility of the Bidder.

O. Exceptions

A Bidder deviating from specifications must specify any and all deviation(s). Failure to note said exceptions shall be interpreted to convey that the Bidder shall propose to perform in the manner described and/or specified in this bid solicitation. If exception(s) are taken or alternatives offered, complete descriptions must be shown separately.

P. Indemnification

The Bidder hereby agrees to indemnify and to save and hold harmless the Authority and their agents from any and all claims, actions, costs, expenses, (including attorney's fees), liability, damages or payments incurred by reasons of any bodily injury including death or property damage resulting from the Bidder's operations.

Q. Insurance

The Agreement contemplated by this Bid will require that the successful Bidder shall procure and maintain, at its sole expense the following minimum insurance coverage:

Commercial General Liability. Commercial General Liability at least as broad as Insurance Services Office policy form CG 00 01 12/07, or equivalent, providing coverage on an occurrence form for Bodily Injury, Property Damage, Liquor Liability, Independent Bidders, Personal Injury, Broad Form Property Damage, Broad Form Contractual Liability and Medical Payments. The limits of liability shall not be less than One Million Dollars (\$1,000,000) per occurrence, Two Million Dollars (\$2,000,000) general aggregate for both bodily injury and property damage.

The policy shall include the Authority and its agents, beneficiaries, partners, employees, the County of Washoe, and the Authority of Reno as additional insureds with coverage at least as broad as Insurance Services Office (ISO) endorsement form CG 20 26 07/04.



The policy shall provide that coverage is provided on a primary basis, not excess or contributing with or secondary to any other insurance as may be available to the additional insureds.

Automobile Liability. Automobile Liability at least as broad as Insurance Services Office Business Auto Coverage Form CA00 01, or equivalent, providing coverage for Bodily Injury and Property Damage resulting from the ownership, maintenance or use of any auto, whether owned, rented or hired or non-owned. The limit of liability shall not less than One Million Dollars (\$1,000,000) combined single limit (CSL) for bodily injury and property damage.

Workers' Compensation and Employer's Liability. Workers' Compensation at least as broad as National Council on Compensation Insurance (NCCI) policy form WC 00 00 00 B 07/11, or equivalent, providing coverage meeting the requirements of the Workers' Compensation law of the State of Nevada. To the extent such waivers are obtainable from the insurance carriers, the policy shall include an endorsement waiving the insurance company's rights of subrogation against the Authority, its agents, beneficiaries, partners, employees, the County of Washoe, and Authority of Reno. This endorsement shall be at least as broad as National Council on Compensation Insurance (NCCI) Waiver of Our Right to Recover from Others Endorsement form WC 00 03 13 with a revision date of January 2004.

Property. Property insurance on an All-Risk or Special Form providing coverage for personal property of the Bidder.

Form of Coverage. All such insurance maintained by the Bidder shall be: issued by insurance companies authorized to do insurance business in the State of Nevada, issued by insurance companies with current A.M. Best financial ratings of at least A X or better satisfactory in form and substance to Authority.

All insurance and bond shall provide that the policy shall not be cancelled nor shall coverage be reduced thereunder until after thirty (30) days written notice to Authority at Reno-Sparks Convention & Visitors Authority, Post Office Box 837, Reno, Nevada 89504-0837.

The Bidder shall deposit each policy or a certificate thereof with Authority no less than thirty (30) days prior to the start of the agreement date.

R. Items Offered

If the item offered by the Bidder has a trade name, brand and/or catalog number, such shall be stated in the bid. If the Bidder proposes to furnish an item of a manufacturer or vendor other than that mentioned on the face hereof, Bidder must specify maker, brand, quality, catalog number, or other trade designation. Unless such is noted on the bid form, it will be deemed that the item offered is that designated even though the bid may state "or equal".

S. Late Bids, Modifications, or Withdrawals

Bids, modifications of bids, or bid withdrawals received after the exact time and date specified for receipt will not be considered.



Within the scope of this proposal, the Authority shall be held harmless in any and all transactions between the Bidder and the other participating governmental entities.

T. Lawful Performance

Vendor shall abide by all Federal, State and Local Laws, Ordinances, Regulations, and Statutes as may be related to the performance of duties under this agreement. In addition, all applicable permits and licenses required shall be obtained by the vendor, at vendor's sole expense.

U. Litigation Warranty

The Bidder, by bidding, warrants that Bidder is not currently involved in litigation or arbitration concerning the materials or Bidder's performance concerning the same or similar material or service to be supplied pursuant to this Agreement of specification, and that no judgments or awards have been made against Bidder on the basis of Bidder's performance in supplying or installing the same or similar material or service, unless such fact is disclosed to the Authority in the bid. Disclosure may not disqualify the Bidder. The Authority reserves the right to evaluate bids on the basis of the facts surrounding such litigation or arbitration and to require Bidder to furnish the Authority with a surety bond executed by a surety company authorized to do business in the State of Nevada and approved by the Authority in a sum equal to one hundred percent (100%) of the Agreement price conditional on the faithful performance by Bidder of the Agreement in the event the bid is awarded to Bidder, notwithstanding the litigation or arbitration.

V. Non-Discrimination

No Bidder providing a service, program or activity to the public on behalf of the Authority shall discriminate against any person because of sex, race, color, creed, national origin or disability, and shall comply with the Americans with Disability Act and Authority's policies pursuant thereto when providing said service, program or activity.

The Authority is an Affirmative Action/Equal Opportunity Employer. Bidders shall be cognizant of the requirements for compliance with Executive Order 11246, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 and as supplemented in regulations of the U.S. Department of Labor (41 CFR part 60).

The Contractor and any Subcontractors will comply with the requirements set forth in Nevada Revised Statutes Chapter 338 regarding public works, including, but not limited to, the provisions of NRS 338.125 which provides that the Contractor and Subcontractors may not discriminate in any of their employment practices.

W. Open Meeting Law

NRS 241 provides that public business will be conducted in open meeting.

X. Prevailing Wages

Bidder is responsible for complying with all applicable local, State and Federal wage laws, whether or not specifically cited in this bid document.

Per NRS Sections 338.020 through 338.090, certain projects defined as “public works” require the payment of the prevailing wage as determined by the Labor Commissioner. Generally speaking, projects/contracts for construction of a public work valued at less than \$100,000 are exempt from the prevailing wage requirement (NRS 338.080). Bidder shall be fully aware of the prevailing wage requirements of the State of Nevada as detailed in NRS Chapter 338 and price their bid response accordingly, where applicable. Further information concerning Prevailing Wage rates can be found at:

http://www.laborcommissioner.com/publicworks_prevailingwage.html.

Y. Protests

Pre-Opening Protests: Any protest based upon restrictive specifications or alleged improprieties by the Authority, which are apparent prior to proposed opening including, without limitation, these protest procedures, shall be submitted to the Authority at least seven (7) days prior to the submission opening date. Three (3) copies of any pre-opening protests must be delivered to Reno-Sparks Convention & Visitors Authority, 4001 South Virginia Street, Suite G, Reno, Nevada 89502, Attention: Jeff Jensen. All protests must be in writing to be considered, and shall specify in detail the grounds for the protest and the facts and law supporting the protest. All pre-opening protests will be resolved by the Authority prior to the submission opening. The Authority Finance Department will issue a written decision specifying the grounds for granting or denying the pre-opening protest. If a protest is granted, the proposed opening date may be postponed and an Addendum issued or, at the sole discretions of the Authority, the Authority may cancel the bid. If the protest is denied, submissions will be received and opened on the scheduled opening date in the same manner as if no protest had been filed.

Appeal by Unsuccessful Bidder: Any protest from an unsuccessful proposer must be submitted prior to award by the Board as established in NRS 332.068. Bidder must submit a written appeal in accordance with the requirements set forth herein to the Finance Department within five business days from the date of the letter notifying of intent to award.

The appellant must post a bond with the written appeal with good and solvent surety authorized to do business in the State of Nevada in an amount equal to 25% of the value of the contract in order to have their appeal heard by the Board. Any and all bonds are subject to the approval of the Board’s Attorney. In the event the appeal is not upheld by the Board, a claim may be made against the bond in an amount equal to the expenses incurred and other monetary losses suffered by the Authority because of the unsuccessful appeal.

The route of appeal is the Director of Finance then the President/CEO, or designee, and must be followed sequentially. No Bid protests will be heard by the Board unless the proposer has followed the appeal process route.

Claims Against Protest Bonds:

The Authority shall not make a claim upon any bond or other security unless and until the basis of that claim is considered and approved by the Board. The Authority may:

- Claim its regular staff time and costs in processing, considering and/or defending against an award protest.
- Claim any necessary extraordinary staff overtime incurred in processing, considering and/or defending against an award protest.
- Claim the Authority's Attorney time and costs in processing, considering and/or defending against an award protest.
- Claim any resulting fees and costs incurred to any independent contractors, consultants or contracted attorneys utilized in processing, considering and/or defending against an award protest.
- Claim any lost expenditure savings, lost revenue and other consequential financial damages resulting from the protest's automatic stay of the award of an Agreement to a selected solicitation response.
- Claim any lost gifts, lost grants or other lost government or private financial participation resulting from any delay caused by the protest's automatic stay of the award of an Agreement to a selected solicitation response.

Protest Bond Risk Inquiry—Procedure:

As soon as possible after an award protester has posted a protest bond or other security, the soliciting Authority department or agency shall provide a written non-binding estimate of the basis of potential claims unique to the circumstances of the Agreement award(s) stayed by the protest, without disclosing any bid information that must remain confidential until an award decision is final. From this estimate, the protester shall be responsible for calculating the risk(s) of proceeding with a protest to a final decision by the Board. A protester may withdraw a protest in writing at any time prior to a decision of the Board, but any withdrawal more than seven (7) calendar days after the issue date of the Authority's estimate of the basis of potential claims shall, upon Board's approval of the claims, be subject to claims against the bond or other security of the withdrawing protestor prior to its return to the protester.

Z. Signature

All bids shall be signed and the title and Bidder name indicated. A bid by a corporation shall be signed by an authorized officer, employee or agent with his or her title.

AA. Submission of Responses

The Authority assumes no responsibility for errant delivery of responses, including those relegated to a courier agent who fails to deliver in accordance with the submission time/date and address requirements.

The Authority will not be responsible for the premature opening of responses, which are not properly addressed or identified.



The Authority will not accept a response submitted by telephone, telegraphic notice, facsimile, or e-mail.

Bidder will furnish the required information typed or written in ink.

The person signing the response must initial erasures or other changes in ink.

In the spaces provided, a duly authorized representative of the Bidder will sign this Bid document.

Bidder will proofread its response carefully for errors.

In the event of a difference between written words and figures, the amount stated in written words will govern.

In the event of a difference between unit price and extended price, the unit price will govern.

The Authority is not liable for any costs incurred by Bidder prior to entering into the final Agreement. Costs of developing the qualifications or any other such expenses incurred by the Bidder in responding to this Bid, are entirely the responsibility of the Bidder, and shall not be reimbursed in any manner by the Authority.

Respondent shall be responsible to ensure they have complied in all respects with the provisions of NRS 338.141 regarding listing of general contractors and/or subcontractors who will perform any work on the project. Failure of Respondent to comply with the provisions of NRS 338.141 will result in rejection of Respondent's bid.

Respondent shall bear the responsibility to ascertain the relevancy of the "preference for certain contractors" referenced in NRS 338.147. Respondents claiming preference shall submit with their Bid the "Certificate of Eligibility" issued by the State of Nevada Contractor's Board as proof of Contractor's compliance with the provisions of NRS 338.147. Failure to submit the Certificate of Eligibility with the sealed Bid shall result in the waiver of any bidder preference. In the event Respondent claims a bidder preference pursuant to NRS 338.147, the RSCVA strongly encourages Respondent to deliver to the RSCVA an affidavit satisfying the requirements of NRS 338.0117 with the Bid response. However, pursuant to NRS 338.147(2)(a)(3) the Respondent may deliver the foregoing affidavit up to two (2) hours after the opening of the bids, all as set forth in NRS 338.147(2)(a)(3). Failure to timely submit the foregoing affidavit shall result in a waiver of any bidder preference.

Bidder has carefully examined the specifications, and all provisions relating to the item(s) to be furnished or the work to be done; understands the meaning, intent, and requirements.



BB. Tax Exemption

The Authority is a tax exempt public entity and is not generally subject to federal excise, state, or local taxes. The Authority is specifically limited in its payment of sales tax per NRS 372.325. No additional taxes may be added or "passed through" as a result of any agreement.

CC. Venue

This agreement shall be governed by and interpreted according to the laws of the State of Nevada, and venue for any proceeding shall be in Washoe County.

DD. Withdrawal of Bids/Proposals

Bids/Proposals may be withdrawn by written or facsimile notice received prior to the exact hour and date specified for receipt of bid. A bid/proposal may also be withdrawn in person by a Bidder, or Bidder's authorized representative, prior to the exact hour and date set for receipt of bids. Telephone withdrawals are not permitted.



XIII. BASE BID FORM

Project: 2020-01, PWP-WA-2019-268

Project Title: Reno-Sparks Convention Center Hall 3 Roof
Replacement Section A and B
4590 S. Virginia Street
Reno, Nevada 89502
Project No. 19RENRENOR009B

Owner: Reno-Sparks Convention and Visitors Authority
4001 S. Virginia Street, Ste G
Reno, Nevada 89502

Trent LaFerriere
Telephone No. 775.827.7709
E-mail: TLaFerriere@renotahoeusa.com

Roofing Consultant: Benchmark, Inc.
6065 Huntington Court NE
Cedar Rapids, IA 52402

Doug Henkel
Telephone No. 319.393.9100
E-mail: dhenkel@benchmark-inc.com



BID FORM

To: Reno-Sparks Convention and Visitors Authority

Name of Bidder: _____

Date of Bid: _____

1.01 Pursuant to and in compliance with the Invitation to Bid and the Bidding Documents relating to the construction of:

2020-01-PWP-WA2019-268 Reno-Sparks
Convention Center Roof Replacement Hall 3 -
Section A and B
Reno, Nevada 89502
Project No. 19RENRENOR009B

Including Addenda _____

The undersigned, having become thoroughly familiar with the terms and conditions of the Bidding Documents and with local conditions affecting the performance and cost of the work at the place where the work is to be completed and after having been given ample opportunity to fully inspect the site in all particulars, hereby proposes and agrees to fully perform the work within the time stated, including furnishing any and all labor, materials, services, equipment and all applicable taxes necessary to construct and complete said work in accordance with the Contract Documents, for the following sum(s) of money:

A. Base Bid: Perform roof replacement per the drawings and specification.

_____ Dollars (\$ _____)

Approximate square footage included in bid _____ Sq. Ft.

B. Unit Pricing

1. For changing specified quantities of work from those required by the Contract Documents, upon written instructions of the Owner, the following unit prices shall prevail. The proposed unit prices include all labor, overhead, profit, materials, equipment, taxes, and freight.



2. Only a single unit price shall be given, and it shall apply for either more or less than the quantity required by the Contract Documents.
3. Refer to Section 01 11 00 – Summary of Work for a description of stipulated quantity allowances to be included in the bid, where applicable.
4. In the event of more or less units than so required, change orders shall be issued for the increased or decreased amount.

<u>Description</u>	<u>Unit Price</u>
Add/delete wood nailer	\$ _____ Per Board Foot
Remove and replace wood nailer	\$ _____ Per Board Foot
Install walkway as specified	\$ _____ Per Linear Foot
Remove and replace steel decking	\$ _____ Per Square Foot
Wire brush, clean, and prime paint surface rusted steel decking	\$ _____ Per Square Foot
Tear off existing wet or damaged 1/4" per foot tapered insulation (1/2" to 1 1/2" panels)	\$ _____ Per Square Foot
Tear off existing wet or damaged 1/4" per foot tapered insulation (1 1/2" to 2 1/2" panels)	\$ _____ Per Square Foot
Tear off existing wet or damaged 2" polyisocyanurate insulation	\$ _____ Per Square Foot

C. Performance Bond and Payment Bond

1. This bid includes the cost of a Performance Bond and Payment Bond. By signing and submitting this bid, the Bidder certifies that they will furnish these bonds in amounts sufficient to cover the total proposed cost of the work, including Base Bid and all Alternates. The bonds shall be amended and maintained current with all contract Change Orders.
2. The cost of these bonds is _____% of the total proposed cost of the work, including Base Bid and all Alternates.

D. Bid Bond

1. Accompanying this bid is a bid bond as specified in Section **XI**. Instructions to Bidders, payable without condition to the Owner, equaling no less than 5% of the total proposed cost of the work, including the Base Bid and all Alternates. It is agreed that the bid security will be the measure of liquidated damages which the Owner will sustain by failure, neglect, or refusal of Bidder to deliver the signed contract, bonds, and required insurance documentation within ten days after notification of contract award is made by the Owner.

E. Change Orders

1. The following fees shall be used for lump sum pricing and actual cost pricing of additions and deletions to the work required by the Contract Documents. The following fees are not applicable for unit price-based change orders; and shall not be applied to hourly rates or pricing to which overhead and profit have been included, or to taxes.
 - a. For any additions to the work authorized by the Owner:

The contract sum shall be revised to include the actual cost of the work required for such additions plus
percent (____%).
 - b. For deletions from the work authorized by the Owner:

The contract sum shall be reduced by an amount equal to the cost savings realized for work not performed by reason of such deletions plus
_____ percent (____%).

F. Time of Commencement, Completion and Damages

1. Base Bid: Contractor shall commence work _____ (calendar) days after award. From the day of commencement, the Contractor shall substantially complete the work in _____ (calendar) days.
2. Final completion, including delivery of all closeout submittals and warranties, shall be achieved within _____ (calendar days) after achieving substantial completion.
3. Time is expressly declared to be of the essence in completion of the work covered by these Bidding Documents, and the Contractor shall be liable for actual damages for delay in completion of work. Actual damages



include, but are not limited to, increased consulting fees, additional construction observation fees, travel expenses, and all other costs incurred as a result of the delay in completion. Where the contract allows additional time for completion of the work, the new time limits will be of the essence of the contract.

4. In submitting this bid, the Bidder assures the Owner that availability of labor, material, equipment, services, and other necessary resources are available to meet the proposed substantial completion date.

1.02 By signing this bid, the Bidder certifies the following:

- A. All information submitted on this bid form is accurate and true to the best of the Bidder's knowledge, and the Bidder has performed due diligence as necessary to provide responsible information.
- B. This bid has been arrived at independently without consultation, communication or agreement as to any matter relating to this bid with any other Bidder or with any competitor.
- C. This bid is in compliance with all local, state, and applicable codes.
- D. The Bidder and any proposed Subcontractors are duly licensed with all applicable authorities having jurisdiction, as required to legally perform the work described by the Bidding Documents at the project location.
- E. The Bidder will maintain strict confidentiality with respect to information submitted on this bid form, any project-related documents obtained during the bidding process, photographic or video images of the site, project-related emails or other correspondence, or information learned through visual review of the facility or project site.
- F. Bidder will comply with the terms of any confidentially agreements made with the Owner during the bidding of this project, as applicable.
- G. This bid shall remain open and not be withdrawn for a period of 90 calendar days from the date prescribed for its opening.
- H. If the Owner provides written notice of award to the undersigned within 90 calendar days, the Bidder shall execute and deliver the signed contract agreement, Performance Bond, Payment Bond, required insurance documentation, and any other submittals as specified in the Bidding Documents, together, all within ten calendar days after the Owner issues the notice of award.
- I. The Bidder is an equal opportunity employer, and does not discriminate, and will take "affirmative action" measures to ensure against discrimination in



employment, recruitment, advertisements for employment, compensation, termination, upgrading, promotions, and other conditions of employment against any employee or job applicant on the bases of race, creed, color, national origin, sex, or any other legally protected characteristics. No person will be adversely affected in employment with the employer as a result of bringing complaints of unlawful discrimination.

J. The Bidder provides a work environment that is free from harassment based upon an individual's sex, race, ethnicity, national origin, age, religion or any other legally protected characteristics. All employees, including supervisors and other management personnel, are expected and required to abide by this policy. No person will be adversely affected in employment with the employer as a result of bringing complaints of unlawful harassment.

1.03 By signing this bid, the Bidder implies their understanding of the following conditions:

- A. The Owner reserves the right to reject any and all bids, waive irregularities or technicalities in any bid, and accept any bid in whole or in part which it deems to be in its best interest.
- B. If notice of award is issued after 90 calendar days from the bid due date, the Bidder shall have the right to either accept the contract or withdraw their bid, without penalty.

1.04 The name(s) and title(s) for all persons interested in the foregoing bid as principal(s) are:

Note: If Bidder is a corporation, provide names of president, controller, and secretary; if a partnership, and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full.

Name	Title
_____	_____
_____	_____
_____	_____
_____	_____

1.05 Notice of award or requests for additional information may be addressed to the undersigned at the address set forth below.

1.06 The Legal Name, State of Incorporation, Address, Contact Information, and Federal Tax Identification Number for the Bidder are:



Note: *If Bidder is a corporation, provide legal name of corporation, state where incorporated, together with the address and contact information and signature of the officer authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, provide legal name of firm, together with the address and contact information and signature(s) of the partner(s) authorized to sign contracts on behalf of the partnership.*

Legal Name of Bidder:

State of Incorporation:

Business Address:

Telephone Number:

E-mail Address:

Federal Tax ID Number:

1.07 Signature of Authorized Bidder Representative

Signature:

Typed Name:



Title: _____

Date: _____

-End of Section-



XIV. RENO-SPARKS CONVENTION AND VISITORS AUTHORITY – 5% BID BOND

KNOW ALL MEN BY THESE PRESENTS: That we the undersigned

_____, as "Principal," and
_____, as "Surety," are
hereby held and firmly bound unto the Reno-Sparks Convention And Visitors Authority,
as "Obligee," in the penal sum of
_____ dollars (\$_____) for the payment of which, well and truly to be
made, the Principal and Surety bind themselves, their heirs, executors, and
administrators, successors and assigns, jointly and severally, by this instrument. The
condition of the obligation of this bid bond is as follows:

WHEREAS, NRS 332.105 authorizes local governments to require bid bonds to insure
execution and proper performance of the Contract and the Bonding Company has an
"A" or better rating with Moody's or A.M. Best and T-Listed with the U.S. Treasury
Department;

AND, WHEREAS, the Principal has submitted a bid for Bid # **2020-01 PWP-
WA-2019-268** for the **RENO-SPARKS CONENTION CENTER HALL 3 ROOF
REPLACEMENT SECTION A & B.**

NOW, THEREFORE,

- (a) If said Bid shall be rejected; or
- (b) If said Bid shall be accepted and the Principal shall execute and deliver the
contract in the bid documents ("Contract") to Obligee in accordance with
the terms of the bid documents, and give such bond or bonds as may be
specified in the bid or contract documents with good and sufficient surety
for the faithful performance of such Contract and for the prompt payment
of labor and material furnished in the prosecution thereof; or
- (c) If the Principal shall pay to the Obligee the full amount of the bid bond as a
penalty irrespective of the Obligee's actual damages in the event of the
failure of the Principal to enter into such Contract and give such bond or
bonds,

then, this obligation shall be null and void. Otherwise it shall remain in full force and
effect, it being expressly understood and agreed that the liability of the Surety (but
not of the Principal) for any and all claims hereunder shall, in no event, exceed the
penal amount of the obligation as herein stated.

The Surety, for the consideration for which this bond was executed, hereby stipulates
and agrees that the obligations of said Surety and its bond shall be in no way impaired
or affected by any extension of the time within which the Obligee may accept such
bid, and hereby waives notice of any such extension.



IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and the Surety has caused their seal to be hereto affixed and these present to be signed by their proper officers.

Signed, Sealed and dated: _____

Principal
By: _____

Surety
By: _____

PROJECT MANUAL
INCLUDING SPECIFICATIONS
FOR ROOFING OF

RENO-SPARKS CONVENTION
CENTER HALL 3 ROOF REPLACEMENT
SECTION A AND B
4590 S. VIRGINIA STREET
RENO, NEVADA 89502
BID NO. 2020-01 PWP-WA-219-268
PROJECT NO. 19RENRENOR009B

CONSULTANT:

*BENCHMARK, INC.
DOUG HENKEL
6065 HUNTINGTON COURT NE
CEDAR RAPIDS, IA 52402
319.393.9100*

ADDRESS ALL COMMUNICATIONS
REGARDING THIS WORK TO THE
CONSULTANT AT THE
ADDRESS LISTED ABOVE.

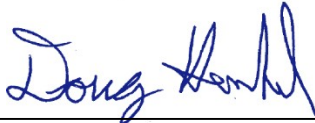
PROJECT
MANUAL
DATE 6/10/2019

OWNERSHIP OF DOCUMENTS

These Bidding Documents, and the ideas, drawings and specifications incorporated herein, as an instrument of professional service, is the property of Benchmark, Inc., and is not to be used, in whole or in part, for any other project without the written authorization of Benchmark, Inc.

These Bidding Documents were prepared for Reno-Sparks Convention and Visitors Authority by:

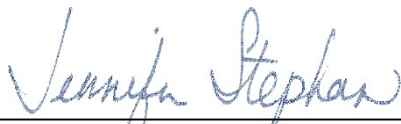
BENCHMARK, INC.



Doug Henkel
Senior Consultant

and reviewed by:

BENCHMARK, INC.



Jennifer Stephan, RRC, CDT
Senior Consultant

TABLE OF CONTENTS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

- 00 01 01 COVER
- 00 01 02 OWNERSHIP OF DOCUMENTS
- 00 01 10 TABLE OF CONTENTS

RENO-SPARKS CONVENTION & VISITORS AUTHORITY 2019 ROOF REPLACEMENT - HALL 3,
SECTIONS A AND B INSTRUCTIONS AND BID FORM

DIVISION 01 – GENERAL REQUIREMENTS

- 01 11 00 SUMMARY OF WORK
- 01 30 01 PROJECT ADMINISTRATION
 - PRECONSTRUCTION DAMAGE REPORT
 - DAILY PROGRESS REPORT
- 01 33 24 SCHEDULE OF PRE-JOB SUBMITTALS
- 01 35 13 SPECIAL PROJECT PROCEDURES
- 01 35 24 CONSTRUCTION PROJECT SAFETY
- 01 78 36 WARRANTIES

DIVISION 02 – EXISTING CONDITIONS

- 02 41 20 ROOF DEMOLITION AND CLEANUP

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

- 06 10 53 MISCELLANEOUS ROUGH CARPENTRY

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

- 07 21 16 BATT INSULATION
- 07 22 16 ROOF BOARD INSULATION
 - 07 22 16.01 ROOF BOARD INSULATION – INDUCTION WELDED SYSTEM
 - 07 54 19.02 ADHERED PVC THERMOPLASTIC MEMBRANE ROOFING

07 54 19.05 INDUCTION WELDED PVC THERMOPLASTIC MEMBRANE ROOFING

07 62 00 SHEET METAL FLASHING AND TRIM

ROOF PLAN(S) AND DETAIL DRAWINGS

SECTION 00 01 11

PROJECT DIRECTORY

PROJECT TITLE: 2020-01 PWP-WA-2019-268 Reno-Sparks
Convention Center Hall 3 Roof Replacement
Section A and B
4590 S. Virginia Street
Reno, Nevada 89502
Project No. 19RENRENOR009B

OWNER: Reno-Sparks Convention and Visitors Authority
4001 S. Virginia Street, Ste G
Reno, Nevada 89502

Trent LaFerriere
Telephone No. 775.827.7709
E-mail: TLaFerriere@renotahoeusa.com

ROOFING CONSULTANT: Benchmark, Inc.
6065 Huntington Court NE
Cedar Rapids, IA 52402

Doug Henkel
Telephone No. 319.393.9100
E-mail: dhenkel@benchmark-inc.com

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. This section is for the convenience of the Contractor only and shall not be construed as a complete accounting of all work to be performed.
- B. The extent of the scope of work is indicated on the drawings and by the requirements of each section of the specifications.
- C. The Contractor shall examine the site and shall be responsible for verifying all existing construction and conditions.
- D. Refer to additional notes on the drawings.

1.02 Code Compliance

- A. The completed roof system shall meet the following requirements:
 - 1. Building Code: 2018 International Building Code.
 - 2. External Fire Rating: UL Class A external fire rating.
- B. The completed roof system shall meet the following design wind load pressures:
 - 1. Field Prime: - 30.74 psf
 - 2. Field: - 53.51 psf
 - 3. Perimeters: - 70.59 psf
 - 4. Corners: - 96.24 psf
- C. The installed copings shall comply with ANSI/SPRI ES-1 Standards and shall meet the following design wind pressures:
 - 1. Horizontal: 38 psf perimeters and 48 psf corners
 - 2. Vertical: 66 psf perimeters and 100 psf corners

1.03 Quality Assurance by Roof System Manufacturer

- A. Membrane Manufacturer's Technical Representative, who shall be a full-time employee of the membrane Manufacturer, shall provide on-site training and quality assurance in conjunction with the beginning of membrane installation.
- B. During each visit, the Manufacturer's Technical Representative shall check all work installed since the last visit, mark all defects for repair, and provide a written site visitation report listing any deficient work requiring correction by the Contractor. All reports and other correspondence associated with the site visit shall be provided to the Contractor and Consultant within three business days of the visit.
- C. The Manufacturer's Technical Representative shall coordinate all site visits with the Contractor and Owner's Representative a minimum of three business days in advance.

1.04 Applicability of Manufacturer Requirements During Bidding and Construction

- A. The contract documents may require materials or installation practices that exceed the Manufacturer's minimum requirements for the specified warranty. The requirements of the contract documents supersede the Manufacturer's requirements in these instances. These requirements may not be altered during bidding or installation of the work, unless formal modifications are issued during bidding or construction by the Owner or Owner's Representative.
- B. If the Manufacturer's minimum requirements for the specified warranty require practices that exceed the requirements of the contract documents; or if the contract documents do not reference a Manufacturer's requirement pertinent to successful performance of the work, the associated Manufacturer's requirements shall be followed in these instances.
- C. The Manufacturer's requirements may contain more detail about work execution-related procedures than the contract documents. Where these additional requirements do not conflict with the contract documents, they shall guide the performance of related aspects of the work.

1.05 Quality Assurance by Induction Fastening System Manufacturer

- A. All reports and other correspondence associated with the site visit shall be provided to the Contractor and Consultant within three business days of the visit.
- B. The Technical Representative(s) shall coordinate all site visits with the Contractor and Owner's Representative a minimum of three days in-advance.
- C. Induction Fastening System Manufacturer's Technical Representative, who shall be a full-time employee of the Manufacturer, shall provide on-site training and quality assurance in conjunction with the beginning of insulation attachment and membrane installation. The Manufacturer's Technical Representative shall then visit the site to provide quality assurance and follow-up training a minimum of every two weeks thereafter.
- D. During each visit, the Manufacturer's Technical Representative shall check all work installed since the last visit, mark all defects for repair, and provide a written site visitation report listing any deficient work requiring correction by the Contractor.

PART TWO – PRODUCTS**2.01 Not used.****PART THREE – EXECUTION****3.01 Demolition and Roof Preparation**

- A. Coordinate all aspects of demolition work with Owner's Representative and all other trades.
- B. Provide protective measures around the roof and building as specified, prior to beginning work.
- C. Water test all drains to ensure proper operation prior to beginning work.
- D. At metal deck areas, tear off existing single-ply membrane and underlying gypsum board.

- E. Tear off existing roof insulation to the polyethylene sheeting at wet or damaged insulation areas. Include 10,000 square feet of 2.0" polyisocyanurate insulation in the bid. Include 10,000 square feet of 1/4" per foot tapered polyisocyanurate insulation, minimum thickness 1/2" to 1 1/2" and 1 1/2" to 2 1/2" in equal numbers. For anything additional, or if less is needed, provide unit cost so adjustments can be made.
- F. At concrete deck areas, tear off existing roof system to the concrete deck. Save 5/8" existing gypsum board and dry undamaged tapered polyisocyanurate insulation system for reuse.
- G. Remove fasteners at existing membrane, insulation, carpentry, flashing terminations, and sheet metal components by backing out, whenever possible.
- H. Tear off all base flashings. Prepare all substrates as required by the Manufacturer of the replacement flashings.
- I. Remove deteriorated wood nailers located during post-tear-off inspection. Perform this work on a unit cost basis.
- J. Remove existing deteriorated steel decking as determined during post-tear-off decking inspection. Perform this work on a unit cost basis.
- K. Seal all perimeters, penetrations, and drains as required to prevent construction materials from entering the building.
- L. Remove and dispose of existing roof-related sheet metal, unless noted otherwise on the drawings.
- M. Remove all debris, broom clean at a minimum, prior to beginning roof system application.
- N. Clean existing drains down to the cast iron surface and prepare drains for membrane roofing. Remove broken drain bolts from drain castings where required.
- O. Remove debris from roof area and properly dispose of all materials off site.
- P. At the end of each day, ensure that all drains are in proper working order and that drain lines are totally unrestricted. Implement any required corrective measures before leaving the job site that day.

3.02 Recycling

- A. Base Bid: Perform mandatory recycling as specified in Section 02 41 20 - Roof Demolition and Cleanup.

3.03 Decking Repair/Replacement

- A. Replace deteriorated decking as specified. Perform this work on a unit cost basis.
- B. Clean, wire brush, and prime paint surface rusted steel decking encountered during post tear-off inspection of the decking. Perform this work on a unit cost basis.

3.04 Rough Carpentry

- A. Install replacement wood nailers/plywood where deteriorated components were removed. Perform this work on a unit cost basis.

- B Refasten existing nailers/plywood to building structure as required to meet the specified standards.
- C. Install wood nailers as shown on the drawings.
- D. Install wood nailers for curb extensions as required for minimum curb height of 8".
- E. Install plywood as shown on the drawings.

3.05 Miscellaneous Insulation

- A. Install fiberglass batt insulation in polyethylene saddle at expansion joints.

3.06 Rigid Insulation

- A. Install roof insulation and means of attachment per drawings and specifications.
- B. In spot tear-off areas, install replacement insulation level with existing roof insulation. Perform this work on a unit cost basis.
- C. Install replacement tapered insulation and means of attachment per drawings and specifications.

3.07 Low Slope Roofing Membrane and Flashings

- A. Install adhered, reinforced PVC single-ply membrane system.
- B. Install induction welded, reinforced PVC single-ply membrane system.
- C. Install PVC flashings at all perimeters and penetrations.
- D. Install walkway as shown on drawings. Include this work in the bid. Install any additional locations of walkway as directed by the Owner's Representative on a unit cost basis.

3.08 Roof-Related Sheet Metal

- A. Install roof-related sheet metal components as per drawings and specifications.
- B. Reuse existing sheet metal where specifically noted as such on the detail drawings.
- C. Provide all necessary sealant primers, sealants, sealant tapes and fasteners to ensure a watertight installation.
- D. Install membrane clad metal flashings, fasteners, aluminum tape, and heat welded membrane strip flashings per the drawings and specifications.

3.09 Plumbing Work

- A. Free any clogged drains or drain piping.
- B. Replace all missing, damaged, plastic, or improperly fit drain strainers, and/or clamping rings. All replacement drain strainers shall be cast iron strainers and shall fit with clamping rings. All replacement clamping rings shall be cast iron and shall properly fit with existing drain bowls.
- C. Install replacement drain bolts. Remove any broken bolts from drain castings, and prepare existing bolt sockets by retapping, where required.

- D. Clean, prime, and paint drain rings and drain strainers, as follows:
- Surface preparation: Remove all old sealants, debris; and loose rust and loose paint using power-assisted hand tools and/or solvents.
- Primer: Apply one coat of Sherwin Williams Pro-Cryl Universal Primer, or approved equal
- Finish Coat: Apply one coat of Sherwin Williams Zero VOC Acrylic, Semi-Gloss, or approved equal
- E. Functional clamping ring and drain strainer shall be installed at each drain during the same workday as membrane installation.

3.10 Mechanical Work

- A. Disconnect and reconnect rooftop mechanical units as required for lifting.
- B. Disconnect ductwork as necessary for lifting units.
- C. Extend ducts as required for raising curbs to finished elevations.
- D. Reconnect ductwork as required for proper operation.

3.11 Electrical Work

- A. Disconnect and reconnect rooftop mechanical units as required for lifting.
- B. Unfasten and reattach conduits for proper installation of the roofing system.
- C. Contractor is to inspect the underside of the deck for electrical conduit within the flutes. Contractor is responsible to locate, mark and avoid penetrating the conduits with fasteners.
- D. Contractor is to hire an electrician to locate and mark all conduits located above the roof deck prior to beginning construction.

3.12 Quantity Allowances

- A. The bid and contract price shall include the following stipulated quantity allowances, to be adjusted by unit costs proposed by the Contractor at the time of bidding.
- | | | |
|----|---|--------------------|
| 1. | Tear off existing wet or damaged 1/4" per foot tapered insulation (1/2" to 1 1/2" panels) | 5,000 Square Feet |
| 2. | Tear off existing wet or damaged 1/4" per foot tapered insulation (1 1/2" to 2 1/2" panels) | 5,000 Square Feet |
| 3. | Tear off existing wet or damaged 2" polyisocyanurate insulation | 10,000 Square Feet |

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. This section outlines the administrative procedures and requirements in effect under this contract. The Contractor shall advise all their administrative personnel, field personnel, and subcontractors of the requirements of this section.
- B. If a given requirement of this section contradicts a requirement of any Owner-furnished Division 00 or 01 documents, the Owner-furnished requirement take precedence.

PART TWO – PRODUCTS**2.01 No products are required in this section.****PART THREE – EXECUTION****3.01 Project Meetings**

- A. Preconstruction Meeting
 - 1. Preconstruction meeting will be scheduled within 14 days after the Owner has issued notice to proceed. Attendance by authorized representatives of the Contractor and all major subcontractors is required. The Owner's Representative will advise other interested parties and request their attendance, unless the specifications assign this responsibility to others.
 - 2. Minimum Agenda – Distribute data on and discuss:
 - a. Organizational arrangement of Contractor's forces and personnel and of subcontractors, material suppliers, and Owner.
 - b. Channels and procedures for communication.
 - c. Review of Contractor's preliminary construction schedule including sequence of critical work.
 - d. Scheduling of project meetings.
 - e. Status of submittals, shop drawings and other data submitted to the Owner for review.
 - f. Invoicing procedures, schedule of values, unit prices, and quantity allowances.
 - g. Contractor's daily reports and unit price work tracking/verification.
 - h. Processing of field decisions and change orders.
 - i. Rules and regulations governing performance of the work.
 - j. Logistics, staging, access, parking, protection, rain day activities, interior responsibilities, and other related matters.

- k. Procedures for safety and first aid, security, emergency procedures, housekeeping, and other related matters.
 - l. Manufacturer inspections and quality control
 - m. Final inspection and project closeout
 - n. Review of project manual and drawings
- B. Progress Meetings
- 1. Progress meeting shall be held in conjunction with site visits by the Project Consultant (Owner's Representative) when requested by the Owner, Project Consultant, or Contractor.
 - 2. To the maximum extent practicable, the Contractor shall assign the same person or persons to represent the Contractor and major subcontractors at project meetings throughout progress of the work. Subcontractors, material suppliers, and others may be invited to attend those project meetings in which their aspects of the work are involved.
 - 3. Typical Agenda
 - a. Review, revise as necessary, and approve minutes of previous meeting.
 - b. Review progress of the work since last meeting including status of submittals for review.
 - c. Identify problems that impede planned progress.
 - d. Develop corrective measures and procedures to regain planned schedule.
 - e. Complete other current business.
 - 4. The proceedings of these meetings will be recorded by the Owner's Representative. Each required representative at the meetings, in addition to the Owner, will be furnished one copy of the meeting minutes.
 - 5. The Owner's Representative conducting meetings, recording and distributing meeting minutes on behalf of the Owner will not be construed as coordinating or scheduling Contractor's work.

3.02 Submittals

- A. Submittal Requirements
- 1. Transmit each submittal with transmittal letter indicating date, project title, project number, Contractor's name and address and description of content.
 - 2. Required submittals are listed in Section 01 33 24 – Schedule of Pre-Job Submittals.
 - 3. Submittal requirements are found here and in the technical sections of the specifications. Contractor shall complete submittals as required by the Contract Documents and revise and resubmit as necessary to establish compliance with the specified requirements.

4. Prior to each submittal, Contractor shall carefully review and coordinate all aspects of each item being submitted, and check each submittal to verify conformance with the requirements of the Contract Documents. Certify this coordination has been performed by affixing the Contractor's review stamp and signature to each submittal.
 5. Contractor shall electronically transmit submittals to the Owner's Representative, as Portable Document Format (PDF) files. **Contractor shall not secure and password protect electronic files.**
 6. Submittals shall be organized in the Portable Document Format (.pdf) file with a divider page for each section of the specifications, as indicated on the schedule of pre-job submittals. All submittals required under each tab shall be placed in the same order as indicated on the schedule. The Contractor's transmittal letter shall be provided as the first page of the document.
 7. Delays caused by tardiness in receipt of submittals, or caused by not providing submittals in the specified format, will not be an acceptable basis for extension of the contract completion date.
 8. Review by the Owner's Representative will not be construed as a complete check but only that the general method of construction and detailing is satisfactory. Review will not relieve the Contractor from responsibility for errors that may exist.
 9. The Owner reserves the right to delay the project start and/or withhold payment until pre-job submittals are complete and reviewed.
- B. Submittal Schedule
1. Contractor shall transmit submittals allowing the Owner's Representative 14 calendar days of review time. All submittals shall be made far enough in advance of scheduled dates for installation to provide all time required for reviews, for possible revisions and resubmittals, and for placing orders and securing delivery.
- C. Shop Drawings and Coordination Drawings
1. Submitting shop drawings is a project requirement. Shop drawings are required for:
 - a. Any proposed deviations from project drawings (submittal does not constitute approval). Clearly mark all such deviations as "proposed change to Contract Documents."
 - b. Tapered insulation layout, cross sections of profiles, and details of fabrication.
 - c. Sheet metal fabrication, metal type and gauge, joining methods, fastener types, fastener placement, and sealant joint installation.
 - d. As required elsewhere in the Contract Documents.
 2. Shop drawings shall have the following attributes:
 - a. All shop drawings shall be of sufficient scale to show all pertinent aspects of the item.
 - b. Provide one copy of each sheet.

- c. Shop drawings shall show dimensions of fabricated items, joining methods, fastener type and frequency, and relationships of building components.
 - d. Shop drawings shall show more detail, not less, than the Contract Documents.
- D. Manufacturer's Literature
 - 1. Submit Manufacturer's literature for materials being incorporated into the work. Where contents of submitted literature from Manufacturer include data not pertinent to the submittal, clearly indicate which portion of the contents is being submitted for review.
- E. Samples
 - 1. Samples need not be submitted for items specified by product name and Manufacturer unless a decision is required regarding color, style, or finish. Samples shall be of the precise article proposed to be furnished.
 - 2. Unless the precise color is specifically described in the Contract Documents, submit accurate color charts to the Owner's Representative for review and selection whenever a choice of color is available in a specified product.
 - a. If providing electronic submittals, provide supplemental color charts and/or physical material samples for color selection under separate cover. Color selections will not be determined from electronic versions of color charts or samples, unless specifically allowed by the Owner's Representative.
 - b. Unless otherwise specified, submit two copies and/or samples.
 - 3. Submit other samples as called for in individual specification sections.
- F. Notice of Award/Guarantee Application
 - 1. Submit copy of notice of award or guarantee application to the roof system Manufacturer.
 - a. All project information shall be accurately and completely filled out by the Contractor and shall be based on the specified requirements.
 - b. Roof section identification references (e.g. numbering or lettering tags) shall match those referenced in the Contract Documents so the Manufacturer's records and final warranty documents are properly coordinated with the project areas.
 - c. Benchmark, Inc. shall be noted as the designer of record where this information is requested on the Manufacturer's forms.
 - 2. When available, submit Manufacturer's written approval of notice of award or guarantee application.
 - a. Prior to submitting this information to the Owner's Representative for review, Contractor shall review for conformance with the requirements of the Contract Documents and coordinate the revision of any deviations.

- G. Substitutions
1. Do not substitute alternative products, equipment, or installation procedures unless allowed by the Contract Documents, and then only after the Owner's Representative has provided written authorization.
 2. Evaluation of proposed substitutions will be based on the standards of quality established in the Contract Documents. If standards are not referenced, then the current published standards by the Manufacturer of the basis of design project shall be used for comparison of proposed substitutions.
 3. As part of any proposed substitution, the Contractor shall furnish a detailed and complete analysis and comparison of the proposed product(s) and/or system(s) to the associated basis of design product(s) or system(s).
 4. Substitutions shall be proposed during the project bidding process, at least seven days prior to the established bid due date. No guarantee of approval of any proposed substitutions is implied, unless documented by an Addendum to the Contract Documents during the bidding process.
 5. Where the phrase "or equal" or "or Owner approved equal" occurs in the Contract Documents, do not assume alternative materials, equipment, or installation procedures will be approved as equal, unless the Owner's Representative has authorized the substitution.
 6. The decision of the Owner's Representative will be final.
- H. Contact/Subcontractor List
1. Submit contact list to the Owner's Representative.
 2. The contact list shall include the following information for the Contractor and all subcontractors:
 - a. Trade
 - b. Company Name and Address
 - c. Project Manager
 - d. Field Supervisor
 - e. Safety Manager
 - f. Telephone Numbers
 - g. Fax Numbers
 - h. Cellular/Pager Number
 - i. E-mail Addresses
 - j. Two 24-Hour Emergency Contact Phone Numbers
 - k. Safety Director 24-Hour Emergency Contact Phone Number

- I. Building Permit
1. The Contractor shall secure a building permit and arrange for all applicable third party services and inspections required by authorities having jurisdiction. The Contractor shall deliver to the Owner a copy of the final approval of the permit.
 2. If a building permit is not necessary, the Contractor shall provide a letter of explanation with the project submittals, with supporting documentation from authorities having jurisdiction.
- J. State License
1. Submit photo copy of Contractor's and Subcontractor's state license.
 2. If the state in which the project is located does not license Contractors, the Contractor shall provide a letter of explanation with documentation.
- K. Payment Application and Schedule of Values
1. Submit proposed payment application and schedule of values to be used in project invoicing.
 2. Payment application shall be provided on AIA Document G702, unless otherwise directed or approved by the Owner.
 3. Schedule of values shall be provided on AIA Document G703, unless otherwise directed or approved by the Owner.
 4. Schedule of values shall itemize the following, at a minimum (the total of all items shall equal the contract sum):
 - a. Project Administration (submittals, Manufacturer support services, warranties, reporting, and closeout)
 - b. Mobilization and Safety
 - c. Roofing Materials
 - d. Sheet Metal Materials
 - e. Demolition and Disposal (Itemize by RoofSection)
 - f. Roofing Construction (Itemize by RoofSection)
 - g. Sheet Metal Construction (Itemize by RoofSection)
 - h. Demobilization and Final Cleanup
 - i. Individually list all Subcontracts and Value for Each
 - j. Individually list all Quality Allowances and Value for Each (Itemize by Roof Section if requested by the Owner's Representative)
 - k. Individually approved Contract Change Orders and Value for Each

- L. No Asbestos Statement
 - 1. Contractor shall submit on letterhead, a written statement certifying that no products containing asbestos or asbestos-related materials will be used on this project. Include date, project, and project number on statement.
- M. Preconstruction Damage Report
 - 1. Prior to beginning the contract work, the Contractor shall inspect the site with the Owner and document any pre-existing damage to the interior and exterior. Report shall be generated using the form provided.

3.03 Review and Transmission of Submittals

- A. The Owner's Representative will review all submittals and indicate the following on the Schedule of Pre-job Submittals:
 - 1. "No Exceptions" This notation indicates the Contractor may proceed with fabrication or purchase of the item.
 - 2. "Make Corrections Noted" This notation indicates the submittal is considered to be complete, if the Contractor agrees with and makes the noted corrections. If the Contractor does not agree with the noted corrections and wishes to make other changes not contemplated in the first review, then resubmittal is required. Otherwise, resubmittal is not required.
 - 3. "Revise and Resubmit" Contractor shall make indicated changes necessary to comply with Contract Documents and review notes, and then resubmit. Make resubmittals as required prior to fabricating or purchasing items.
 - 4. "Rejected" Submittal does not comply with Contract Documents. Review project requirements and resubmit item. Make resubmittals as required prior to fabricating or purchasing items.
- B. The Owner's Representative will electronically transmit the reviewed submittals to the Contractor and owner, with comments made accordingly.
- C. Make all revisions required by the Owner's Representative. If the Contractor considers any required revision to be a change, the Owner's Representative shall be notified as provided for under "Changes" in the Owner-Contractor Agreement.
- D. Show each drawing revision by number, date, and subject in a revision block on the drawing, make only those revisions directed by the Owner's Representative.
- E. When the submittal process has been completed for a given item, resubmittal for substitution of materials, equipment, or installation procedure will not be considered, unless accompanied by an acceptable explanation as to why the substitution is necessary.

3.04 Construction Scheduling

- A. To assure adequate planning and execution of the work so the work is completed within the number of calendar days allowed in the contract, and to assist the Owner in evaluating the progress of the work, prepare and maintain the schedules and reports described in this section.

- B. Definitions
1. "Day" used throughout the contract, unless otherwise stated, means "calendar day."
- C. If any activity is not completed on or before the stated scheduled date, the Owner's Representative will have the right to order the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.
- D. If any activity is 30 or more days behind schedule, the Owner will have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.
- E. Costs incurred by the Owner and Owner's Representative in connection with expediting construction activity under this article may be deducted from the contract sum by the Owner.
- F. It is expressly understood and agreed that failure by the Owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means will not be considered precedent-setting for any other activities.
- G. Construction Schedule Submittal
1. As part of the pre-job submittal process, develop and submit a preliminary construction schedule. This schedule will be used at the preconstruction meeting.
 2. The schedule shall be provided in a bar chart format with one activity listed in each row (from top to bottom), and one calendar day listed in each column (from left to right).
 3. Activities shown on the schedule shall include, but are not necessarily limited to:
 - a. Submittals, shop drawings, and samples, and 14 calendar day review period by Owner's Representative.
 - b. Preconstruction meeting
 - c. Procurement of equipment and materials
 - d. Project mobilization and safety setup
 - e. Interior protection
 - f. Roof construction (itemize by roof section)
 - g. Sheet metal
 - h. Miscellaneous work
 - i. Final cleanup
 - j. Substantial completion
 - k. Final inspection by Manufacturer
 - l. Final inspection by Owner and Owner's Representative
 - m. Punch list completion

- n. Project closeout/warranties
 - o. Final completion
4. Following the preconstruction meeting, Contractor shall revise the schedule within seven business days, and resubmit to the Owner's Representative. Following review, Contractor shall distribute the schedule to all interested parties.

3.05 Progress Reporting and Unit Price Work Documentation

- A. The Contractor shall complete a daily progress report. Progress reports shall be generated using the form provided, to provide a continuous record of the progress of the work.
- B. Contractor shall complete one form for each workday, including work days canceled or shortened due to weather, material shortages, or labor conditions.
- C. Forms shall be legibly filled out in ink with all pertinent items completed.
- D. Progress reports are to be filled out on a daily basis by the Contractor's job site representative, who shall be in a supervisory position. The Owner's Representative shall receive all progress reports on a weekly basis. Provide one hard copy or an electronically transmitted Portable Document Format (.pdf) file.
- E. The Owner reserves the right to withhold payment for lack of required progress reporting.
- F. Where the Contract Documents require specific parts of the work to be performed on a unit price basis, the Contractor shall document expended quantities on a daily basis and obtain verification and signature by the Owner's Representative where indicated. Where the Contract Documents define quantity allowances for specific unit price work, a running total shall be maintained by the Contractor for each unit price work item, as indicated on the progress report form. Provide supplemental documentation of unit price work quantities and locations, as may be required by the Owner's Representative, and attach to the progress reports as instructed. The Owner reserves the right to deny reimbursement for unit price work if the Contractor fails to provide the specified documentation.

3.06 Changes to the Work

- A. All changes to the work shall be documented with Change Directives, approved in writing by the Owner, Contractor, and Roofing Consultant (Owner's Representative).

3.07 Project Closeout

- A. Project Completion
 - 1. When the Contractor is complete, Contractor shall:
 - a. Submit written certification to the Owner through the Owner's Representative that the project, or designated portion of the project, is complete and ready for inspection.
 - b. Submit list of major items to be completed or corrected.
 - c. Submit written certification that the Manufacturer has inspected the roof and that it complies with all provisions for issuance of the warranty.

2. Owner and/or Owner's Representative will make an inspection within 10 days after receipt of certification. Contractor shall provide access to all roofs for inspection, where a permanent means of access does not exist.
 3. If Owner's Representative considers the work to be complete:
 - a. Owner's Representative will prepare and submit to Contractor a Completion Punch List, listing all items to be completed or corrected as determined by the inspection.
 - b. Contractor shall then complete work listed for completion or correction, sign the Completion Punch List forms, and return one signed hard copy or an electronically transmitted Portable Document Format (.pdf) file to the Owner's Representative.
 4. If Owner's Representative considers the work not to be complete:
 - a. The Owner's Representative will notify Contractor in writing stating reasons.
 - b. Contractor shall then complete work and send second written notice to Owner's Representative certifying that the project is complete.
 - c. Owner's Representative will reinspect work within 10 calendar days after receipt of certification. Contractor shall provide access to all roofs for inspection, where a permanent means of access does not exist. Consultant (Owner's Representative) will then prepare and submit to Contractor a completion punch list.
 - d. Contractor shall then complete work listed for completion or correction, sign the Completion Punch List forms, and return one signed hard copy or an electronically transmitted Portable Document Format (.pdf) file to the Owner's Representative.
- B. Completion Inspection
1. At the discretion of the Owner and the Owner's Representative, the Owner's Representative may make a final inspection within 10 calendar days after receipt of the signed Completion Punch List. Contractor shall provide access to all roofs for inspection, where a permanent means of access does not exist.
 2. If Owner's Representative considers the work to be finally complete in accordance with the requirements of the contract documents, Owner's Representative will request Contractor to make project closeout submittals.
 3. If Owner's Representative does not consider the work to be finally complete:
 - a. Owner's Representative will notify Contractor in writing stating reasons.
 - b. Contractor shall take immediate steps to remedy the stated deficiencies and shall send written notice to Owner's Representative certifying that work is complete.
 - c. Owner's Representative will reinspect work within 10 calendar days after receipt of certification. Contractor shall provide access to all roofs for inspection, where a permanent means of access does not exist.

- C. Reinspection Costs
1. If Owner's Representative is required to perform a second (or subsequent) inspection(s) because of failure of work to comply with certifications of Contractor, Owner will deduct amount for additional inspection services from final payment to Contractor.
- D. Closeout submittals shall be one hard copy, or an electronically transmitted Portable Document Format (.pdf) file consisting of the following:
1. Warranties, Manufacturer's punch lists, documentation of punch list completion, and Manufacturer's current published roof maintenance directives as specified in Section 01 78 36 - Warranties.
 2. AIA G706 - Contractor's Affidavit of Payment of Debts and Claims.
 3. AIA G706A – Contractor's Affidavit of Release of Liens, including supporting documentation from the Contractor, Subcontractors, suppliers, and others who may have lien rights against the Owner.
 4. Evidence of payment and release of liens from the Contractor, subcontractors, and suppliers.
 5. AIA G707 – Consent of Surety to Final Payment
 6. Evidence that the jurisdictional authorities that issued permits have accepted the project and closed-out the respective permits.
 7. Final adjustment of accounts including:
 - a. Original contract sum
 - b. Additions and deductions resulting from (if applicable):
 - 1) Previous Change Orders
 - 2) Adjustment of Contract Allowances
 - 3) Unit Price Work
 - 4) Other adjustments
 - 5) Deductions for uncorrected work
 - 6) Deductions for reinspection payments
 - 7) Deductions for actual damages
 - c. Total contract sum as adjusted
 - d. Previous payments
 - e. Sum remaining due
- E. Owner's Representative will prepare final Change Order, reflecting approved adjustments to contract sum not previously made by Change Order.

F. Final Application for Payment

1. Contractor shall submit final application in accordance with conditions of the contract.

3.09 Workmanship Warranty Inspection

- A. After 18 months, the Contractor shall attend an inspection of the roofs included in this project, if requested by the Owner or Owner's Representative. Contractor shall provide access to all roofs for inspection, where a permanent means of access does not exist.

- End of Section -

PRECONSTRUCTION DAMAGE REPORT

Project: Reno-Sparks Convention and Visitors Authority
2019 Roof Replacement
Hall 3 - Sections A and B
Reno, Nevada

Contractor: _____

Project No.: 19RENRENOR009C

Date: _____

Owner: Reno-Sparks Convention and Visitors Authority
Hall 3 - Sections A and B
4590 S. Virginia Street
Reno, Nevada 89502

Anticipated Start Date: _____

Upon inspection of the above-mentioned premises, we are in agreement that existing visible damage to the facility consists of the following: (Itemize damages, listing item descriptions, quantities, locations, and extent of damages. Provide photo or video documentation where appropriate and authorized by the Owner).

INTERIOR:

EXTERIOR:

The above-mentioned items should be excluded from any future claims for damages related to the construction project.

OWNER:

CONTRACTOR:

Date:

Date:

Photo or video documentation provided Yes No

DAILY PROGRESS REPORT

Project: Reno-Sparks Convention and
Visitors Authority
2019 Roof Replacement
Hall 3 - Sections A and B
Reno, Nevada

Date:

Day: S M T W TH F S

Project No.: 19RENRENOR009C

Weather: CLEAR P/C OVERCAST RAIN FOG

Owner: Reno-Sparks Convention and
Visitors Authority
Hall 3 - Sections A and B
4590 S. Virginia Street
Reno, Nevada 89502

Temperature: 0-31 32-40 41-60 61-80 81-100 100+

Wind: STILL LIGHT MODERATE HIGH

Humidity: DRY LIGHT MODERATE HUMID

Entity	Trade	Hours Worked	Start Time	Stop Time
[General Contractor]	[e.g. Roofing Contractor]			
[Subcontractor A]	[e.g. Sheet Metal]			
[Subcontractor B]	[e.g. Plumbing]			
[Subcontractor C]	[e.g. Mechanical]			
Unit Price Description	Unit (Quantity Allowance)	Quantity Today	Quantity To Date	Verified By:
Add/delete wood nailer	Per Board Foot 0			
Remove and replace wood nailer	Per Board Foot 0			
Install walkway as specified	Per Linear Foot 0			
Remove and replace steel decking	Per Square Foot 0			
Wire brush, clean and prime paint surface rusted steel decking	Per Square Foot 0			
Tear off existing wet or damaged 1/4" per foot tapered insulation (1/2" to 2" panels)	Per Square Foot 5,000			
Tear off existing wet or damaged 1/4" per foot tapered insulation (2" to 3" panels)	Per Square Foot 5,000			
Tear off existing wet or damaged 2" polyisocyanurate insulation	Per Square Foot 10,000			

Type of Roof System: _____

Roof Section(s) Worked on: _____

Materials Delivered Today: _____

Total Squares Installed Today: _____

Comments: _____

By: _____

Title: _____

PROJECT NO.: 19RENRENOR009C

PROJECT: Reno-Sparks Convention and Visitors Authority
2019 Roof Replacement - Hall 3 - Sections A and B
4590 S Virginia Street
Reno, Nevada 89502

CONTRACTOR: _____

SUBMITTED BY: _____

DATE: _____

SUBMITTAL NO: _____

This review is only for general conformance with the design concepts and information given in the Contract Documents, and does not relieve the Contractor of responsibility for conformance with the Contract Documents and applicable Codes; all of which have priority over the submittals. Contractor shall be responsible for accuracy and completeness of submitted information. Corrections or comments made on the submittals by the reviewer do not relieve the Contractor from being responsible for compliance with the Contract Documents. Review of a specific item does not constitute review of an assembly of which the item is a component. The Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication process or to means, methods, techniques, sequences, and procedures of construction; for coordination of the work of all trades; and performing all work in a safe and satisfactory manner.

REVIEWED BY: _____

DATE: _____

NOTES:

1. Contractor shall submit transmittal letter and all items listed in the schedule in accordance with Section 01 30 01 - Project Administration, allowing 14 days for review by the Owner's Representative.
2. Contractor shall clearly indicate which information on each submittal is pertinent to the project.
3. Contractor shall refer to Section 01 30 01 - Project Administration and submittal requirements in each specification section for additional information.

General Information		Transmittal No.					Action			
Specification Section	Submittal	"X" If Included					No Exceptions	Make Corrections Noted	Revise and Resubmit	Rejected
		1	2	3	4	5				

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 21 13

Instructions To Bidders

Copy of Performance Bond									
Copy of Labor and Material Payment Bond									
Copy of Certificate of Insurance									

DIVISION 01 - GENERAL REQUIREMENTS

01 30 01

Project Administration

Notice of Award or Guarantee Application to Roofing Manufacturer									
Manufacturer's Approval of Notice of Award or Guarantee Application									
Contact/Subcontractor List									
Building Permit									
Copy of Contractor's State License									
Proposed Schedule of Values for Invoicing									
Construction Schedule									
No Asbestos Statement									
Preconstruction Damage Documentation									

General Information		Transmittal No.					Action			
Specification Section	Submittal	"X" If Included					No Exceptions	Make Corrections Noted	Revise and Resubmit	Rejected
		1	2	3	4	5				
01 35 24	Construction Project Safety									
	Pre-Job Site Safety Plan/Assessment									
	Safety Data Sheets									
DIVISION 06 - WOOD, PLASTICS AND COMPOSITES										
06 10 53	Miscellaneous Rough Carpentry									
	List of Materials									
DIVISION 07 - THERMAL AND MOISTURE PROTECTION										
07 21 16	Batt Insulation									
	Manufacturer's Literature									
	List of Materials									
07 22 16	Roof Board Insulation									
	Manufacturer's Literature									
	List of Materials									
07 22 16.01	Roof Board Insulation - Induction Welded System									
	Manufacturer's Literature									
	List of Materials									
	Insulation Acceptance Letter from Membrane Manufacturer									
07 54 19.02	Adhered PVC Thermoplastic Membrane Roofing									
	Manufacturer's Literature									
	List of Materials									
	Shop Drawings For Proposed Temporary Water Cutoff									
07 54 19.05	Induction Welded PVC Thermoplastic Membrane Roofing									
	Manufacturer's Literature									
	List of Materials									
	Shop Drawings For Proposed Temporary Water Cutoff									
07 62 00	Sheet Metal Flashing and Trim									
	Product Information or Material List for All Accessories									
	Color Chart or Samples For Metal Color Selection									

PART ONE – GENERAL**1.01 Description**

- A. This section is intended to assure adequate planning and execution of the project, to maintain proper facility security and to assist the Owner with eliminating workplace hazards, production disruptions, product damage, and inconvenience.
- B. The Contractor shall advise all administrative and field personnel, Subcontractors, and material suppliers of the requirements of this section.
- C. Any delays experienced due to the Contractor's negligence in providing proper notifications and coordination shall be at the Contractor's expense.
- D. If any conflict should arise over a specific provision of this section, the Owner's decision shall be final.
- E. Coordinate the requirements of this section with related requirements specified elsewhere in the Contract Documents. Immediately inform the Owner's Representative of any conflicts.
- F. Refer to related information on the drawings.

1.02 Qualifications of Project Supervisors

- A. Individuals supervising the work included in this specification section shall be competent and qualified persons.
- B. Contractor shall have a foreman or superintendent present on the project site throughout the entire construction project, who is fluent in the English language (both written and verbal), and is capable of clear communications with all crew members, tenants, and Owner's Representatives.

PART TWO – PRODUCTS**2.01 Not Used****PART THREE – EXECUTION****3.01 Coordination with Facility Operations**

- A. The Contractor shall note that the building will be occupied and in use at all times during this work. The Contractor shall provide and maintain all OSHA or Owner required danger signs, guards, and/or obstructions necessary to protect the public and workers from dangers associated with the work.
- B. Coordinate all work throughout the duration of the project as to minimize disruption of facility operations.
- C. Schedule and coordinate all aspects of the work to maintain the building in a totally watertight condition, no exceptions.
- D. Contractor shall provide a minimum of 48-hours notice for all activities requiring coordination or action on the part of the Owner or Owner's Representative.

3.02 Temporary Facilities and Utilities

- A. Temporary facilities provided by the contractor shall include, but are not limited to:
 - 1. Utilities such as heat, water, electricity, and telephone as required.
 - 2. Contractor's facilities.
 - 3. Temporary sanitary facilities.
- B. Project Requirements
 - 1. Contractor shall furnish all required electricity.
 - 2. The on-site project supervisor shall carry a reliable cellular phone on the project site at all times.
 - 3. Contractor shall provide temporary sanitary facilities in the quantity required for use of all personnel. Maintain in a sanitary condition at all times.
- C. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work.
- D. Remove all such temporary facilities and controls as rapidly as progress of the work will permit or as directed by the Owner's Representative.

3.03 Staging Areas

- A. Staging area(s) will be defined during the Pre-bid Meeting.
- B. Contractor shall barricade all adjacent roof areas. Contractor shall prohibit traffic on all adjacent roof areas. At the Owner's discretion, any damage to adjacent roof areas caused by the Contractor shall be repaired by an approved applicator at no additional cost to the Owner.
- C. All roads and doorways shall remain open, unless approved otherwise by the Owner's Representative.
- D. Contractor shall not block access to dumpsters, and shall maintain safe clearance from all equipment, tanks, and valves.
- E. Contractor shall implement measures to protect the staging areas from damage. At the Owner's discretion, any damage to staging areas caused by the Contractor shall be repaired to match the pre-existing conditions at no additional cost to the Owner.
- F. Furnish and install continuous 6' chain link fencing around all ground level staging areas, equipment, and materials.
- G. When approved by the Owner's Representative, building entrances shall be blocked-off when pedestrians could be endangered by the overhead construction activities or adjacent ground level staging operations. Where blocking of entrances is not approved, provide alternative pedestrian protection as approved in advance by the Owner's Representative.

3.04 Minimum Roof Protection Requirements

- A. At a minimum, Contractor shall install temporary 3/4" plywood walkways over moisture resistant insulation on all new and adjacent roof areas where equipment, materials and/or personnel are loaded onto or traverse over the roof system. The Contractor shall obtain the Owner's permission prior to installing the temporary walkways.

3.05 Roof Damage Control

- A. Contractor shall be responsible for protection of new and existing roof surfaces from construction traffic damage. Contractor shall be responsible to implement additional roof protection and related activities as they may deem necessary to prevent construction-related damage.
- B. Contractor shall inspect all areas on a daily basis and repair any areas of damage before leaving the job site that day.

3.06 Access and Logistical Requirements

- A. Protect the building from staining or damage where ladders, scaffolding, and chutes are set up against the building.
- B. Protect the building from staining and damage where hoisting operations occur.
- C. Roof access for Contractor's personnel shall be via interior stairwell and access door.
- D. If a crane is used, blocking of the street may be required. Bidders shall research associated permit requirements, barricade/traffic control procedures, pedestrian protection, and time restrictions. All applicable costs shall be included in the Contractor's bid.
- E. Provide protection and cleaning of all stairwells, hallways, floor surfaces and any other areas approved for access.
- F. Contractor employees shall be required to wear clean footwear or disposable footwear covering (booties) whenever inside the building.
- G. The Owner reserves the right to revoke interior access privileges if Contractor fails to maintain housekeeping or observe other Owner requirements. If interior access privileges are revoked, the Contractor shall provide alternative means of access to work at no additional cost to the Owner.
- H. The use of Owner's facilities, such as the cafeteria or washrooms will not be allowed.
- I. Contractor shall protect and properly barricade all access and staging areas.
- J. Contractor shall only park in the Owner-approved areas.

3.07 Interior Activities

- A. Contractor shall provide and maintain Owner-approved interior activities during all work that could potentially result in debris or construction materials entering the building, or whenever building occupants could be in danger.
- B. Contractor shall coordinate all work with the Owner's Representative to allow coordination and adequate notification to building occupants.

- C. Contractor's competent person shall be capable of fluent conversation with facility employees, the Contractor's employees, and any Subcontractor's employees.
- D. Contractor shall provide interior personnel and the rooftop supervisor with two-way radios. Interior personnel and the rooftop supervisor shall maintain full radio contact at all times that the Contractor is inside the building.
- E. Contractor shall follow these additional requirements at a minimum:
 - 1. Areas of Deck Replacement or Roof Openings
 - a. At any time that the deck requires removal or an opening will be created, the Contractor shall first provide a competent person to barricade off the interior floor a safe distance out from the roof work area(s), provide warning signage, monitor the interior activities, notify employees of overhead hazards, restrict/coordinate access within the barricaded area, and manage housekeeping.
 - b. Work may only occur when the barricaded area is clear of building occupants.
 - c. Immediately upon replacement of the decking or closing the opening, the Contractor shall sweep down all floor areas, clean off all elevated areas and equipment, properly dispose of the debris, and remove all barricades. Contractor shall immediately notify the Owner's Representative when complete.
 - 2. Areas Without Deck Replacement or Roof Openings
 - a. Whenever debris, or construction materials, could enter the building, or whenever building occupants could be in danger, Contractor shall provide a competent person to monitor interior activities, notify employees of overhead hazards, and manage housekeeping.
 - b. Prior to the end of each day's work, the Contractor shall sweep down all floor areas, clean off all elevated areas and equipment, and properly dispose of the debris.

3.08 Relocation of Building Contents

- A. Contractor shall provide Owner a minimum of 48-hours notice to relocate building contents.
- B. Relocation of building contents is at the discretion of the Owner. No additional cost will be incurred by the Owner in the event building contents cannot be moved.
- C. The Owner will relocate building contents as required to accommodate roofing operations. Contractor shall provide daily progress communications and coordinate at least 48-hours in-advance with the Owner. Lack of advance planning and coordination may result in roofing delays.

3.09 Temporary Supports

- A. The Contractor shall completely and adequately support all rooftop equipment prior to removal. Supports shall consist of steel frames and steel supporting members under the items being supported. Chains or cable supports will not be allowed.
- B. Prior to beginning work, supporting procedures and methods shall be submitted to the Owner's Representative for review.

- C. At the discretion of the Owner, any damage caused by the Contractor during temporarily supporting the rooftop items shall be repaired at no cost to the Owner.

3.10 Security Requirements

- A. All workers shall sign in at the designated security station, prior to accessing the facility.
- B. All workers shall present a photo ID when signing in.
- C. Personal belongings brought onsite will be subject to search by security personnel at any time.
- D. Unless approved otherwise by the Owner, the Foreman/Superintendent shall be the only person allowed in the facility at any time.

3.11 Rain Day Activities

- A. The Contractor shall visit the project site on all rain days and make all necessary corrections to ensure watertightness of the building and roof system, and proper protection of all materials.
- B. The Contractor's representative shall contact the Owner's Representative prior to leaving the project site on such days.

3.12 Labor Forces and Completion of Work

- A. The project shall be fully staffed with qualified and trained personnel at all times.
- B. Once established, the crew size shall not be reduced by more than 20% without prior approval of the Owner.
- C. All work shall be completed within two weeks of the last day of field membrane installation, and before the required completion date.

3.13 Employee Conduct

- A. All Contractor employees shall conduct themselves in a professional manner at all times.
- B. Tobacco use, including smoking, e-cigarettes, or chewing tobacco, shall not occur on the roof or in the facility. Comply with Owner's requirements with respect to tobacco use in all other areas of the Owner's property.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Work Included: To assure the work site environment is safe for the employees of all Contractors, Subcontractors, Consultants, Manufacturer's Representatives, Owner's Representatives, and building occupants, this section has been written to identify and emphasize the importance of safe working conditions. If any conflict arises over a specific provision or rule, the laws and rules governing that specific location shall be followed.
- B. The Contractor shall be solely responsible for construction project safety.

1.02 Related Work

- A. Additional safety-related items may be found elsewhere in the contract documents.

1.03 Standards

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
 - 1. Occupational Safety and Health Act of 1970.
 - 2. State, County, and City requirements, as applicable.

1.04 Quality Assurance

- A. Per OSHA 29 CFR 1926.20(b), the Contractor shall make frequent and regular job site safety inspections to ensure compliance with all applicable standards and site-specific safety requirements.
- B. The first inspection shall be performed no later than the first week of the project. After the first inspection, subsequent inspections shall be performed a minimum of every thirty days, or as required by the standard.
- C. A qualified person designated by the Contractor, who has the authorization to take prompt corrective measures, shall perform all inspections. This may be an employee of the Contractor or a Subcontractor. Proof of the qualified person's education, training, and qualifications must be provided for verification, upon the request of the Owner's Representative.
- D. The Contractor's qualified person making safety inspections shall prepare a report for each job site safety inspection. The Contractor shall submit each report to the Owner's Representative within five calendar days of the inspection.
- E. Contractor shall have sole responsibility for maintaining the job site in compliance with all applicable regulations, Owner requirements, and the Contractor's pre-job site safety plan/assessment. This responsibility shall apply whether or not the Owner or Consultant is present on the job site.
- F. Contractor shall appoint a competent person to be present at all times on the project site, who shall have authority to make decisions regarding safety and health issues on the Contractor's behalf. The competent person shall speak fluent English, and must be able to communicate with Contractor's employees, Subcontractor's employees, and Owner's employees.

- G. The Contractor's competent person, Owner, or Owner's Representative shall all have the authority to stop any witnessed unsafe work practices.
- H. At a minimum, Contractor shall maintain Safety Data Sheets (SDS) at the job site in accordance with OSHA requirements.
- I. One full copy of SDS shall be located on the roof, in addition to other copies that the Contractor maintains on site.

1.05 Submittals

- A. Contractor shall submit a pre-job site safety plan/assessment, which is prepared by the Contractor's qualified safety professional. This plan/assessment shall outline specific safety considerations for each individual section or level of roof included in the project. Examples of items that shall be included in the safety plan/assessment include:
 - 1. Laydown/staging areas
 - 2. Crane/hoist
 - 3. Setup/material storage
 - 4. Fall protection
 - 5. Skylights and roof openings
 - 6. Hot work/fire protection
 - 7. Pedestrian/vehicular safety
 - 8. Interior safety
 - 9. Any other pertinent, site-specific issue(s) not listed
- B. Contractor shall submit SDS for all construction materials and other substances to be used on the project.
 - 1. Benchmark's review of the Contractor's SDS submittal is for general conformance only. Contractor shall be responsible to ensure that the set of SDS is complete, up to date, and accurate.
 - 2. After completion of the pre-job submittal process, Contractor shall accurately maintain all sets of SDS on the project site with updated SDS when issued by the Manufacturer(s), or if materials or substances are brought to the project site that were not anticipated prior to the job start.

PART TWO – PRODUCTS

2.01 Materials and Equipment

- A. General: Contractor shall supply all necessary materials and equipment required to complete the work in a manner consistent with a safe work site and as required by regulatory agencies.

- B. All equipment used on the project shall be in safe operating condition and shall be maintained in a safe condition for the project duration. Equipment found to be unsafe or in disrepair shall be repaired and made safe or shall be removed from the job site and replaced, if necessary, at no cost to the Owner.
- C. Disposal of any solvents, containers, and other regulated materials shall meet all applicable laws.

PART THREE – EXECUTION

3.01 General

- A. The specified safety requirements are broad in nature, by design. The Contractor shall augment the information contained in this section as necessary; with more specific information from OSHA, Owner's safety requirements, material and equipment Manufacturers' safety recommendations, and roofing industry requirements and standards.

3.02 Contractor Employee Training

- A. Contractor shall provide adequate training for employees to ensure their safety and the safety of others on the project site. Contractor shall provide instruction in the proper operation of power tools, hoisting equipment, tankers, and other pieces of equipment employees will be required to use in completion of the work.
- B. Contractor shall ensure each worker is aware of job and site-specific hazards and of the safety precautions appropriate to each.
- C. Contractor shall present a safety and loss prevention orientation program to each new employee before that employee starts work.
- D. Contractor and Subcontractors shall inform their employees of all safety and health rules pertaining to their particular job.
- E. Contractor and Subcontractors shall inform their employees of location and use of safety devices such as first aid kits, phones, fire extinguishers, etc.
- F. Contractor shall implement a regular system of work inspection to detect and correct hazardous conditions, safety rule violations, and unsafe working practices.
- G. Contractor shall ensure that their workers and any Subcontractor's workers participate in any safety orientations or training programs required by the Owner.
- H. Employees shall be trained regarding any job site alarms, code signals, evacuation warnings, appropriate responses, and requirements for actions that will need to be taken.

3.03 Accident Investigation and Reporting

- A. Investigating and reporting of accidents is necessary for all Contractors and Subcontractors. An accident investigation and report shall be immediately made by the Contractor's designated competent person on site. Contractor shall provide to the Owner's Representative a copy of the completed Accident Report, Employer's First Report of Injury or Illness, or such other similar reports required by federal, state, county and municipal or local safety laws. All reporting and record keeping requirements shall be in accordance with OSHA regulations.
- B. Perform investigation and reporting of accidents as required by the Owner's safety requirements and policies, where applicable.

3.04 First Aid

- A. Contractor and Subcontractors shall be responsible for providing first aid and medical treatment for their employees. The names, addresses and telephone numbers of Contractor's and Subcontractors' doctors, hospital and ambulance services shall be conspicuously posted, as required by law.
- B. A suitable first aid kit shall be located at all times on the roof and shall be conspicuously located and readily accessible at all times. The first aid kit shall be of an appropriate size for the roofing crew.

3.05 Individual Conduct and Safety

- A. Contractor's and Subcontractors' employees shall be made aware of and comply with the following rules that will be in effect on all job sites:
 - 1. Alcoholic beverages and illegal drugs will not be permitted.
 - 2. Prescription drugs with side effects that impair an Employees' ability to perform their work duties in a safe manner, will not be permitted.
 - 3. Employees entering job site under the influence or possession of alcohol or drugs will be subject to removal from the job site.
 - 4. The carrying of firearms and all other weapons is prohibited.
 - 5. Fighting, gambling, stealing, soliciting, and horseplay will not be tolerated.
 - 6. Abusive language or disrespectful behavior in public areas will not be tolerated.

3.06 Personal Protective Equipment (PPE) and Clothing

- A. The Contractor shall furnish and require the use and wearing of PPE and protective clothing by its employees and any Subcontractor's employees.
- B. Approved eye and face protection are required to be worn when warranted by the exposure, or where mandated by facility safety requirements. Safety glasses with side shields are required in all circumstances where there is an exposure to flying particles. Plastic face shields are required to be worn for guarding against flying particles and spraying liquids or corrosives.
- C. Appropriate clothing shall be worn at all times.
- D. Hard hats must be worn at all times whenever there is a possibility of head injury from impact, flying or falling objects, or where mandated by facility safety requirements.
- E. Hearing protection shall be utilized where mandated by OSHA regulations or facility safety requirements.
- F. Protective footwear shall be used where mandated by OSHA regulations or facility safety requirements.

3.07 Housekeeping

- A. The Contractor or Subcontractors shall maintain good housekeeping standards at all times as an integral part of the work. Daily cleanup of work, lay-up, and personnel areas is required and must be performed.
- B. Materials shall be piled so that safe clearances are maintained, and tipping or movement is prevented. Loose materials on the roof must be secured so that they cannot be blown or bumped off.
- C. Accumulation of material that may create a fire hazard is not permitted. Never store excessive amounts of material in one place, so as to potentially overload the roof.
- D. Roof areas are to be "watertight at night" at all times during the job. Contractor's or Subcontractors' failure to do so can be grounds for dismissal.

3.08 Signs and Barricades

- A. When it is necessary to barricade an area for overhead work, to protect personnel from hazardous operations, or to move equipment or cranes, barricades are to be provided by the Contractor or Subcontractors. Barricades must be erected before the work requiring them begins. If the barricades are in a roadway or walkway, blinking lights must be used after dark. When the work is completed, the barricades must be removed from the job site.
- B. Contractor or Subcontractors are forbidden to remove posted signs.
- C. Traffic control signage shall be constructed of metal and conform to the latest edition of *Manual of Uniform Traffic Control Devices (MUTCD)*.

3.09 Fall Protection

- A. The Contractor shall select and implement one of the following methods of fall protection, in compliance with OSHA regulations.
 - 1. Fall restraint (motion stopping) system.
 - 2. Personal fall arrest system with warning lines.
 - 3. Safety monitor system with warning lines.
- B. The three fall protection methods are listed in order of Benchmark, Inc. preference, with a fall restraint (motion stopping) system being the most preferred and the safety monitor system being the least preferred.
- C. All plastic domed skylights or smoke hatches, open mechanical curbs, openings in the roof deck, and similar openings or holes which could be potential fall hazards shall be guarded at all times to prevent accidental falls.

3.10 Ladders

- A. Contractor and Subcontractor provided ladders shall be free of defects. Ladders with split or cracked side rails, damaged rungs, missing feet, or other defects shall not be brought to the project site. Ladders set up near doorways, walkways, or other congested areas must be barricaded or guarded.

- B. Ladders shall be of adequate length and must extend at least 3' or 4 rungs above the upper landing.
- C. Place straight ladders on solid, level footings with the foot of the ladder a minimum distance from the wall equal to 1/4 the length of the ladder from the resting point.
- D. Straight ladders shall have non-skid feet and be securely tied off.
- E. Face the ladder and use both hands going up or down.
- F. Do not climb or descend ladders with tools, equipment, or material in your hands.
- G. Metal ladders shall not be used.
- H. Roofs not able to be accessed using a 40 foot or shorter ladder must be accessed by alternative means. If access cannot be achieved from other roofs or through the building interior, then an OSHA approved scaffolding tower with access ladder shall be erected and maintained by the Contractor.

3.11 Fire Protection

- A. Fully charged, inspected and tagged fire extinguishers must be located at all times on all occupied roof sections and staging areas. All fire extinguishers shall be minimum 20 lb., type ABC. At a minimum, one fire extinguisher shall be provided for each 3,000 square feet of roof area under construction. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 50 feet.
- B. The Contractor shall ensure that all required fire extinguishers are maintained in a fully charged and operable condition, including testing, inspections, and tagging. Fire extinguishers with out-of-date inspection tags shall be removed and replaced immediately.
- C. Smoking may be prohibited on the job site for various reasons. Employees will be expected to obey all "No Smoking" signs.
- D. Store all flammable liquids in approved safe containers. Contents will be described and marked flammable.
- E. Flammable liquids in excess of 10 gallons must not be stored on the roof overnight, unless specific written authorization is provided in advance by the Owner.
- F. When using flammable liquids to clean, dispose of the rags in approved containers or remove them from the roof daily to prevent possible spontaneous combustion.
- G. Never store bulk flammable material or liquids closer than 25' from open flames or other source of ignition.
- H. All hot work must be done in accordance with permit procedures in use at the facility. Obtain all necessary approvals prior to proceeding with any work that result in a flame or spark.

3.12 Electrical Safety

- A. All electrical circuits shall utilize ground-fault circuit interrupters (GFCI) to protect workers from injury.
- B. Regularly inspect all power cords. Any defective power cords shall be taken out of service and removed from the job site immediately.

- C. Only double insulated power tools shall be used.
- D. Regularly inspect all power tools. Any defective tools, including tools with damaged or repaired power cords, shall be taken out of service and removed from the job site immediately.
- E. When working on powered equipment, and power must be disconnected to perform the required work, the Contractor shall implement lock-out and tag-out procedures to protect workers from injury.
- F. Do not set up ladders or stage construction operations adjacent to power lines. If the only available locations are near power lines, implement measures to prevent injury, and coordinate any required outages with the Owner's Representative in advance.

3.13 Crane and Hoist

- A. Contractor shall comply with the Manufacturer's specifications and limitations. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be conspicuously posted on all equipment. Instructions or warnings shall be visible from the operator's station.
- B. Accessible areas within the swing radius of the rear of the rotating superstructure shall be properly barricaded to prevent the public or employees from being struck or crushed by the crane.
- C. All crawler or truck cranes in use shall meet the requirements as prescribed in the ANSI B30-5-1968 Safety Code for Crawler and Truck Cranes.
- D. Inspect all rigging equipment prior to use (chains, ropes, slings, shackles, etc.). Remove any defective equipment from the job site.

3.14 Public Liability

- A. Unauthorized persons are not allowed access to the roof at any time. Contractor shall control access to the roof.
- B. Barricades and signs shall be posted on the ground around the work area to warn the public.
- C. Locate air intake ducts, air conditioners, or air pumps. Notify Owner's Representative when dust or fumes may be drawn into the facility so that the unit may be shutdown and/or covered.
- D. At night, lock trucks, deactivate hoisting equipment, and take down ladders.
- E. Park vehicles so that they do not pose a hazard to other traffic moving around the job site. Trucks and equipment should not block sidewalks or other pedestrian travel ways without providing a clear, well-marked, alternate route of travel.

- End of Section -

PART ONE – GENERAL**1.01 General Requirements**

- A. Upon completion of work and prior to final payment, Contractor shall pay all required fees, secure all required inspections, and complete any other actions necessary to secure and deliver the specified warranties and related documents to the Owner.
- B. The warranty start date shall be no earlier than the date the Contractor certifies completion of all Manufacturer final inspection punchlist(s). In instances where the Manufacturer requires reinspection of the final inspection punchlist, the warranty start date shall be no earlier than the date the Manufacturer certifies that the Contractor completed all punchlist items to the Manufacturer's satisfaction.
- C. Manufacturers' warranties shall cover defects in materials and workmanship, shall not include any buy-out clauses, and shall not be prorated.
- D. All warranties shall contain written provisions stating that they will be fully transferable at any time during the specified warranty period.
- E. Warranties issued prior to the Manufacturer's final inspection, such as offered under the Manufacturer's pre-issue or early bird warranty programs, are not approved.

1.02 Manufacturer's Warranties

- A. The Contractor shall make all necessary notices for warranty purposes to the Manufacturer(s), as required to secure timely inspections and issuance of the specified warranties.
- B. After Manufacturers' final inspections, submit Manufacturers' final inspection reports and/or punch lists, and Contractor's certification that all identified corrective work has been corrected as required by the Manufacturers. If a Manufacturer requires reinspection of an issued punch list, submit certification from the Manufacturer that punchlist items have been completed to the Manufacturer's satisfaction.
- C. The following roofing Manufacturer's warranty shall be provided:
 - 1. Primary roofing Manufacturer's 15-year no dollar limit (NDL) labor and material warranty.
- D. The following accessory Manufacturers' warranties shall be provided:
 - 1. 25-year minimum warranty for Kynar 500/Hylar 5000 metal finish integrity and color retention. The paint film shall be guaranteed against cracking, peeling, and chalking in excess of ASTM D659 number 8 rating or fade in excess of 5 units per ASTM D2244, under normal weather and atmospheric conditions. Warranty shall be signed by the metal Manufacturer.

1.03 Contractor Warranty

- A. The Contractor shall guarantee all materials and workmanship for a period of two (2) years from the date of acceptance of the completed work by the Owner. The Contractor shall make good any defects in materials or workmanship that may develop during the two-year period by repairing or replacing such defects at without cost to the Owner.
- B. Contractor's warranty shall be prepared and submitted using the form provided in this section.

1.04 Maintenance Directives

- A. Manufacturer's warranty submittal shall include the Manufacturer's current published roof maintenance directives for the specified roof system type(s).

PART TWO – MATERIALS**2.01 Not Used****PART THREE – EXECUTION****3.01 Not Used**

CONTRACTOR'S WARRANTY

Trade:	Roofing and Sheet Metal Work
Manufacturer and Roof System Installed:	_____
Contractor:	_____
Contractor Address:	_____
Contractor Phone:	_____
Contractor E-mail:	_____
Contract Number and Date:	_____
Project and Location	Reno-Sparks Convention and Visitors Authority
	2019 Roof Replacement
	4590 S. Virginia Street
	Reno, Nevada 89502
Area of Roof Installation:	Hall 3 - Sections A and B
Date of Acceptance (Effective Warranty Date):	_____

1. Contractor guarantees to Owner that the roofing system(s) identified above have been installed in accordance with the Contract Documents for the above referenced project, and meet the minimum requirements of the Manufacturers of all materials used in performance of the work.
2. Contractor guarantees to Owner that Contractor for a period of two years commencing with the date of Owner's acceptance of the installation, will make good any deficiencies that develop as a direct result of workmanship defects, by repairing or replacing such defects. All corrective work shall utilize materials and installation procedures in strict accordance with the Contract Documents.
3. Contractor guarantees to Owner that Contractor for a period of two years commencing with the date of Owner's acceptance of the installation, will maintain all sheet metal flashing in a watertight condition without cost to the Owner.
4. Contractor's liability hereunder shall be limited to the repair or necessary replacement of any defective component of the work without cost to Owner and shall not include incidental or consequential damages.

* By: _____

Title: _____

Company: _____

Date Executed: _____

** Warranty must be signed by a Company Officer*

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Provide all labor, materials, equipment, and tools to prepare the existing roofing system for the specified work, as designated in the specifications or on the drawings.
- B. Provide for the proper disposal of all existing materials to be removed, as designated in the specifications or on the drawings.
- C. Provide for the cleanup of excess materials, equipment, tools, and construction debris, as required to maintain the project site in a neat and orderly condition.

1.02 Standards

- A. Resource Conservation and Recovery Act of 1976.
- B. State, County, and City requirements, as applicable.

1.03 Scheduling and Coordination

- A. Schedule and coordinate the roof demolition and/or preparation work with the new work in such a manner as to keep the new insulation and roofing materials, building, and building interior absolutely dry and watertight.
- B. Coordinate all work with related trades and the Owner, to minimize any disruptions of the Owner's operations.
- C. Refer to related requirements specified elsewhere in the Contract Documents.

1.04 Disposal

- A. All debris shall be stored in containers approved by the Owner's Representative and removed from the roof on a daily basis.
- B. Keep Owner's property clean of any construction debris.
- C. Contractor shall dispose of construction debris in accordance with the referenced standards.

PART TWO – PRODUCTS**2.01 Cleaners**

- A. Cleaners used in conjunction with surface preparation work shall meet local code requirements for runoff water quality.
- B. Cleaners and/or solvents shall not have a detrimental effect on the new or existing roof systems or the roof and building drainage system.

PART THREE – EXECUTION**3.01 Protection of Surfaces**

- A. Contractor shall take all precautions during demolition and preparation necessary to protect the building and adjacent surfaces from being soiled or damaged.
- B. Contractor shall restore to original condition any damage caused during work performed under this section.
- C. Keep roof surface clean of any debris that might prevent proper drainage.
- D. At start of each workday, drains located within daily work area shall be temporarily plugged to prevent debris from falling into the drain. Plugs shall be removed at the end of each workday.
- E. Prior to demolition work, verify that all soil pipes, flues, steel members, and other similar penetrations are secured to the building structure. Coordinate removal or securement of all unsecured penetrations prior to the start of demolition work.

3.02 Debris Handling

- A. No material shall be dropped to any point lying outside the exterior walls of the structure, unless otherwise approved in writing by the Owner's Representative.
- B. All material chutes or section of chutes at an angle greater than 45° from the horizontal shall be entirely enclosed.
- C. On all buildings over 20' in height, debris shall be transported using a fully enclosed receptacle that is mechanically lowered. A fully enclosed trash chute may also be used where appropriate for height of the building.
- D. Chutes may be job-fabricated or purchased premanufactured. If premanufactured chutes are used, Manufacturer's setup and operating instructions shall be followed.
- E. When installing trash chutes, proper counterbalance shall be used to offset the weight and use of the chute. If wood boards or metal struts are used, they shall be set up to prevent a tripping hazard to employees. A safety factor of 5 shall be used to determine counterbalance.
- F. No job site materials shall be used to counterbalance a chute.
- G. Guard rails shall be installed on either side of the chute, to a distance of 6 feet minimum from the opening. Guardrails shall be installed according to OSHA standards.
- H. Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toeboard or bumper not less than 4" thick and 6" high shall be provided at each chute. Additionally, the Contractor shall use a guard around the top of the chute to prevent any debris from falling next to the chute.
- I. Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

3.03 Disposal

- A. Properly dispose of all construction debris on a daily basis.

- B. Do not store debris on roof unless otherwise directed by the Owner. Contractor shall not overstress the roof decking.

3.04 Mandatory Recycling

- A. As part of the Base Bid, the Contractor shall divert all of the following materials from disposal at the landfill.
 - 1. Metals, including edge metal, copings, counterflashings, expansion / control joint covers, and all non-contaminated metal pails.
 - 2. Plastics, including packaging materials, pails, and containers.
 - 3. Cardboard, including packaging materials and roll cores.
 - 4. Paper, including packaging materials.
 - 5. Wood, including demolished nailers, demolished plywood, demolished wood plank decking, damaged pallets, and new wood or plywood scrap and pieces.
- B. The Contractor shall package the debris as required by the recycler.
- C. The Contractor shall transport the debris to approved recyclers.
- D. Pallets in a condition to be reused shall not be landfilled.
- E. Metal or plastic pails and containers that are contaminated with adhesive, mastic, coatings, and similar materials are excluded.

3.05 Preparation of Surfaces

- A. The extent of preparation of surfaces is listed in each section; on the drawings; and in Section 01 11 00 – Summary of Work.
- B. All debris shall be removed. The substrate shall be broom clean at a minimum, and additionally prepared as noted on the drawings, as specified elsewhere, and as required by the Manufacturer of materials to be applied over the decking.

3.06 Cleanup

- A. Throughout the duration of the project, retain all stored materials and equipment in an orderly arrangement allowing maximum access, not impeding drainage or traffic and providing the required protection of materials.
- B. Weekly, and more often if necessitated by job conditions, Contractor shall inspect all arrangements of materials stored on site and restack, tidy and resecure as required.
- C. Contractor shall clear the construction areas and shall provide for the removal of all construction debris from the site. Contractor shall not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work. Contractor shall provide storage of all items awaiting removal from the project site, observing all requirements for fire protection, and protection of the surrounding site.
- D. Daily and more often if necessitated by job conditions, Contractor shall inspect the site and pickup all scrap, debris, and waste material. Contractor shall remove such items promptly, leaving the construction area and site clean daily.

- E. Contractor shall be responsible to assure that their subcontractors have properly removed and disposed of all debris relating to their contract.
- F. At least twice each month and more often if directed by the Owner, Contractor shall completely remove all scrap, debris, and waste material from the project site. Contractor shall maintain the site in a neat and orderly condition at all times.
- G. At the completion of the contract, Contractor shall remove from the project site all equipment, tools, excess materials, and construction debris related to their contract. Contractor shall be responsible to assure that their subcontractors have properly removed from the project site all equipment, tools, excess materials, and construction debris related to their contract.
- H. Contractor shall be responsible for returning all areas set aside for staging and storage to their original condition.
- I. Contractor shall repair damage and remove stains caused by work related to their contract.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Work includes, but is not necessarily limited to:
 - 1. Installing wood nailers and/or plywood per the drawings and specifications.
 - 2. Refastening existing wood nailers and/or plywood in accordance with the specified standards, where existing nailers and/or plywood are suitable for reuse.
 - 3. Removal and replacement of existing deteriorated nailers and/or plywood.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
 - 1. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins.
- B. Qualifications of Installers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this section.
- C. In acceptance or rejection of the work of this section, the Owner will make no allowance for lack of skill on the part of the workers.

1.03 Submittals

- A. General: Comply with the provisions of Section 01 30 01.
- B. Product Data: 14 days prior to starting work, submit:
 - 1. Complete material list of all items proposed to be furnished and installed under this section.

1.04 Delivery, Storage, and Handling

- A. Store all materials up, off of the roof or ground, and covered with weatherproof tarps anchored sufficiently, so as to resist wind blow-off. Roof surfaces shall be protected from damage at all times.
- B. Keep all materials clearly identified with all grade marks legible. Keep all damaged material clearly identified as damaged and stored separately to prevent its inadvertent use.
- C. Do not allow installation of damaged or otherwise non-complying material.
- D. In the event of damage, immediately make all necessary repairs and replacements to the approval of and at no additional cost to the Owner.

1.05 Warranty

- A. Warranty: See Section 01 78 36.

PART TWO – PRODUCTS**2.01 Nailers**

- A. All nailers shall be #2 or better, construction grade lumber.
- B. Size to be as indicated on the drawings.
- C. Minimum nailer size shall be 2" x 6" (nominal).
- D. Minimum top nailer thickness shall be 1.5" (nominal).
- E. Nailers shall extend 1/2" beyond metal flanges.
- F. Wood sleepers, where specified, shall be 4" x 4" minimum treated wood.

2.02 Plywood

- A. All plywood is to be minimum 1/2", APA Rated Exterior, Structural 1. Only waterproof glue is acceptable.
- B. Refer to drawings for plywood thickness at each detail.

2.03 Carbon Steel Fasteners

- A. All fasteners must be carbon steel with corrosion-resistant coating. Fasteners shall meet FM 4470.
- B. Masonry/Concrete Fasteners
 - 1. Corrosion-resistant, threaded fastener with low profile head.
 - 2. Fasteners shall be a minimum of 3/16" diameter with a 1" minimum embedment.
 - 3. Fastener to be FM Global approved.
 - 4. Approved Products
 - a. Tapcon Flat-Head Phillips with Blue Climaseal or White UltraShield by ITW Buildex
 - b. Tapper Flat-Head Phillips with Perma-Seal Coating by Powers Fasteners, Inc.
- C. Steel/Wood Fasteners
 - 1. Corrosion-resistant, self-tapping, self-drilling screw with low profile head.
 - 2. Fastener to be FM Global approved.
 - 3. Approved Products
 - a. Roof Grip by OMG with Climaseal Coating
 - b. Dekfast by SFS Group USA, Inc. with Sentri Coating
 - c. Standard roofing fastener by OMG, with CR-10 coating

4. Fasteners to be #12 minimum and of sufficient length to penetrate into steel 3/4" and wood 1".
- D. Washers
1. Round, carbon steel, ASTM F 844-072, galvanized per ASTM F 2674; minimum diameter 5/8".

2.04 Stainless Steel Fasteners

- A. All fasteners and related hardware must be Series 300 or 400 stainless steel.
- B. Fasteners shall be FM Global approved.
- C. Masonry/Concrete Fasteners
1. Stainless steel, threaded fastener with low profile head
 2. Approved Products
 - a. 410 Stainless Steel Tapcon by ITW Buildex
 - b. Stainless Steel Tapper by Powers Fasteners, Inc.
 - c. Approved equal
 3. Fasteners shall be nominal 1/4" diameter and of sufficient length to provide 1" minimum embedment.
- D. Steel/Wood Fasteners
1. Stainless steel, self-tapping, self-drilling screw with low profile head.
 2. Approved Products
 - a. #14 (HD) Stainless Steel by Tru-Fast Corporation
 - b. Stainless Steel Roofing Fastener by OMG
 - c. Approved equal
 3. Fasteners to be nominal #14 minimum and of sufficient length to penetrate into steel 3/4" and wood 1".
- E. Washers
1. Round, stainless steel washers. Minimum diameter 5/8".

PART THREE – EXECUTION

3.01 Nailers

- A. Nailers are to be installed as per detail drawings.

- B. Discard units of material with defects that might impair quality of work and units that are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- C. Set nailers to required levels and lines with members plumb and true.
- D. All perimeter nailers shall be of uniform height within a given roof section.
- E. Nailers shall be installed with 1/4" gap between ends of adjoining pieces.
- F. Where two or more nailers are stacked, butt joints shall be offset 12" minimum between adjacent layers.
- G. Nailers shall be fastened in accordance with the following schedule:
 - 1. Fasteners in 6" or wider (nominal) lumber shall be installed in two rows, staggered one-third of nailer width. Listed spacings indicate distance between fasteners in adjacent rows.
 - 2. Two fasteners shall be installed within 6" of each nailer end.
 - 3. Corner fastener spacing shall extend 8' from all outside building corners.
 - 4. Where two or more nailers are installed, each nailer shall be fastened independently.
 - 5. Over all deck types, the bottom nailer shall be fastened using the specified fasteners and 5/8" diameter washers. Countersink washers and fasteners level with top of wood using spade bit or similar method. Fasten subsequent nailers, where specified, using the specified screws without washers.
 - 6. Maximum fastener spacing shall be as specified on the drawings.

3.02 Plywood

- A. Plywood is to be installed as per detail drawings.
- B. Plywood joints must be true and well fitting, allowing for expansion and contraction. Allow 1/8" at end and edge joints.
- C. Plywood fasteners shall be installed in a uniform grid pattern, with a maximum spacing of 18" o.c. between adjacent fasteners.
- D. Where fastening to steel stud framing, fasten to each framing member at 6" o.c.

3.03 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed.
- B. Contractor shall correct any deficient work prior to installing subsequent work or notification of completion.

3.04 Cleaning

- A. When sawing of wood or plywood is performed on the rooftop, contain and/or clean sawdust in such a way as to prevent contamination of substrate to receive subsequent construction materials.

- B. Contractor shall follow the requirements to Section 02 41 20 – Roof Demolition and Cleanup.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Furnish and install fiberglass batt insulation complete, in-place, per the drawings and specifications.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
 - 1. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins.
- B. Qualifications of Installers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this section.
- C. In acceptance or rejection of the work of this section, the Owner will make no allowance for lack of skill on the part of the workers.

1.03 Delivery, Storage, and Handling

- A. Use all means to protect the materials of this section before, during, and after installation, and to protect the work and materials of all other trades. Roof surfaces shall be protected from damage at all times.
- B. Deliver materials to the job site in original, unopened containers no sooner than 14 days prior to start of job. Materials to be stored up, off the roof deck or ground, and covered with weatherproof tarps anchored sufficiently, so as to resist wind blow-off. When storing materials on the roof, do not overstress the deck.
- C. In the event of damage, immediately make all repairs and replacements to the approval of the Owner's Representative and at no additional cost to the Owner.

1.04 Submittals

- A. General: Comply with the provisions of Section 01 30 01.
- B. Product Data: 14 days prior to starting work, submit:
 - 1. Most recent copy of Manufacturer's literature for products to be used.
 - 2. Complete material list of all items proposed to be furnished and installed under this section.

PART TWO – PRODUCTS**2.01 Batt Insulation**

- A. Fiberglass Batts: Unfaced, reinforced fiberglass batts as manufactured by Owens-Corning or Johns Manville.
- B. Batt thickness is to be twice the dimension of the opening to which it is being inserted.

2.02 Polyethylene Vapor Retarder

- A. Approved Products
 - 1. Generic 6-mil polyethylene sheet

2.03 Seam Tape

- A. Seam tape shall be a 4" wide, heavy duty, weather resistant, rubber adhesive tape.
- B. Approved Products
 - 1. Vapor Block Tape (Part #VBT4X210) by Americover
 - 2. Approved equal

PART THREE – EXECUTION**3.01 Installation**

- A. Where shown on the drawings, install polyethylene vapor retarder. Seal all joints and edges vapor tight using seam tape.
- B. Install fiberglass batt insulation as indicated on the detail drawings. Insulation is to be securely wedged into place and shall fill all voids.

3.02 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed.
- B. Contractor shall correct any deficient work prior to installing subsequent work or notification of completion.

3.03 Cleaning

- A. Contractor shall follow the requirements to Section 02 41 20 – Roof Demolition and Cleanup.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Provide and install roof board insulation and means of securement complete, in-place, per the drawings and specifications.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
 - 1. *The NRCA Roofing and Waterproofing Manual*, National Roofing Contractors Association
 - 2. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins.
 - 3. *Annual Book of ASTM Standards*, ASTM International
- B. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section. In acceptance or rejection of the work, the Owner will make no allowance for lack of skill on the part of the workers.
- C. Roofing Inspections: Make all required notifications and secure all required inspections by the Manufacturer of the approved materials to facilitate issuance of the specified roof warranty.
- D. U.L. Listing: Provide materials bearing Underwriters Laboratories (U.L.) marking on bundle, package, or container indicating that materials have been produced under U.L.'s classification and follow-up service.

1.03 References

- A. References: Materials used in this section shall be listed in the reference(s) below. The reference(s) used shall be the latest published edition available on the date the Contractor submits its price proposal to the Owner.
 - 1. *Roofing Materials and Systems Directory and Fire Resistance Directory*, Underwriters Laboratories, Inc.

1.04 Submittals

- A. General: Comply with the provisions of Section 01 30 01.
- B. Product Data: 14 days prior to starting work, submit:
 - 1. Most recent copy of Manufacturer's literature applicable to products and specifications to be used.
 - 2. Complete material list of all items proposed to be furnished and installed under this section.

1.05 Delivery, Storage, and Handling

- A. Deliver materials to job site in their original unopened containers, no sooner than 14 days prior to start of project. Package labels shall indicate material name, production date, and/or product code. Slit Manufacturer-supplied plastic covering and cover with weatherproof tarps that are securely anchored so as to resist blow-off.
- B. Store materials in dry, raised, protected areas in an upright position. Control temperature of storage areas in accordance with Manufacturer's instructions. Protect materials from exposure to the elements. When storing materials on the roof, do not over stress the deck.
- C. Use all necessary means to protect the materials in this section before, during, and after installation, and to protect the work and materials of all other trades.
- D. In the event of damage, immediately make all necessary repairs and replacements subject to the approval of and at no additional cost to the Owner.
- E. Follow the Manufacturer's recommendations for storage of temperature-sensitive materials.

1.06 Scheduling

- A. Work shall be performed on a daily basis with each section completed before progressing to the next day's work, unless specifically directed otherwise by the Owner's Representative.
- B. Completion of work will be defined as the installation of all specified roof preparation, insulation, field membrane, flashings, counterflashings, sheet metal, fasteners, and caulking.

1.07 Warranty

- A. Warranty: See Section 01 78 36.

PART TWO – PRODUCTS**2.01 General**

- A. All materials used on this project shall be compatible with the existing conditions and with each other.
- B. No product shall contain any asbestos or asbestos-related products.
- C. Insulation, fasteners, and/or adhesives used on this project shall be approved by the roofing membrane Manufacturer, shall be compatible with the roof system specified, and shall qualify for the specified roofing membrane Manufacturer's warranty.

2.02 Insulation Materials

- A. Polyisocyanurate Foam Roof Insulation - Glass Reinforced Facer (GRF)
 - 1. Insulation shall be a closed-cell, polyisocyanurate foam core with fiberglass-reinforced felt facers conforming to ASTM specification C 1289, Type II, Class 1. Foam core shall have a rated flame spread of 75 or less in accordance with ASTM E 84. Insulation shall have minimum compressive strength of 20 psi (Grade 2) in accordance with ASTM C 1289.

2. Approved Products
 - a. ENRGY 3 by Johns Manville Roofing Systems Group
 - b. Sarnatherm by Sika Sarnafil Inc.
 - c. InsulBase by Carlisle SynTec Incorporated
 3. Flat Stock Insulation Requirements
 - a. Insulation shall be supplied in 4' x 4' boards. Insulation shall be flat stock 2.0" thick.
 4. Tapered Insulation Requirements
 - a. Insulation shall be supplied in 4' x 4' boards. Insulation panels shall slope 1/4" per foot. Insulation shall have 0.5" minimum thickness.,
- B. Gypsum Board
1. Non-structural, moisture resistant gypsum panel. Gypsum board shall conform to ASTM C 1177 or ASTM C 1278. Gypsum board product shall be specifically recommended for the type of membrane application required by the Contract Documents, as applicable.
 2. Approved Products
 - a. DensDeck Prime by Georgia-Pacific Gypsum Corp.
- C. Tapered Fiberboard Edge Strip
1. Wood fiber insulation boards factory-cut to provide slope. Insulation shall conform to ASTM C 208.
 2. Approved Products
 - a. As approved by the roof membrane Manufacturer.
 3. Insulation Requirements
 - a. Insulation shall be supplied in widths and thicknesses as required to provide smooth continuous transitions.

2.03 Bead-Applied Polyurethane Adhesive

- A. Dual component polyurethane adhesive and primer (where applicable), used to attach roof insulation board to roof decks and substrates.
- B. Regular, summer or winter formula shall be bid and installed, such that Manufacturer's installation criteria are met.
- C. Approved Products
 1. OlyBond 500 by OMG for use with Johns Manville Roofing Systems Group
 2. Sarnacol OM Board Adhesive by Sika Sarnafil Inc.

3. Flexible FAST Adhesive by Carlisle SynTec Incorporated

PART THREE – EXECUTION

3.01 Description

- A. The latest Manufacturer specifications and installation instructions shall be followed along with the following requirements. These specific minimum requirements must be included in the bid and shall not be altered.
- B. Inspection
 1. Examine the areas and conditions under which work in this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until such conditions have been corrected.
- C. Preparation and Surface Conditions
 1. Before insulation application is started, remove trash, debris, grease, oil, water, moisture, and contaminants from substrate to receive insulation.
 2. Prepare all surfaces in accordance with applicable specification sections.
 3. Protect adjacent areas from damage.
 4. Surfaces scheduled to receive insulation shall be free of any standing water, frost, snow, or loose debris.
 5. Substrate shall be smooth, free of sharp projections, and free of obvious depressions.
 6. All nailers shall be installed prior to installing insulation.
- D. Installation – General
 1. Perform all related work specified elsewhere necessary for the installation of the specified roof insulation.
 2. Ensure that fasteners do not penetrate conduit or other miscellaneous items located on the underside of the roof deck or spall the underside of the deck.
 3. Do not apply insulation materials when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present.
 4. Install tapered insulation cricket at the upslope side of each curb that is 18" or wider. Cricket shall extend out half the width of the curb and the cricket's slope shall be twice the opposing field slope.

3.02 Applied in Polyurethane Adhesive – Bead Application

- A. Multiple Layers
 1. Temperature of adhesive, substrate, and ambient conditions shall be within the Manufacturer's recommended ranges during installation of insulation adhesive.

2. Prepare substrate to receive polyurethane adhesive as recommended by the adhesive Manufacturer.
3. Seal around all penetrations and roof perimeters to ensure no adhesive drippage below deck level.
4. Install adhesive over the substrate in beads, as follows:
 - a. OlyBond 500 or private-label versions of this product: 3/4" to 1" wide wet beads.
 - b. Flexible FAST Adhesive: 1/2" wide wet beads.
5. The minimum application rate shall be as listed below. If the adhesive Manufacturer's required application rates are more restrictive than those listed, then the Manufacturer's requirements shall be followed.

Perimeters: Install beads at a spacing of 6" o.c.
Corners: Install beads at a spacing of 4" o.c.
6. Install bottom layer of insulation with all joints tightly butted and end joints staggered 12" minimum. Insulation shall fit tightly against all adjacent substrate surfaces and penetrations.
7. Areas of damage or missing corners in all layers shall be cut out and replaced with pieces 12" x 12" minimum, adhered into place.
8. Set insulation into adhesive immediately after foam beads have been applied. Do not allow beads to skin over prior to setting insulation. Do not slide insulation boards through adhesive during placement.
9. Ensure board adhesion and uniformity at joints by weighting down insulation until adhesive has set. Contractor shall not use rollers for this purpose. Do not remove weights until insulation is firmly attached and movement of boards no longer occurs.
10. If boards can be lifted or moved by hand, they are not sufficiently attached.
11. Additional layer(s) of insulation shall be installed in polyurethane adhesive over preceding layer(s), using procedures specified for the bottom layer
12. Insulation joints in each layer shall be offset a minimum of 12" from insulation joints in the preceding layer, including all daily tie-off locations.
13. Remove adhesive drips or spillage from all insulation surfaces prior to installing the membrane. If facer damage results, then remove and replace the insulation board. Remove all adhesive that protrudes above insulation board surfaces at joints.

3.03 Tapered Insulation

- A. Install tapered insulation with slope direction as needed to match the slope of the existing tapered insulation system.
- B. Reinstall tapered insulation with the same slope and direction to match the existing prior to the insulation removal.

- C. Where tapered insulation is installed along a perimeter edge of uniform nailer height, utilize tapered edge strip along nailers as tapered insulation thickness decreases to provide a smooth transition and proper support for the membrane system or subsequent insulation layer.
- D. Install tapered crickets on the upslope sides of all rectangular penetrations with a dimension greater than 18" perpendicular to slope. Cricket slope shall be twice the field's slope, unless otherwise noted on drawings.
- E. Utilize tapered edge strip at transitions in construction of more than 1/4", and in other specified locations, to provide a smooth transition and proper support for the membrane system or subsequent insulation layer. Field cut and shape edge strip as required. Direct slope of edge strip to provide for proper drainage.

3.04 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed. Verify that insulation boards are positively secured.
- B. Contractor shall correct any deficient work prior to installing subsequent work.

3.05 Cleaning

- A. Contractor shall follow the requirements to Section 02 41 20 - Roof Demolition and Cleanup.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Provide and install roof board insulation and means of securement complete, in-place, per the drawings and specifications.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
 - 1. *The NRCA Roofing and Waterproofing Manual*, National Roofing Contractors Association
 - 2. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins.
 - 3. *Annual Book of ASTM Standards*, ASTM International
- B. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section. In acceptance or rejection of the work, the Owner will make no allowance for lack of skill on the part of the workers.
- C. Roofing Inspections: Make all required notifications and secure all required inspections by the Manufacturer of the approved materials to facilitate issuance of the specified roof warranty.
- D. U.L. Listing: Provide materials bearing Underwriters Laboratories (U.L.) marking on bundle, package, or container indicating that materials have been produced under U.L.'s classification and follow-up service.

1.03 References

- A. References: Materials used in this section shall be listed in the reference(s) below. The reference(s) used shall be the latest published edition available on the date the Contractor submits its price proposal to the Owner.
 - 1. *Roofing Materials and Systems Directory and Fire Resistance Directory*, Underwriters Laboratories, Inc.

1.04 Submittals

- A. General: Comply with the provisions of Section 01 30 01.
- B. Product Data: 14 days prior to starting work, submit:
 - 1. Most recent copy of Manufacturer's literature applicable to products and specifications to be used.
 - 2. Complete material list of all items proposed to be furnished and installed under this section.

3. Letter from membrane Manufacturer stating acceptance of proposed roof insulation assembly.

1.05 Delivery, Storage, and Handling

- A. Deliver materials to job site in their original unopened containers, no sooner than 14 days prior to start of project. Package labels shall indicate material name, production date, and/or product code. Slit Manufacturer-supplied plastic covering and cover with weatherproof tarps that are securely anchored so as to resist blow-off.
- B. Store materials in dry, raised, protected areas in an upright position. Control temperature of storage areas in accordance with Manufacturer's instructions. Protect materials from exposure to the elements. When storing materials on the roof, do not over stress the deck.
- C. Use all necessary means to protect the materials in this section before, during, and after installation, and to protect the work and materials of all other trades.
- D. In the event of damage, immediately make all necessary repairs and replacements subject to the approval of and at no additional cost to the Owner.
- E. Follow the Manufacturer's recommendations for storage of temperature sensitive materials.

1.06 Scheduling

- A. Work shall be performed on a daily basis with each section completed before progressing to the next day's work, unless specifically directed otherwise by the Owner's Representative.
- B. Completion of work will be defined as the installation of all specified roof preparation, insulation, field membrane, induction welding of all installed plates, flashings, counterflashings, sheet metal, fasteners, and caulking.

1.07 Warranty

- A. Warranty: See Section 01 78 36.

PART TWO – PRODUCTS**2.01 General**

- A. All materials used on this project shall be compatible with the existing conditions and with each other.
- B. No product shall contain any asbestos or asbestos-related products.
- C. Insulation and fasteners used on this project shall be approved by the roofing membrane Manufacturer, shall be compatible with the roof system specified, and shall qualify for the specified roofing membrane Manufacturer's warranty.

2.02 Insulation Materials

- A. Polyisocyanurate Foam Roof Insulation - Glass Reinforced Facer (GRF)
 - 1. Insulation shall be a closed-cell, polyisocyanurate foam core with fiberglass-reinforced felt facers conforming to ASTM specification C 1289, Type II, Class 1. Foam core shall have a rated flame spread of 75 or less in accordance with ASTM E 84. Insulation shall have minimum compressive strength of 20 psi (Grade 2) in accordance with ASTM C 1289.
 - 2. Approved Products
 - a. Sarnatherm by Sika Sarnafil Inc.
 - b. Energy 3 by Johns Manville Corp Roofing Systems Group
 - c. InsulBase Polyiso by Carlisle SynTec Incorporated.
 - 3. Flat Stock Insulation Requirements
 - a. Insulation shall be supplied in 4' x 4' or 4' x 8' boards. Insulation shall be flat stock 2" thick.
 - 4. Tapered Insulation Requirements
 - a. Insulation shall be supplied in 4' x 4' boards. Insulation panels shall slope 1/4" per foot. Insulation shall have 1/2" minimum thickness.
- B. Gypsum Board
 - 1. Non-structural, moisture resistant gypsum panel. Gypsum board shall conform to ASTM C 1177 or ASTM C 1278. Gypsum board product shall be specifically recommended for the type of membrane application required by the Contract Documents, as applicable.
 - 2. Approved Products
 - a. DensDeck by Georgia-Pacific Gypsum Corp.
 - 3. Insulation Requirements
 - a. Gypsum board shall be supplied in 4' x 8' sheets. Gypsum board shall be flat stock 1/2" thick.
- C. Tapered Fiberboard Edge Strip
 - 1. Wood fiber insulation boards factory-cut to provide slope. Insulation shall conform to ASTM C 208.
 - 2. Approved Products
 - a. As approved by the roof membrane Manufacturer.

3. Insulation Requirements
 - a. Insulation shall be supplied in sizes and thicknesses as needed to provide a smooth transition.

2.03 Insulation Fasteners – Steel

A. Induction Weld Plates and Fasteners

1. Corrosion-resistant, self-tapping, self-drilling, threaded fastener with #3 Phillips head. 1/4" hex head fasteners are not approved. Fastener shall be carbon steel with corrosion-resistant coating. Fastener and plate shall meet FM 4470 requirements.
2. Polymeric coated, 3" Galvalume steel plate, supplied by fastener Manufacturer.
 - a. For use with induction welded assemblies: Corrosion-resistant, meeting FM Approval Standard 4470 criteria, Galvalume coated, 22-gauge, steel plate with polymeric coating compatible with roofing membrane.
3. Fastener and plate shall be approved by FM Global.
4. Approved Products
 - a. Sarnadisc RhinoBond and Sarnafastener-XP by Sika Sarnafil Inc.
 - b. JM PVC Rhino Plate and High Load Fastener by Johns Manville Roofing Systems Group
 - c. RhinoBond Plate – PVC and Carlisle HP-X by Carlisle SynTec Incorporated
5. Steel Deck: Fasteners shall be the shortest length to penetrate the topflange of the deck by 3/4".

B. Standard Insulation Plates and Fasteners

1. Corrosion-resistant, self-tapping, self-drilling #12 or #14 threaded fastener with #3 Phillips head. 1/4" hex head fasteners are not approved. Fastener shall be carbon steel with corrosion-resistant coating. Fastener and plate shall meet FM 4470 requirements.
2. Plate shall be Galvalume coated and have flat bottom design to provide a low profile over rigid substrates.
3. Fastener and plate shall be approved by FM Global.
4. Approved Products
 - a. Sarnaplate and Sarnafastener - #12 by Sika Sarnafil, Inc.
 - b. Ultrafast Flat Bottom Insulation Plate and Ultra Fastener by Johns Manville Roofing Systems Group.
 - c. Insulation Fastening Plate and InsulFast #12 by Carlisle SynTec Incorporated
5. Steel Deck: Fasteners shall be the shortest length to penetrate the top flange of the deck by 3/4".

PART THREE – EXECUTION**3.01 Description**

- A. The latest Manufacturer specifications and installation instructions shall be followed along with the following requirements. These specific minimum requirements must be included in the bid and shall not be altered.
- B. Inspection
 - 1. Examine the areas and conditions under which work in this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until such conditions have been corrected.
- C. Preparation and Surface Conditions
 - 1. Before insulation application is started, remove trash, debris, grease, oil, water, moisture, and contaminants from substrate to receive insulation.
 - 2. Prepare all surfaces in accordance with applicable specification sections.
 - 3. Protect adjacent areas from damage.
 - 4. Surfaces scheduled to receive insulation shall be free of any standing water, frost, snow, or loose debris.
 - 5. Substrate shall be smooth, free of sharp projections, and free of obvious depressions.
 - 6. All nailers shall be installed prior to installing insulation.
- D. Installation – General
 - 1. Perform all related work specified elsewhere necessary for the installation of the specified roof insulation.
 - 2. Ensure that fasteners do not penetrate conduit or other miscellaneous items located on the underside of the roof deck, or spall the underside of the deck.
 - 3. Do not apply insulation materials when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present.
 - 4. Install tapered insulation cricket at the upslope side of each curb that is 18" or wider. Cricket shall extend out half the width of the curb and the cricket's slope shall be twice the opposing field slope.
 - 5. Perimeter and corner areas shall be calculated based upon the applicable version of ASCE-7.

3.02 Insulation Installation - Fastening to Steel Deck

- A. Single Layer
 - 1. Insulation shall be installed with all joints tightly butted. Insulation shall fit tightly around penetrations.

2. Areas of damage or broken corners shall be cut out and replaced with pieces 12" x 12" minimum, fastened into place.
3. Fastener spacing shall be as defined within this section, but no less than two fasteners per each piece of insulation.
4. Fasten insulation with screws and induction weld plates. Maximum spacing shall be as listed below. If membrane Manufacturer's fastening requirements exceed those of this section, then Manufacturer's recommendations shall be followed.

Field Prime: 1 per every 5.33 square feet
Field 1 per every 3.20 square feet
Perimeters: 1 per every 3.20 square feet
Corners: 1 per every 2.00 square feet
5. Any whole or partial insulation board that falls within the perimeter] or corner areas shall have the increased fastening applied over the entire board.
6. Fastening patterns and perimeter and corner areas shall be installed per the drawings and specifications.
7. Install supplemental standard (non-induction weld) plates and fasteners as needed to ensure all insulation boards lay flat.

B. Multiple Layers

1. Bottom layer of insulation shall be installed with all joints tightly butted and end joints staggered 12" minimum. Insulation shall fit tightly around penetrations.
2. Areas of damage or broken corners shall be cut out and replaced with pieces 12" x 12" minimum.
3. Additional layer(s) of insulation shall be installed over preceding layer(s) with all joints tightly butted. Insulation shall fit tightly around penetrations.
4. Insulation joints in each layer shall be offset a minimum of 12" from insulation joints in the preceding layer, including all daily tie-off locations.
5. Areas of damage or broken corners shall be cut out and replaced with pieces 12" x 12" minimum, fastened into place.
6. Fastener spacing shall be as defined within this section, but no less than two fasteners per each piece of insulation.
7. Fasten the top layer of insulation boards with screws and induction weld plates. Maximum spacing shall be as listed below. If insulation Manufacturer's fastening requirements exceed those of this section, then Manufacturer's recommendations shall be followed.

Field Prime: 1 per every 5.33 square feet
Field: 1 per every 3.20 square feet
Perimeters: 1 per every 3.20 square feet
Corners: 1 per every 2.00 square feet

8. Any whole or partial insulation board that falls within the perimeter or corner areas shall have the increased fastening applied over the entire board.
9. Fastening patterns and perimeter and corner areas shall be installed per the drawings and specifications.
10. Install supplemental standard (non-induction weld) plates and fasteners as shown and noted on the drawings.

3.03 Tapered Insulation

- A. Install replacement tapered insulation with slope direction as needed to match the slope of the existing tapered insulation system. Miter cut all panels at valleys for tight fit and alignment throughout valley length.
- B. Where tapered insulation is installed along a perimeter edge of uniform nailer height, utilize tapered edge strip along nailers as tapered insulation thickness decreases to provide a smooth transition and proper support for the membrane system or subsequent insulation layer.
- C. Install tapered crickets on the upslope sides of all rectangular penetrations with a dimension greater than 18" perpendicular to slope. Cricket slope shall be twice the field's slope, unless otherwise noted on drawings.
- D. Utilize tapered edge strip at transitions in construction of more than 1/4", and in other specified locations, to provide a smooth transition and proper support for the membrane system or subsequent insulation layer. Field cut and shape edge strip as required. Direct the slope of the edge strip to provide for proper drainage.

3.04 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed. Verify that insulation boards are positively secured.
- B. Contractor shall correct any deficient work prior to installing subsequent work.

3.05 Cleaning

- A. Contractor shall follow the requirements to Section 02 41 20 - Roof Demolition and Cleanup.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Furnish and install a weather and watertight adhered PVC roof complete, in-place, per the drawings and specifications.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
1. *The NRCA Roofing and Waterproofing Manual*, National Roofing Contractors Association
 2. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins.
 3. *Annual Book of ASTM Standards*, ASTM International
- B. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section. In acceptance or rejection of the work, the Owner will make no allowance for lack of skill on the part of the workers.
- C. Roofing Inspections: Make all required notifications and secure all required inspections by the Manufacturer of the approved materials to facilitate issuance of the specified roof warranty.
- D. U.L. Listing: Provide materials bearing Underwriters Laboratories (U.L.) marking on bundle, package, or container, indicating that materials have been produced under U.L.'s classification and follow-up service.
- E. The Contractor shall not subcontract the installation of the roof system covered under this specification to an individual or a firm that is not a full-time employee of the Contractor's company. Included shall be the following components:
1. Insulation
 2. Roof Membrane
 3. Flashings
 4. Walkways

1.03 References

- A. References: Materials used in this section shall be listed in the reference(s) below. The reference(s) used shall be the latest published edition available on the date the Contractor submits its price proposal to the Owner.
1. *Roofing Materials and Systems Directory and Fire Resistance Directory*, Underwriters Laboratories, Inc.

1.04 Submittals

- A. General: Comply with requirements of Section 01300.
- B. Product Data: 14 days prior to starting work, submit:
 - 1. Most recent copy of Manufacturer's literature applicable to products and specifications to be used.
 - 2. Complete material list of all items proposed to be furnished and installed under this section.
- C. Contractor's proposed detail for temporary water cutoff installation.

1.05 Delivery, Storage, and Handling

- A. Protection: Use all means to protect the materials of this section before, during, and after installation and to protect the work and materials of all other trades.
- B. Delivery and Storage: Deliver materials to the job site in original, unopened containers no sooner than 14 days prior to start of job. Package labels shall indicate material name, production date, lot number, and/or product code. Materials shall be stored up, off of the roof deck or ground and covered completely with weatherproof tarps that are securely anchored, so as to resist wind blow-off. When storing materials on the roof, do not over stress the deck.
- C. Replacements: In the event of damage, immediately make all repairs and replacements to the approval of the Owner and at no additional cost to the Owner.
- D. Follow the Manufacturer's recommendations for storage of temperature sensitive materials.

1.06 Scheduling

- A. Work is to be performed on a daily basis with each section completed before progressing to the next day's work, unless specifically directed otherwise by the Owner's Representative.
- B. Completion of work will be defined as the installation of all specified roof preparation, insulation, field membrane, flashings, counterflashings, sheet metal, fasteners, and caulking.

1.07 Warranty

- A. Warranty: See Section 01 78 36.

PART TWO – PRODUCTS**2.01 General**

- A. Minimum product requirements have been listed. All of these components must be used and bid. Products not supplied by the membrane Manufacturer are to be purchased from a Manufacturer-approved source.
- B. Manufacturer supplied V.O.C. compliant products shall be bid and used if V.O.C. regulations are in effect at the project location at the time of bidding.
- C. No product shall contain any asbestos or asbestos related products.

- D. No product shall contain lead or lead related products

2.02 Products Supplied by Manufacturer

A. Roof Membrane

1. Roof membrane shall be 60-mil minimum, polyester reinforced, polyvinyl chloride (PVC) sheet membrane and shall comply with ASTM D 4434, Type III. Membrane color shall be white and Energy Star rated.
2. Approved Products
 - a. S327 Membrane by Sika Sarnafil, Inc.
 - b. JM PVC DuPont TM Elvaloy Membrane by Johns Manville Roofing Systems Group
 - c. Sure-Flex PVC KEE HP Membrane by Carlisle SynTec Incorporated

B. Flashing Membrane

1. Flashing membrane shall be nominal 60-mil minimum, fiberglass or polyester reinforced polyvinyl chloride (PVC) sheet membrane Flashing color shall be white.
2. Asphalt-resistant polyvinyl chloride (PVC) sheet membrane must be used if flashings are to be installed on asphalt contaminated surfaces. Asphalt contaminated surfaces must be covered with a manufacturer approved barrier, i.e., 1/2" plywood, 1/2" DensDeck Prime, 24-gauge galvanized sheet metal, etc., in lieu of the asphalt resistant membrane prior to flashing installation. Where plywood is shown in the drawing details, plywood shall be supplied.

C. Membrane Adhesive

1. Solvent based contact adhesive for bonding the membrane to suitable horizontal and vertical substrates.
2. Approved Products
 - a. Sarnacol 2170 by Sika Sarnafil, Inc.
 - b. JM PVC Membrane Adhesive by Johns Manville Roofing Systems Group
 - c. Sure-Flex PVC Bonding Adhesive by Carlisle SynTec Incorporated

D. Membrane Coated Sheet Metal

1. PVC film laminated to 24 or 25-gauge, galvanized sheet metal. Membrane coated metal color shall be white.
2. Approved Products
 - a. Sarnaclad by Sika Sarnafil, Inc.
 - b. JM PVC Coated Metal by Johns Manville Roofing Systems Group
 - c. Sure-Flex Coated Metal by Carlisle SynTec Incorporated

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- E. Synthetic Felt
1. Non-shrinking polyester felt, not intended for use over coal-tar pitch
 2. Approved Products
 - a. Sarnafelt by Sika Sarnafil, Inc.
 - b. JM Polyester Mat Protection by Johns Manville Roofing Systems Group
 - c. Sure-Seal HP Protective Mat by Carlisle SynTec Incorporated
- F. System Fasteners – Wood
1. Corrosion-resistant, Climeaseal coated, self-tapping, self-drilling screw with low profile head.
 2. Fastener shall be FM Global approved and meet FM 4470 corrosion resistance requirements.
 3. Fastener shall be supplied by Sika Sarnafil Inc.
 4. Approved Products
 - a. Sarnafastener by Sika Sarnafil, Inc.
 - b. High Load Fastener by Johns Manville Roofing Systems Group
 - c. Carlisle HP-X Fastener by Carlisle SynTec Incorporated
- G. System Fasteners – Concrete/Masonry
1. Corrosion-resistant, threaded or friction fit fastener with low profile head.
 2. Fastener shall be FM Global approved and meet FM 4470 corrosion resistance requirements.
 3. Approved Products
 - a. Sarnafastener by Sika Sarnafil, Inc.
 - b. High Load Fastener by Johns Manville Roofing Systems Group
 - c. Carlisle HD-10 Concrete Fastener by Carlisle SynTec Incorporated
- H. Batten Strip
1. 1" wide extruded aluminum or Galvalume metal bar, pre-punched at 6" o.c.
 2. Approved Products
 - a. Sarnastop by Sika Sarnafil, Inc.
 - b. Anchor Bar by Johns Manville Roofing Systems Group
 - c. Metal Fastening Bar by Carlisle SynTec Incorporated

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- I. Membrane Cleaners
 - 1. High quality, clear solvent cleaner for removing dirt and other contaminants from PVC membranes.
 - 2. Approved Products
 - a. Sarna Seam Cleaner by Sika Sarnafil, Inc.
 - b. JM Single-ply Membrane Cleaner by Johns Manville Roofing Systems Group
 - c. Carlisle PVC Membrane Cleaner by Carlisle SynTec Incorporated

 - J. Termination Bar
 - 1. 0.10" to 0.12" thick, extruded aluminum counterflashing/bar with predrilled holes every 6" to 8" o.c.
 - 2. Approved Products
 - a. Sarnareglet by Sika Sarnafil, Inc.
 - b. JM Termination Bar by Johns Manville Roofing Systems Group
 - c. Carlisle Termination Bar by Carlisle SynTec Incorporated

 - K. Lap Seam Sealant
 - 1. Liquid thermoplastic sealant compound for sealing membrane edges where the reinforcement is exposed (if required by the selected membrane manufacturer).

 - L. Water Cutoff Sealant
 - 1. Single-components, gun grade, polyurethane or butyl-blend sealant used as water cutoffs behind flashings.
 - 2. Approved Products
 - a. Sika 1a by Sika Sarnafil, Inc.
 - b. JM PVC Polyurethane Caulk by Johns Manville Roofing Systems Group
 - c. Carlisle Water Cutoff Mastic by Carlisle SynTec Incorporated

 - M. Prefabricated Flashings
 - 1. Premolded PVC flashings used for sealing all inside and outside flashing corners as supplied by the selected membrane manufacturer.
 - 2. Premolded PVC pipe boot flashings for sealing stacks and vent pipe penetrations as supplied by the selected membrane manufacturer.

- N Walkway
1. Reinforced PVC protection mat
 2. Approved Products
 - a. Sarnatred by Sika Sarnafil, Inc.
 - b. Sure-Flex PVC Walkway by Carlisle SynTec Incorporated
 - c. JM PVC Walk Pad by Johns Manville Roofing Systems Group

2.03 Other Materials

- A. All other materials not specifically described but required for a complete and proper installation of the work in this section shall be as selected by the Contractor, approved by the Manufacturer, and subject to the approval of the Owner.

PART THREE – EXECUTION

3.01 Description

- A. The latest Manufacturer specifications and installation techniques are to be followed along with the following requirements. These specific minimum requirements must be included in bid and are not to be altered.

3.02 Inspection

- A. Examine the areas and conditions under which work in this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until such conditions have been corrected.

3.03 Surface Conditions

- A. Surfaces scheduled to receive roofing are to be free of any standing water, frost, snow, or loose debris.
- B. Substrate is to be smooth, free of sharp projections, and free of obvious depressions.
- C. All metal fittings specified or shown on drawings are to be in-place before roofing.
- D. All nailers shall be securely installed prior to roofing.
- E. All surfaces scheduled to receive PVC membrane must be free of physical contact with any bituminous materials, clean, and smooth.

3.04 Installation – General

- A. Perform all related work specified elsewhere necessary for the installation of the specified membrane system.
- B. Ensure that fasteners do not penetrate conduit, post tension cables, or other miscellaneous items located within or on the underside of the roof deck.

- C. Owner's Representative may take a seam sample of approximately 8" x 8" twice daily. Contractor shall be responsible for making watertight each sample area immediately after sample is cut.

3.05 Installation of Roofing Membrane

- A. Apply contact adhesive in a uniform fashion over a properly installed substrate using an approved 1/2" to 3/4" nap solvent-resistant paint roller. The adhesive shall be applied in an even coat without holidays, puddles, or other irregularities, only over an area that can be covered by the day's operations. Coverage rate shall be 3/4 to 1-3/4 gallons per 100 square feet, depending upon substrate finish. The adhesive shall be allowed to dry completely before installing the membrane. Unroll and position roofing membrane, without stretching, over the approved substrate, allowing sheets to overlap a minimum of 3".

Once in place, one-half of the sheet's length shall be turned back and the underside shall be coated with adhesive at a rate of 1/2 to 1-1/4 gallons per 100 square feet. When the membrane adhesive has dried slightly to produce strings when touched with a dry finger, the coated membrane shall be rolled onto the previously coated substrate being careful to avoid wrinkles or air pockets. **Do not allow adhesive on the underside of the membrane to dry completely.** The amount of membrane that can be coated with adhesive before rolling into substrate will be determined by ambient temperature, humidity and crew. The bonded sheet shall be pressed firmly in-place with a water-filled, foam-covered lawn roller by frequent rolling in two directions. The remaining un-bonded half of the sheet shall be folded back and the procedure repeated.

- B. Laps in the membrane sheets shall be installed in a shingled manner in the direction of drainage as not to restrict the flow of water.
- C. Seaming area is to be clean and free of dust, dirt, and debris. When cleaning is required, follow the manufacturer's procedures for cleaning.
- D. Laps are to be hot air welded using a manufacturer approved automatic welder. Laps shall be welded daily.
- E. All seams are to be fully welded a minimum of 1" to 1-1/2" from the edge of the lap.
- F. All T-laps and transitions where the automatic welder and hand welder meet (start/stops) shall be patched using hot-air welded 60-mil flashing membrane.
- G. Allow laps to cool and then check for fishmouths and other voids. Repairs are to be made daily by hot-air welding.
- H. Seam sealant shall be applied to the membrane edges where the reinforcement is cut and exposed, if required by the manufacturer. Seam sealant shall be applied daily after the seams have been checked and any necessary repairs completed.
- I. After installation of the field membrane and before installation of flashings, the field membrane shall be secured using one of the following methods:
1. A nosing or gravel stop detail fastened 12" o.c. on the vertical face of the nailer and 3" o.c. on the horizontal face.
 2. Fastening a batten strip at 6" o.c. through the membrane and into the roof deck.
 3. Fastening a vertically mounted batten strip at 6" o.c. through the membrane and into the substrate.

4. Fastening the deck flange of a membrane clad metal flashing through the membrane and into a secure nailer at 3" o.c.

3.06 Flashings

- A. Flashings shall be constructed and terminated as per the detail drawings. The specified water cutoff sealant or sealant tape shall be applied behind the top edges of the flashings. The top edges of flashings shall be fastened per the Manufacturer's requirements at a minimum, unless superseded by the detail drawings.
- B. Apply contact adhesive over the clean, dry, compatible substrate, using an approved solvent-resistant roller. Apply in a uniform coat at the rate of 3/4 to 2 gallons per 100 square feet depending upon substrate finish. Allow adhesive to dry completely before installing flashing membrane.
- C. All flashings shall be totally bonded to the previously coated substrate at a rate of approximately 50 square feet per gallon of adhesive. Do not allow adhesive to dry completely on the underside of the membrane. The bonded sheet shall be pressed firmly into place using a hand roller.
- D. Flashings shall extend a minimum of 6" onto the roof membrane and 8" up the vertical.
- E. All vertical laps at the horizontal to vertical transition shall be patched using heat welded 60-mil flashing membrane.

3.07 Membrane Clad Metal Flashings

- A. Where indicated on the detail drawings, install membrane clad metal flashings.
- B. Form and install flashings in the shapes and profiles indicated on the detail drawings.
- C. Metal flashings shall be fastened according to the detail drawings. If the Manufacturer's fastening requirements exceed those shown on the drawings, then Manufacturer's requirements are to be followed.
- D. Adjacent flashing sheets shall be spaced 1/4" apart. The ends of each sheet shall be fastened 3" o.c. along the butt joint. The joint shall be covered with 2" wide aluminum tape. A 5" wide strip of flashing membrane shall be hot-air welded over the joint.
- E. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings are allowed without prior written approval from the Owner's Representative and membrane Manufacturer.

3.08 Roof Walkways

- A. Walkways shall be installed in a neat, orderly fashion and where indicated on roof plans or in specifications.
- B. Chalk line walkway locations on roof membrane and position walkway in-place, using chalk line as a guide.
- C. Install walkway continuous and centered with previous walkway material. Apply a continuous coat of contact adhesive to the field sheet and back of walkway in accordance with Manufacturer's requirements.

- D. Walkways shall be secured to the roof membrane by heat welding. All edges shall be continuously hot air welded watertight.

3.09 Temporary Water Cutoffs

- A. Temporary water cutoffs shall be constructed at the end of each working day to protect the insulation, roofing, building, and building interior from damage due to wind, snow, and rain.
- B. Contractor shall provide methods and materials compatible with the membrane, to provide a positively adhered weather and watertight seal, capable of withstanding inclement weather and ponded water.
- C. Construction of temporary water cutoffs is to be detailed by the Contractor and approved by the Manufacturer and the Owner's Representative.
- D. Temporary water cutoffs and contaminated membrane shall be neatly trimmed and removed at the start of the next workday.

3.10 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed.
- B. Contractor shall correct any deficient work prior to installing subsequent work or notification of completion.

3.11 Cleanup

- A. Contractor shall follow the requirements of Section 02 41 20 - Roof Demolition and Cleanup.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Furnish and install a weather and watertight induction-welded PVC roof complete, in-place, per the drawings and specifications.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
1. *The NRCA Roofing and Waterproofing Manual*, National Roofing Contractors Association
 2. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins.
 3. *Annual Book of ASTM Standards*, ASTM International
- B. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section. In acceptance or rejection of the work, the Owner will make no allowance for lack of skill on the part of the workers.
- C. Roofing Inspections: Make all required notifications and secure all required inspections by the Manufacturer of the approved materials to facilitate issuance of the specified roof warranty.
- D. U.L. Listing: Provide materials bearing Underwriters Laboratories (U.L.) marking on bundle, package, or container, indicating that materials have been produced under U.L.'s classification and follow-up service.
- E. The Contractor shall not subcontract the installation of the roof system covered under this specification to an individual or a firm that is not a full-time employee of the Contractor's company. Included shall be the following components:
1. Insulation
 2. Roof Membrane
 3. Flashings
 4. Roof Walkways

1.03 References

- A. References: Materials used in this section shall be listed in the reference(s) below. The reference(s) used shall be the latest published edition available on the date the Contractor submits its price proposal to the Owner.
1. *Roofing Materials and Systems Directory and Fire Resistance Directory*, Underwriters Laboratories, Inc.

1.04 Submittals

- A. General: Comply with the provisions of Section 01 30 01.
- B. Product Data: 14 days prior to starting work, submit:
 - 1. Most recent copy of Manufacturer's literature applicable to products and specifications to be used.
 - 2. Complete material list of all items proposed to be furnished and installed under this section.
 - 3. Contractor's proposed detail for temporary water cutoff installation.

1.05 Delivery, Storage, and Handling

- A. Protection: Use all means to protect the materials of this section before, during, and after installation and to protect the work and materials of all other trades.
- B. Delivery and Storage: Deliver materials to the job site in original, unopened containers no sooner than 14 days prior to start of job. Package labels shall indicate material name, production date, lot number, and/or product code. Materials shall be stored up, off of the roof deck or ground and covered completely with weatherproof tarps that are securely anchored, so as to resist wind blow-off. When storing materials on the roof, do not over stress the deck.
- C. Replacements: In the event of damage, immediately make all repairs and replacements to the approval of the Owner and at no additional cost to the Owner.
- D. Follow the Manufacturer's recommendations for storage of temperature sensitive materials.

1.06 Scheduling

- A. Work is to be performed on a daily basis with each section completed before progressing to the next day's work, unless specifically directed otherwise by the Owner's Representative.
- B. Completion of work will be defined as the installation of all specified roof preparation, insulation, field membrane, induction welding of all plates, flashings, counterflashings, sheet metal, fasteners, and caulking.

1.07 Warranty

- A. See Section 01 78 36.

PART TWO – PRODUCTS**2.01 General**

- A. Minimum product requirements have been listed. All of these components must be used and bid. Products not supplied by the Manufacturer are to be purchased from a Manufacturer-approved source.
- B. Manufacturer-supplied V.O.C. compliant products shall be bid and used if V.O.C. regulations are in effect at the project location at the time of bidding.
- C. No product shall contain any asbestos or asbestos-related products.

2.02 Products Supplied by Manufacturer**A. Roof Membrane**

1. Roof membrane shall be polyester reinforced, polyvinyl chloride (PVC) sheet membrane. Sheet width shall be 10' (3 meters) maximum.
2. Approved Products
 - a. S327 Membrane by Sika Sarnafil
 - b. JM PVC DuPont TM Elvaloy Kee Membrane by Johns Manville Roofing Systems Group
 - c. Sure-Flex PVC KEE HP Membrane by Carlisle SynTec, Inc.
3. Roof membrane color and all accessory membrane items shall be Energy Smart White.
4. Membrane shall be 60-mil minimum.

B. Flashing Membrane

1. Flashing membrane shall be 60-mil fiberglass or polyester reinforced PVC sheet membrane.
2. Membrane shall be as manufactured and supplied by the roof membrane manufacturer.

C. Cover Strips

1. Cover strips shall be 60-mil nominal, fiberglass or polyester reinforced polyvinyl chloride (PVC) membrane, 8" in width, as manufactured by Johns Manville Roofing Systems Group, Sika Sarnafil, Inc., or Carlisle SynTec Incorporated. Cover strip color shall match color of the field membrane.

D. Membrane Adhesive

1. Solvent based contact adhesive for bonding the membrane to suitable horizontal and vertical substrates.
2. Approve Products
 - a. Sarnacol 2170 VC by Sika Sarnafil, Inc.
 - b. JM PVC Membrane Adhesive (Low VOC) by Johns Manville Roofing Systems Group
 - c. Sure-Flex PVC Low VOC Bonding Adhesive by Carlisle SynTec, Incorporated

E. Membrane Coated Sheet Metal

1. PVC film laminated to 24-gauge, galvanized sheet metal. Membrane coated sheet metal shall be white.

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2. Approved Products
 - a. Sarnaclad by Sika Sarnafil, Inc.
 - b. JM PVC Coated Metal by Johns Manville Roofing Systems Group
 - c. Sure-Flex Coated Metal by Carlisle SynTec, Incorporated
- F. Batten Strip
1. 1" wide extruded aluminum or Galvalume metal bar, pre-punched at 6" o.c.
 2. Approved Products
 - a. Sarnastop by Sika Sarnafil, Inc.
 - b. Anchor Bar by Johns Manville Roofing Systems Group
 - c. Metal Fastening Bar by Carlisle SynTec Incorporated
- G. Base Termination Fasteners – Steel
1. Corrosion-resistant, coated, self-tapping, self-drilling screw with low profile head.
 2. Fastener shall be FM Global approved and meet FM 4470 corrosion resistance requirements.
 3. Approved Products
 - a. Sarnafastener XP by Sika Sarnafil, Inc.
 - b. High Load Fastener by Johns Manville Roofing Systems Group
 - c. Carlisle HP-X Fastener by Carlisle SynTec, Incorporated
- H. Membrane Cleaners
1. High quality, clear solvent cleaner for removing dirt and other contaminants from PVC membranes.
 2. Approved Products
 - a. Seam Cleaner by Sika Sarnafil, Inc.
 - b. JM Single Ply Membrane Cleaner by Johns Manville Roofing Systems Group
 - c. Carlisle PVC Membrane Cleaner by Carlisle SynTec, Incorporated
- I. Traffic Walkway
1. Polyester reinforced, gray or yellow color, protection mat.
 2. Approved Products
 - a. Sarnatred V by Sika Sarnafil, Inc.
 - b. JM PVC Heavy-Duty Walk Pad by Johns Manville Roofing Systems Group
 - c. Sure-Flex PVC Walkway Roll by Carlisle SynTec, Incorporated

- J. Lap Seam Sealant
 - 1. Liquid thermoplastic sealant compound for sealing membrane edges where the reinforcement is exposed (if required by the selected membrane manufacturer).
- K. Water Cutoff Sealant
 - 1. Single component, gun grade, polyurethane or butyl-blend sealant used as water cutoffs behind flashings.
 - 2. Approved Products
 - a. Sikaflex 1a by Sika Sarnafil, Inc.
 - b. JM PVC Polyurethane Caulk by Johns Manville Roofing Systems Group
 - c. Carlisle Water Cutoff Mastic by Carlisle SynTec, Incorporated
- L. Prefabricated Components
 - 1. Premolded PVC flashings for sealing all inside and outside flashing corners as supplied by the selected membrane manufacturer.
 - 2. Premolded PVC pipe boot flashings for sealing stacks and vent pipe penetrations as supplied by the selected membrane manufacturer.
 - 3. Precut T-joint covers as supplied by the selected membrane manufacturer.
- M. Related Materials.
 - 1. Wood Nailers: See Section 06 10 53
 - 2. Induction Weld Plates and Fasteners: See Section 07 22 16.01
 - 3. Roof Insulation: See Section 07 22 16.01

2.03 Other Materials

- A. All other materials not specifically described but required for a complete and proper installation of the work in this section shall be as selected by the Contractor, approved by the Manufacturer, and subject to the approval of the Owner's Representative.

PART THREE – EXECUTION**3.01 Description**

- A. The latest Manufacturers' specifications and installation techniques are to be followed along with the following requirements. These specific minimum requirements must be included in the bid and are not to be altered.

3.02 Inspection

- A. Examine the areas and conditions under which work in this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until such conditions have been corrected.

3.03 Surface Conditions

- A. Surfaces scheduled to receive roofing are to be free of any standing water, frost, snow, or loose debris.
- B. Substrate is to be smooth, free of sharp projections, and free of obvious depressions.
- C. All metal fittings specified or shown on drawings are to be in place before roofing.
- D. All nailers shall be securely installed prior to roofing.
- E. All surfaces scheduled to receive Sarnafil membrane must be clean and smooth. The membrane must not be in physical contact with any bituminous materials such as asphalt or coal-tar pitch, other than where asphalt-resistant PVC membrane flashings are applied over residual asphalt.

3.04 Installation - General

- A. Perform all related work specified elsewhere necessary for the installation of the specified membrane system.
- B. Ensure that fasteners do not penetrate conduit or other miscellaneous items on the underside of the roof panels or steel purlins.
- C. The membrane Manufacturer's technical representative may take any seam samples deemed necessary to evaluate the work. Owner's Representative may take a seam sample of approximately 8" x 8" twice daily. Contractor shall be responsible for making watertight each sample area immediately after sample is cut.
- D. Prevent contamination of induction welding magnetic equipment with metal scraps. Also, prevent any debris from accumulating on the membrane in areas to be induction welded. Clean any such debris immediately prior to placement of induction welding equipment.
- E. Refer to the membrane Manufacturer's published information regarding the minimum and maximum temperatures approved during application and curing of membrane adhesives. Commence with roof application only when outside ambient air temperatures are forecast to meet the most restrictive of the published temperature criteria.
- F. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings are allowed without prior written approval from the Owner's Representative and membrane Manufacturer.
- G. All membrane rolls shall run the same direction within a given roof section. Once roll direction has been determined, do not change roll direction.

3.05 Installation of Induction Weld Plates and Fasteners

- A. Install insulation and induction weld plates and fasteners and standard plates and fasteners. Fastener locations and spacing shall be in accordance with Section 07 22 16.01 and as detailed and noted on the drawings.
- B. Install plates and fasteners tight and flat to insulation substrate with no dimpling of the substrate surface. Do not overdrive fasteners so as to prevent deformation of plates. Do not under-drive fasteners so that the plate is able to spin freely.

3.06 Installation of Roofing Membrane

- A. Unroll and position roofing membrane, without stretching, over a properly installed and prepared substrate. Laps in the membrane sheets shall be oriented as to not oppose the direction of drainage. When placing the membrane, ensure seam locations are held back a minimum of 24" from edges of drainage devices.
- B. Install field membrane in a manner to ensure that seams do not intersect a row of induction weld plates and fasteners. Field membrane seam must be no closer than 6" to a row of plates.
- C. Membrane shall be unrolled, lining up edge of roll with adjacent sheet. Sheets are to be overlapped a minimum of 3".
- D. Membrane shall be installed in a neat and orderly fashion.
- E. Induction Welding:
 - 1. General
 - a. Welding equipment shall be provided by or approved by the roofing membrane Manufacturer. Meet welding system Manufacturer's minimum requirements for electrical power and associated equipment. All mechanics intending to use the equipment shall have successfully completed a training course provided by the roofing membrane and induction welding system Manufacturers prior to welding.
 - b. All membrane to be welded shall be clean and dry.
 - c. Calibrate each induction welding tool a minimum twice daily (once in the morning and once after lunch) in accordance with the membrane Manufacturer's instruction to appropriate level for site conditions. Calibration data is to be recorded and stored for review by Manufacturer. Provide test cuts to confirm proper set-up.
 - d. Calibrate each induction welding tool if a temperature change of positive or negative 15°F is experienced.
 - e. Calibrate any induction welding tool that experiences a power loss such as a generator shutting off, or a welding tool plugged into a failed outlet.
 - f. When making test welds during the calibration of the induction welding tool, be sure to test the plates in the same assembly used in the actual installation. Induction weld plates shall not be secured to the substrate during calibrations.
 - g. Adjust induction welding tools to achieve maximum bond strength based on ambient temperature from 0 to 120°F.
 - h. Adjust energy level of induction welding tools in accordance with membrane Manufacturer's instruction to produce optimal bond of 100 percent.
 - 2. Induction Welding of Membrane
 - a. Activate the weld between membrane and plate using approved portable induction device. The induction coil shall be positioned over the center of the plate, +/- 1 inch. Portable induction device shall elevate the temperature of the plate from ambient to 400 to 500°F.

- b. When the induction welding cycle is complete, immediately place a magnetic cooling clamp on the welded assembly. This device must remain in place for a minimum of 60 seconds. Keep bottom of magnetic cooling clamps free of debris with a clean cotton cloth. Any indentations or defects in the membrane due to debris on magnets shall be patched.
 - c. Membrane shall be fully bonded to each plate.
 - d. All plates shall receive induction welding during the same workday as field membrane installation.
 - e. Perform daily test cuts of induction welded membrane locations. Five (5) test cuts are required after initial calibration of induction welding tools, and two (2) additional cuts are required after each time the induction welding tool is powered down.
- F. Seaming area is to be clean and free of dust, dirt, debris, and adhesives. When cleaning is required, follow the Manufacturer's procedures for cleaning.
- G. Laps are to be hot air welded using the membrane manufacturer approved automatic welder. Laps shall be welded daily. All locations of machine starts and stops shall be marked on the membrane by the machine operator as they occur, so these locations can be carefully probed.
- H. All seams are to be fully welded a minimum of 1" from the edge of the lap with an uninterrupted flow of grey material from the edge of the completed seam.
- I. Allow seams to cool and then check for fishmouths and other voids. Repairs are to be made daily by hot air welding.
- J. All T-laps shall be dog eared, hand rolled, and patched, using hot air welded T-joint covers, as supplied by the membrane Manufacturer. Color shall match the field membrane color.
- K. All locations of machine starts and stops shall be marked on the membrane by the machine operator as they occur, and shall be patched as specified for T-joints.
- L. Membrane is to be secured at the roof perimeter by one of the following methods:
- 1. Fastening through the membrane with Manufacturer-approved plates and fasteners into the specified substrate at 12" o.c., followed by installing a separate PVC membrane flashing.
 - 2. Fastening the deck flange of a membrane clad metal flashing at 3" o.c. through the membrane and into the indicated substrate.
- M. Membrane fasteners and plates shall be installed around all roof penetrations and all changes in plane greater than 15°. Soil pipes, stacks, supports, and posts require four fasteners placed evenly around the penetration.

3.07 Flashings

- A. Flashings shall be constructed and terminated as per the detail drawings. Flashings shall extend a minimum of 8" up the vertical substrate. Where separate base flashing membrane is specified on the drawings, flashing shall overlap a minimum of 6" onto the field membrane.
- B. Adhesive application rates shall be as specified by the membrane Manufacturer.

- C. Adhesives shall be applied so as to achieve 100% coverage, in an even coat, without holidays, globs, puddles, or other irregularities.
- D. Apply contact adhesive over the clean, dry, compatible substrate, using an approved solvent-resistant roller. Allow adhesive to dry completely before installing flashing membrane.
- E. Coat backside of flashing sheet with adhesive. Do not allow adhesive to dry completely on the underside of the membrane. When the membrane adhesive has dried slightly to produce strings when touched with a dry finger, the coated membrane shall be placed onto the previously coated substrate, being careful to avoid wrinkles or air pockets. The flashings shall be pressed firmly into place using a hand roller.
- F. The specified water cutoff sealant shall be applied behind the top edges of the flashings. The top edges of flashings shall be fastened per the Manufacturer's requirements at a minimum, unless superseded by the detail drawings.
- G. All flashings shall be fully bonded to the substrate.
- H. Utilize all pre-manufactured components available by the membrane Manufacturer in construction of flashings, including inside/outside corners, pipe boots, and cone flashings. Color shall match the field membrane.
- I. All vertical laps at the horizontal to vertical transition shall be patched using heat welded 60-mil flashing membrane.
- J. Existing drain bowls and drain rings are to be cleaned. Broken or missing drain strainers, rings, and/or bolts shall be replaced. All residue shall be removed from drains prior to installing membrane, and water cutoff sealant shall be applied between the drain flange and the membrane.

3.08 Membrane Clad Metal Flashings

- A. Where indicated on the detail drawings, install membrane clad metal flashings.
- B. Form and install flashings in the shapes and profiles indicated on the detail drawings.
- C. Metal flashings shall be fastened in accordance with the detail drawings. If the Manufacturer's fastening requirements exceed those shown on the drawings, then Manufacturer's requirements are to be followed.
- D. Adjacent flashing sheets shall be spaced 1/4" apart. The ends of each sheet shall be fastened 3" o.c. along the butt joint. The joint shall be covered with 2" wide aluminum tape. A 5" wide strip of flashing membrane shall be hot air-welded over the joint.
- E. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings are allowed without prior written approval from the Owner's representative and membrane Manufacturer.

3.09 Membrane Patching

- A. Where adjacent patches are within 12" of each other, one long patch shall be used to incorporate both locations to be patched, as opposed to using two smaller separate patches.
- B. Patches shall not overlap onto one another. Any locations where patches overlap shall be covered with one large patch that completely covers all edges of underlying patches. Edges of this large patch shall be welded onto the primary field or flashing membrane material, and not onto the underlying patching materials. Where installation of this large patch results in the formation of three-way overlaps, subsequently patch these T-joints as specified.

- C. Provide corrective patching of all membrane cuts, punctures, and defective seams unable to be properly repaired by hot air welding.
- D. The Owner may require removal and replacement of the roof system at any area containing more than six patches in a 10' x 10' area, when the repairs are required due to poor workmanship or roof membrane damage.

3.10 Roof Walkways

- A. Walkways shall be installed in a neat, orderly fashion and where indicated on roof plan or in specifications.
- B. Chalk line walkway location on roof membrane and position walkway in-place, using chalk line as a guide.
- C. Install walkway continuous and centered with previous walkway material. Apply a continuous coat of membrane adhesive to the field sheet and back of walkway and roll into place in accordance with Manufacturer's requirements.
- D. Walkway shall be secured to the roof membrane by hot air welding. All edges shall be continuously welded watertight.

3.11 Temporary Water Cutoffs

- A. Temporary water cutoffs are to be constructed at the end of each working day to protect the insulation, roofing, building, and building interior from damage due to wind, snow, and rain.
- B. Contractor shall provide methods and materials compatible with the membrane, to provide a positively adhered weather and watertight seal, capable of withstanding inclement weather and ponded water.
- C. Construction of temporary water cutoffs is to be detailed by the Contractor and approved by the Manufacturer and the Owner's Representative.
- D. Temporary water cutoffs and contaminated membrane shall be neatly trimmed and removed at the start of the next workday.

3.12 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed.
- B. Contractor shall correct any deficient work prior to installing subsequent work or notification of completion.

3.13 Cleaning

- A. Contractor shall follow the requirements of Section 02 41 20 - Roof Demolition and Cleanup.

- End of Section -

PART ONE – GENERAL**1.01 Description**

- A. Furnish and install roof-related sheet metal work per the drawings and specifications, including all clips, sealant, fasteners, and joining to make weathertight and watertight.

1.02 Quality Assurance

- A. Standards: Comply with all pertinent standards specified in the contract documents, including those listed below. If the building code references a specific edition or revision of an individual standard, then comply with that edition or revision. Otherwise, comply with the latest published edition or revision available on the date the Contractor submits its price proposal to the Owner.
 - 1. *ANSI/SPRI ES-1*
 - 2. *Architectural Sheet Metal Manual*, Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - 3. *The NRCA Roofing and Waterproofing Manual* National Roofing Contractors Association
 - 4. Manufacturer's published specifications, product data sheets, application instructions, and technical bulletins
 - 5. *Annual Book of ASTM Standards*, ASTM International
 - 6. Sealant, Waterproofing & Restoration Institute (SWR Institute) written recommendations and technical bulletins
- B. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section.
- C. In acceptance or rejection of the work of this section, the Owner will make no allowance for lack of skill on the part of the workers.

1.03 Submittals

- A. General - Comply with provisions of Section 01 30 01.
- B. Submit product information or material list noting fasteners, sealants, sealant primers, sealant tapes, and other required accessories.
- C. Submit color chart or physical samples for selection of prefinished metal color by the Owner.

1.04 Delivery, Storage, and Handling

- A. Use all means to protect the materials of this section before, during, and after installation and to protect the work and materials of all other trades. Roof surfaces shall be protected from damage at all times.
- B. Deliver only new materials to the job site. Materials to be stored in such a manner as to be protected from wind displacement, rain, snow, or inclement weather. Do not overstress the deck, when storing materials on the roof.

- C. In the event of damage, immediately make all repairs and replacements to the approval of the Owner and at no additional cost to the Owner.
- D. Follow the Manufacturer's recommendations for storage of temperature sensitive materials.

1.05 Scheduling

- A. All new sheet metal work shall be closely coordinated with the installation of the new roofing system.
- B. Sheet metal shall be installed directly after roofing work such that roofing terminations shall not be left unprotected by metal.

1.06 Warranty

- A. All new materials and workmanship provided under this section of the specifications shall be guaranteed in writing by the Contractor for two years.
- B. The Contractor shall maintain all roof-related sheet metal in a watertight condition without cost to the Owner during the Contractor's warranty period.
- C. Warranty: See Section 01 78 36.

PART TWO – PRODUCTS

2.01 General

- A. Manufacturer-supplied V.O.C. compliant products shall be bid and used if V.O.C. regulations are in effect at the project location at the time of bidding.
- B. No product shall contain any asbestos or asbestos-related products.
- C. Approved equal products must be proposed prior to the bid due date, and approval shall be granted by the Owner prior to award of contract. Otherwise, substitutions shall not occur.

2.02 Materials

- A. Sheet metal components, metal types, finishes, gauges/thicknesses, joint types, and ANSI/SPRI ES-1 compliance data are specified in the detail drawings.
- B. Where sheet metal is required and no material or gauge is indicated on the drawings, provide the highest quality and gauge commensurate with the referenced standards.
- C. Contractor shall use gauges or thicknesses listed in the drawings or as prescribed in the referenced standards for specific girths, whichever is greater.
- D. Approved equal products must be proposed prior to the bid due date, and approval shall be granted by the Owner prior to award of contract.

2.03 Material Specifications

- A. Galvanized Steel
 - 1. Galvanized steel shall be G90 material.

2. Specifications References
 - a. ASTM A 653/A 653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process
 3. Continuous clips, where specified for use, shall be galvanized steel, one gauge thicker than the primary component being secured.
- B. Kynar Prefinished Steel
1. G90 galvanized steel with a polyester wash coat on the concealed side, and Kynar 500/Hylar 5000 coating on the exposed side.
 2. Approved Products
 - a. UNA-CLAD by Firestone Building Products
 - b. PAC-CLAD by Peterson Aluminum Corporation
 - c. ColorKlad by Ryerson Inc.
 - d. Approved equal
 3. Color shall be selected by the Owner from the Manufacturer's standard colors.
 4. Continuous clips, where specified for use, shall be galvanized steel, one gauge thicker than the primary component being secured.

2.04 Coated Carbon Steel Fasteners

- A. All fasteners shall be carbon steel with corrosion-resistant coating, unless otherwise noted. Fasteners shall show no more than 15 percent red rust corrosion after 30 cycles of Kesternich testing.
- B. Masonry/Concrete Fasteners
1. Fasteners shall be threaded or expansion type as required by site conditions.
 2. Threaded fasteners shall be corrosion-resistant with hex washer head.
 3. Expansion fasteners shall be zinc-alloy jacketed with stainless steel drive pin and mushroom head (nylon or plastic anchors are not approved).
 4. Corrosion-resistant, watertight, EPDM sealing washer shall be supplied for either threaded or expansion type fasteners.
 5. Approved Products
 - a. Tapcon Hex Washer Head with Blue Climaseal or White UltraShield Coating by ITW Buildex
 - b. Tapper with Perma-Seal Coating by Powers Fasteners, Inc.
 - c. Metal Hit Anchor by Hilti
 - d. Zamac Hammer-Screw with Carbon Steel Drive Screw by Powers Fasteners, Inc.

- e. Masonry Anchor by OMG
 - f. Dekfast ZAC Anchor with Sentri XP Coating by SFS Group USA, Inc.
 - g. Approved equal
6. Fasteners to be nominal 3/8" thickness minimum and of sufficient length to penetrate the masonry/concrete 1".
- C. Steel/Wood Fasteners
- 1. Corrosion-resistant, self-drilling, self-tapping threaded fastener with hex washer head for exposed fastening.
 - 2. Corrosion-resistant, watertight, EPDM sealing washer for exposed fastening.
 - 3. Approved Products – Steel Fasteners
 - a. Tek Screw with Climaseal Coating by ITW Buildex
 - b. Dekfast ZAC Impax Anchor with Sentri XP Coating by SFS Group USA, Inc.
 - c. Approved equal
 - 4. Approved Products – Wood Fasteners
 - a. TruGrip GT with Climaseal Coating by ITW Buildex
 - b. Dekfast ZAC Tapping Fastener with Sentri XP Coating by SFS Group USA, Inc.
 - c. Approved equal
 - 5. Fasteners to be nominal 1/4" thickness minimum and of sufficient length to penetrate the steel 0.5" or into wood minimum 1.5".
 - 6. 1.25" x 11-gauge, galvanized, ring shank roofing nails shall be used for concealed fastening into wood.

2.05 Other Materials

- A. Sealants and Related Accessories
- 1. General: Except as specifically otherwise directed by the Owner's Representative, use only the type of sealants described in this section.
 - a. Silyl-Terminated Polyether (Hybrid) Sealant
 - 1) Approved Products
 - A) MasterSeal NP 150 by BASF Building Systems
 - B) Approved Equal

2. Cleaner
 - a. Industrial solvent recommended by the sealant Manufacturer, such as Isopropyl Alcohol, Naphta, Mineral Spirits, Xylol, Toluene, MEK, or Manufacturer-supplied cleaner.
3. Primer
 - a. General: Use type of primer recommended by the sealant Manufacturer for use with the selected sealant on the substrate type to receive the sealant.
 - b. Primer for Silyl-Terminated Polyether (Hybrid) Sealant
 - 1) Approved Products
 - A) MasterSeal P 173 by BASF Building Systems
 - B) Approved equal
 - c. Primer for Urethane Sealant
 - 1) Approved Products – Non-porous surfaces including sheet metal surfaces
 - A) MasterSeal P 173 by BASF Building Systems
 - B) Sikaflex Primer 260 or 449 by Sika Corporation U.S.
 - C) Approved equal
 - 2) Approved Products – Porous surfaces including concrete, masonry, stone and wood
 - A) MasterSeal P 176 Primer by BASF Building Systems
 - B) Sikaflex Primer 429 by Sika Corporation U.S.
 - C) Approved equal
4. Backer Rod
 - a. General: Use only those backup materials that are specifically recommended for this installation by the sealant Manufacturer and that are non-absorbent, non-staining, and non-gassing when punctured. Backup materials must be 1.5 times the width of the joint.
 - b. Backer rod shall be one of the following:
 - 1) MasterSeal 921 by BASF Building Systems
 - 2) Approved equal

- B. Sealant Tape
 - 1. Permanently elastic isobutylene tripolymer tape or isobutylene isoprene copolymer tape that will bond to galvanized steel; aluminum; siliconized polyester, and polyvinyl fluoride painted metals; as well as wood, concrete, etc., 1/8" x 1" nominal cross section, meeting Federal Specification TT-C 1796A, Type II, Class B, with minimum 20 psi adhesive tensile strength according to ASTM C 907, with a service temperature range of -60°F to 212°F.
 - a. Approved Products
 - 1) Sika Lastomer – 95 Gray by Sika Corporation U.S.
 - 2) Sika Lastomer – 65 White by Sika Corporation U.S.

PART THREE – EXECUTION

3.01 Inspection

- A. Examine the areas and conditions under which work of this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.
- B. Verify that the work by all other trades has been completed prior to installing roof-related sheet metal work.

3.02 Fabrication

- A. Sheet metal shall be formed accurately to sheet shapes as indicated on the drawings and in conformance with details on the approved shop drawings. Contractor shall be responsible for all dimensions.
- B. Counterflashing shall be furnished where indicated on drawings. Form counterflashing sections not less than 8'0" in length, unless otherwise approved prior to fabrication and installation. Counterflashing shall overlap base flashing a minimum of 3".
- C. Coping caps and edge metal shall be furnished where indicated on drawings. Form coping and edge metal in sections not less than 8'0" in length, unless otherwise approved prior to fabrication and installation.
- D. Miter all inside and outside corner joints in coping caps, edge metal, and expansion joints. Joints adjacent to inside and outside corners shall be placed exactly 24" each direction from the corner, unless otherwise approved prior to fabrication and installation.
- E. Break counterflashing, coping cap, or edge metal sections where they cross building expansion joints, if applicable.
- F. Horizontal flanges of edge metal shall be 4" minimum with rounded corners.
- G. All exposed edges of cut sheet metal shall be folded back on concealed surfaces.
- H. Form, fabricate, and install all sheet metal so as to adequately provide for expansion and contraction in the finished work.

- I. Continuous clips shall be fabricated using metal material of greater thickness than the components being secured.
 - 1. Refer to 2.03 Materials Specifications for criteria.
- J. Where a continuous clip is specified on the drawings, the primary component shall be continuously crimped along the bottom edge of the clip.

3.03 Dissimilar Metals

- A. Dissimilar materials in contact, which are subject to electrolysis, shall be protected against such action prior to installation. Protective materials shall not be visible after installation. Protect metals using coatings recommended by Manufacturer, or separate using felt or EPDM membrane.

3.04 Weatherproofing

- A. Finish all sheet metal watertight and weathertight where so required.
- B. Where lap seams do not have a joint cover, lap 3" minimum according to pitch.
- C. Make all lap seams in the direction of the water flow.

3.05 Joints

- A. Join parts with rivets or sheet metal screws where necessary for strength or stiffness.
- B. Provide suitable watertight expansion joints for all sheet metal as required for proper installation in accordance with the schedule of roof-related sheet metal and detail drawings.
- C. Sealant application shall be neatly and thoroughly performed for a watertight seal. Sealant shall be installed within all loose lock joints, under joint cover plates, and in other locations shown on the drawings. All exposed sealant joints shall be dry tooled to the profile shown on the detail drawings. If required, Contractor shall build custom tools on job site to provide the specified profile(s).
- D. Surfaces to receive sealant shall be thoroughly cleaned as recommended by the sealant Manufacturer. All adhesive residue, rust, old caulking and/or other contaminants shall be removed down to the substrate to which sealant bonding is intended.
- E. All surfaces to receive sealant shall be primed initially with the sealant Manufacturer's recommended primer.

3.06 Fastening

- A. Secure metal as per detail drawings. Do not in any case install exposed fasteners on a horizontal plane, unless specifically shown on a particular detail drawing.
- B. All clips and cleats are to be fastened 6" o.c., unless otherwise noted on the drawings.
- C. On the roof facing side, copings are to be fastened 12" o.c. with EPDM washered fasteners, unless noted otherwise on the drawings.
- D. Embedded metal flanges are to be fastened 3" o.c., staggered.
- E. The specified spacings for all fasteners in perimeter metal work shall be reduced by a factor of two in the corner zones of each roof section. Corner zones shall be as calculated based upon the applicable version of ASCE-7.

- F. For concealed fastening into wood, use annular ring shank roofing nails.
- G. For fastening into concrete, use masonry/concrete anchors with EPDM washers. Use only metal anchors. Plastic or nylon anchors shall not be used.
- H. For exposed fastening into wood, use screws with EPDM washers. Deformed shank nails shall not be used.
- I. Ensure that fasteners are not overdriven such that EPDM washer damage results. Remove and replace all such damaged fasteners, using oversized fasteners.

3.07 Protection

- A. Roof surfaces and flashing shall be adequately protected to prevent damage during the installation of metal work or during storage of the required materials. The Contractor shall replace any damaged construction, at no cost to the Owner.

3.08 Verification

- A. Contractor shall inspect the work described by this section of the specification and shall verify that all components are complete and properly installed.
- B. Contractor shall correct any deficient work prior to installing subsequent work or notification of completion.

3.09 Cleaning

- A. Debris from sheet metal work shall be frequently removed from building site as it accumulates.
- B. Leave job site absolutely clean at completion of work, and properly dispose of all construction debris such as metal trimmings, fasteners, rivet nails, sealant tube ends, etc.
- C. Refer to Section 02 41 20 – Roof Demolition and Cleanup for additional requirements.

- End of Section -

RENO-SPARKS CONVENTION AND VISITORS AUTHORITY


2019 ROOF REPLACEMENT HALL 3 - SECTIONS A AND B

4590 S. VIRGINIA STREET
RENO, NEVADA 89502
PROJECT NO. 19RENRENOR009B

DRAWING RECORD			
REV. NO.	DESCRIPTION	DATE	BY
NA	BID SET	06/10/19	DHAB



LEGEND:

	PROJECT AREA	
4	ROOF SECTION	Scale: NONE

ROOF & PAVEMENT CONSULTANTS




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www.benchmark-inc.com

INDEX OF SHEETS		
NO.		DESCRIPTION
T-1	TITLE SHEET	
R-1	ROOF PLAN	
R-2	ROOF DETAILS	
R-3	ROOF DETAILS	
R-4	ROOF DETAILS	

DATE: 06/10/19	DRAWN BY: A. BEAR
PROJECT: 19RENRENOR009B	PRODUCED BY: D. FENNEL
CLIENT: RENO-SPARKS CONVENTION CENTER	DESIGNED BY: M. J. NELSON
PROJECT NO. 19RENRENOR009B.dwg	

CLIENT: RENO-SPARKS CC & VISITORS AUTHORITY
PROJECT: RENO-SPARKS CONVENTION CENTER HALL 3
ADDRESS: 4590 S. VIRGINIA STREET RENO, NEVADA 89502
DRAWING TITLE: TITLE SHEET



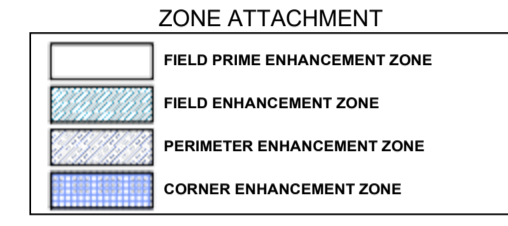
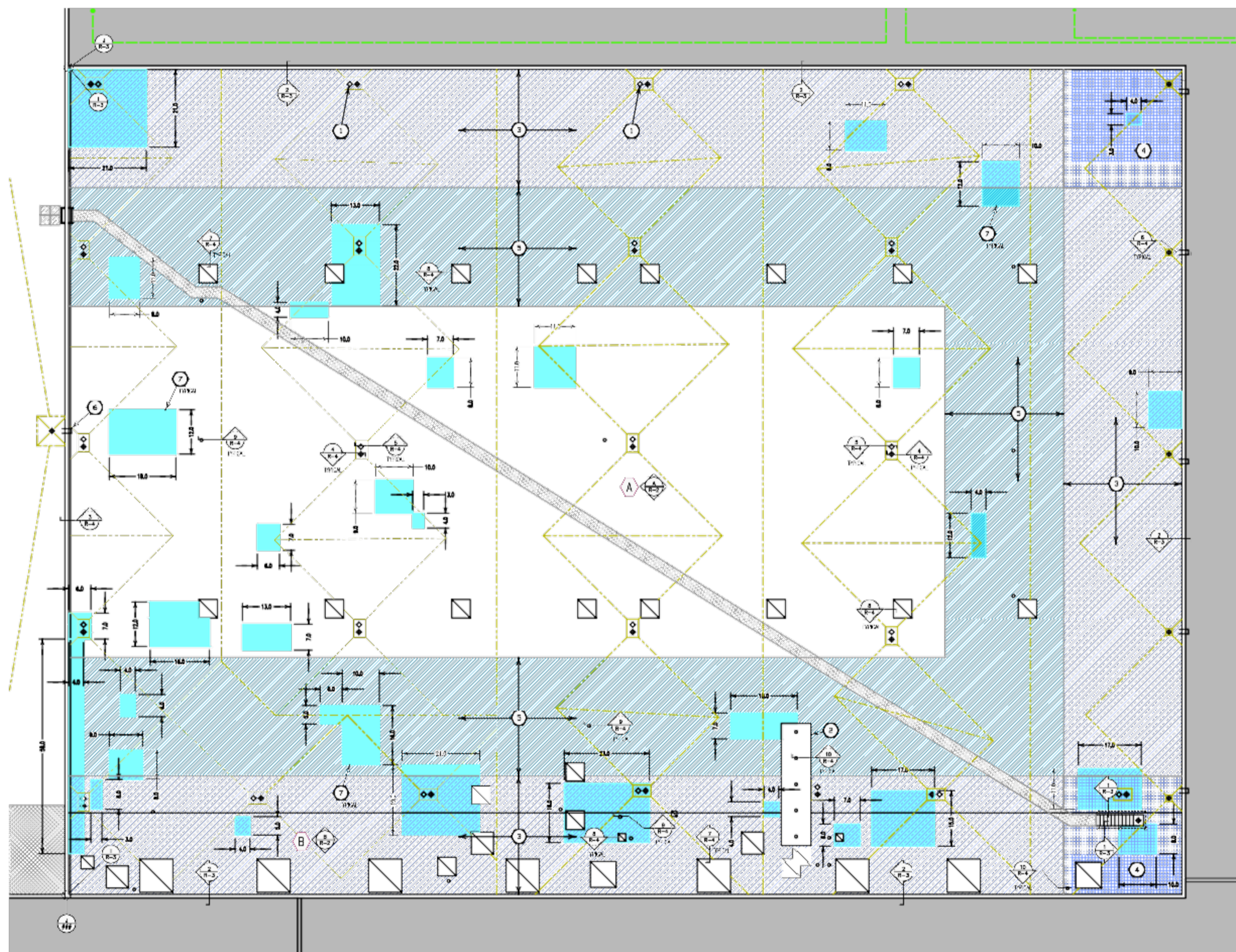
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CLIENT: RENO-SPARKS CC & VISITORS AUTHORITY
PROJECT: RENO-SPARKS CONVENTION CENTER HALL 3
ADDRESS: 4590 S. VIRGINIA STREET
RENO, NEVADA 89502
DRAWING TITLE: TITLE SHEET

SHEET NUMBER: T-1

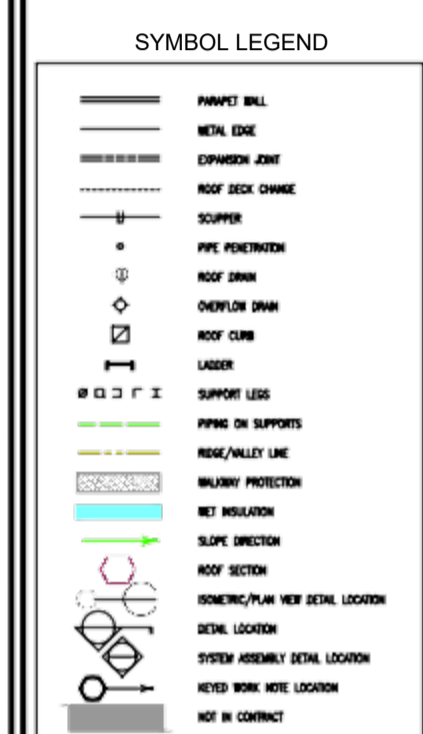
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- ### KEYED WORK NOTES
- FURNISH AND INSTALL 2" CAST IRON WATER DAM TO FIT EXISTING DRAIN ASSEMBLY.
 - INSTALL TAPERED INSULATION AS REQUIRED TO FORM A SMOOTH TRANSITION AND PROVIDE POSITIVE DRAINAGE.
 - 32" WIDE PERIMETER ENHANCEMENT ZONE.
 - 32"X32" WIDE CORNER ENHANCEMENT ZONE.
 - 32" WIDE FIELD ENHANCEMENT ZONE.
 - REMOVE SCUPPER FACE. FABRICATE A MEMBRANE CLAD SCUPPER FACE PLATE TO FIT EXISTING EXTENDING 4" MINIMUM ON ALL SIDES OF THE SCUPPER AND SECURE WITH LOW PROFILE FASTENERS TWO PER SIDE MINIMUM. HOT-AIR WELD NEW WALL FLASHING TO THE MEMBRANE CLAD SCUPPER FACE PLATE.
 - REMOVE WET INSULATION DOWN TO POLYETHYLENE SHEETING, INFILL WITH NEW INSULATION FLUSH WITH EXISTING INSULATION. SEE SECTION 01 11 00 FOR QUANTITY ALLOWANCES.

- ### GENERAL NOTES
- CONTRACTOR IS TO INSPECT THE UNDERSIDE OF THE DECK FOR ELECTRICAL CONDUIT WITHIN THE FLUTES. CONTRACTOR IS RESPONSIBLE TO LOCATE MARK AND AVOID PENETRATING WITH FASTENERS.
 - CONTRACTOR IS TO HIRE AN ELECTRICIAN TO LOCATE AND MARK ALL CONDUITS LOCATED ABOVE THE ROOF DECK PRIOR TO BEGINNING CONSTRUCTION.
 - DISCONNECT AND RAISE ALL CURBS TO ACHIEVE 8" MINIMUM FLASHING HEIGHT FROM THE FINISHED ROOF.
 - FIELD WRAP LADDER SUPPORTS SIMILAR TO DETAIL 10 SHEET R-4.
 - CUT A 6" WIDE BY 4" TALL RECTANGULAR OPENING IN THE WALL AT ALL EXISTING ROUND THROUGH WALL SCUPPER LOCATIONS. INSTALL SCUPPER INSERT, FLASHINGS AND SCUPPER FACE PLATE AS DETAILED.
 - RAISE ALL SOIL PIPES AS REQUIRED TO ACHIEVE 8" FLASHING HEIGHT FROM THE FINISHED ROOF.
 - INSTALL TAPERED INSULATION CRICKETS AT HIGH SIDES OF CURBS 18" OR LARGER TO DIVERT WATER AROUND THE CURB.
 - PROVIDE AND INSTALL 6" WIDE YELLOW COATING (AS APPROVED BY THE MEMBRANE MANUFACTURER) STRIP 10' FROM THE PERIMETER EDGE AT THE EAST, WEST AND SOUTH SIDES OF THE ROOF.
 - FOR DETAILS NOT INDICATED ON THE DRAWING DEFAULT TO ROOFING MANUFACTURERS MOST STRINGENT DESIGN FOR WARRANTABLE DETAILS. THE INTENT OF THE DETAILS ARE INDICATED BY THE SPECIFICATION AND DRAWINGS. MINIMAL AND SUBSTANDARD DETAILS WILL NOT BE ACCEPTED.
 - WHERE DETAILS ARE INDICATED OR FOUND TO BE "SIMILAR" THE BASIC DETAIL CONCEPT IS UNCHANGED HOWEVER THE DECK, INSULATION SUBSTRATE ETC. MAY BE DIFFERENT THAN SHOWN.



GENERAL DRAWING NOTE:
 THIS DRAWING IS INTENDED FOR ORIENTATION, APPROXIMATE CONFIGURATION AND LOCATION OF DETAILS. CONTRACTOR SHALL FIELD VERIFY ALL ITEMS FOR BIDDING AND INSTALLATION PURPOSES.

DATE:	06/10/19
DRAWN BY:	A. BEAR
CHECKED BY:	D. HENSEL
DESIGNED BY:	M. WILSON
PROJECT MANAGER:	J. STEPHAN
PROJECT:	19RENENR0009002.dwg

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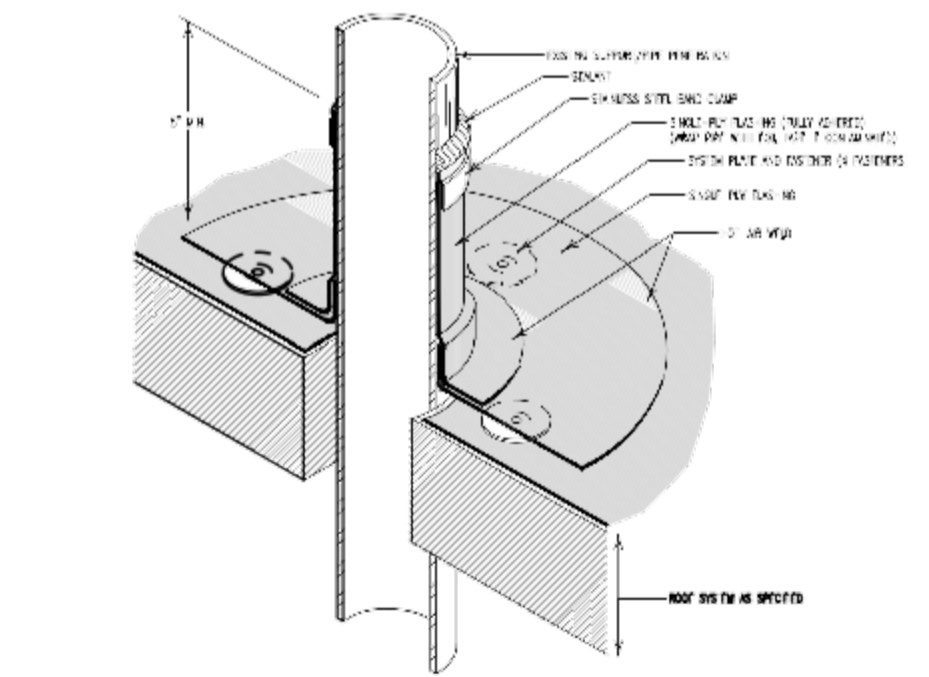
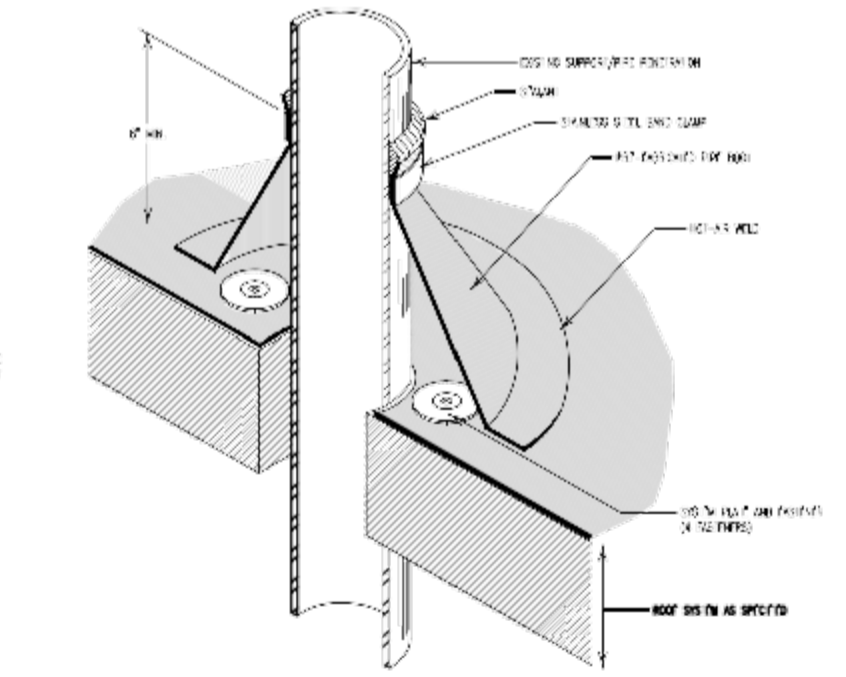
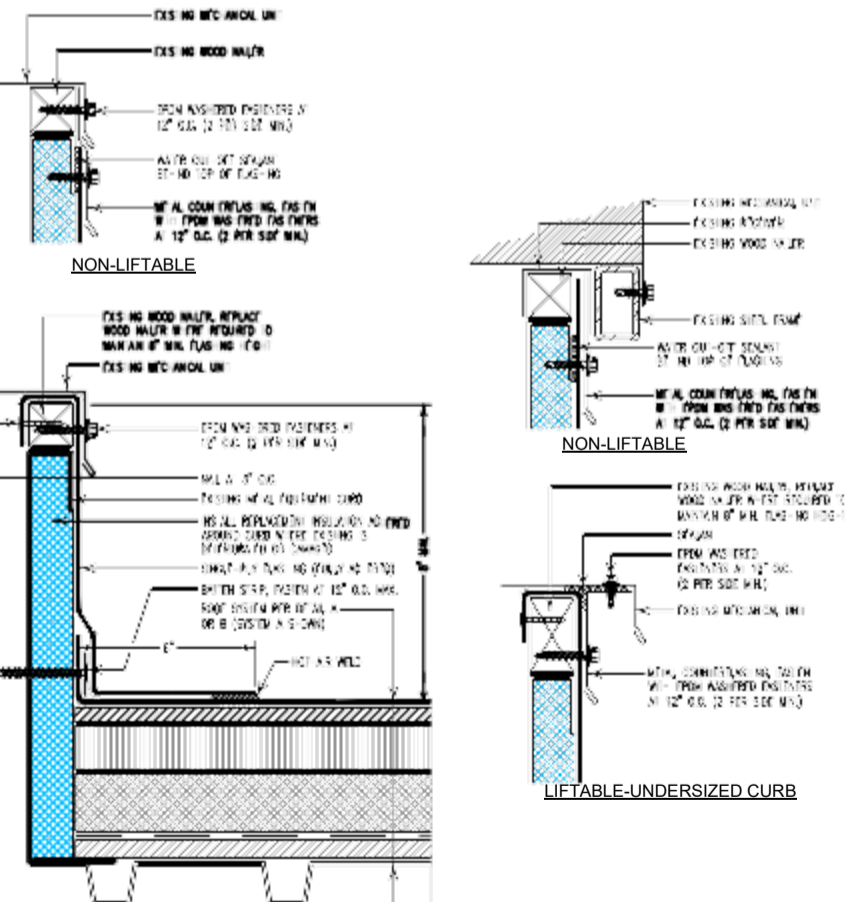
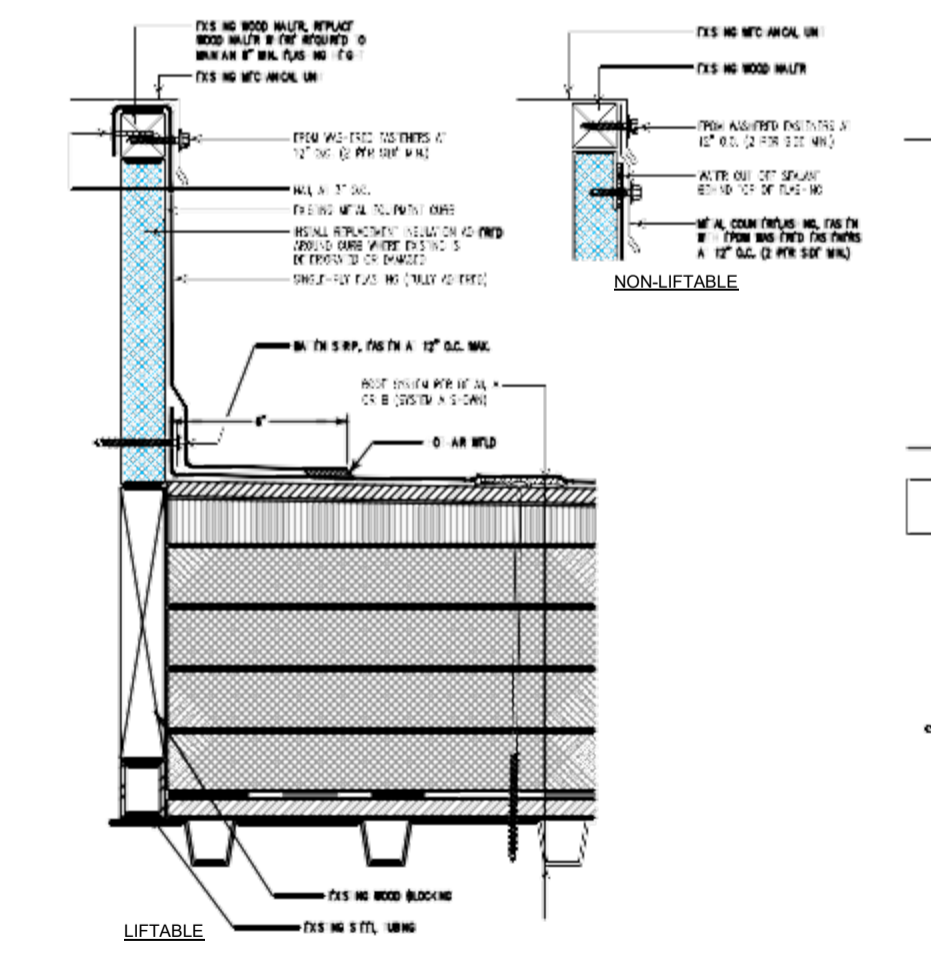
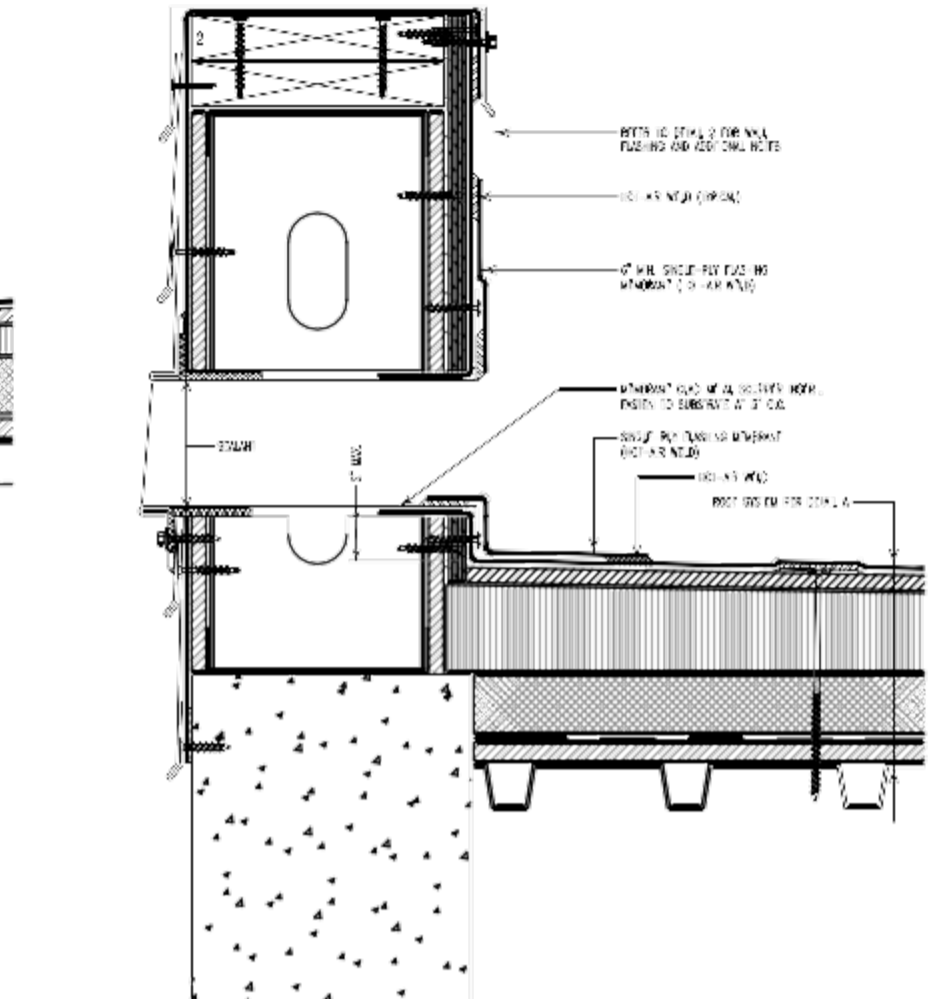
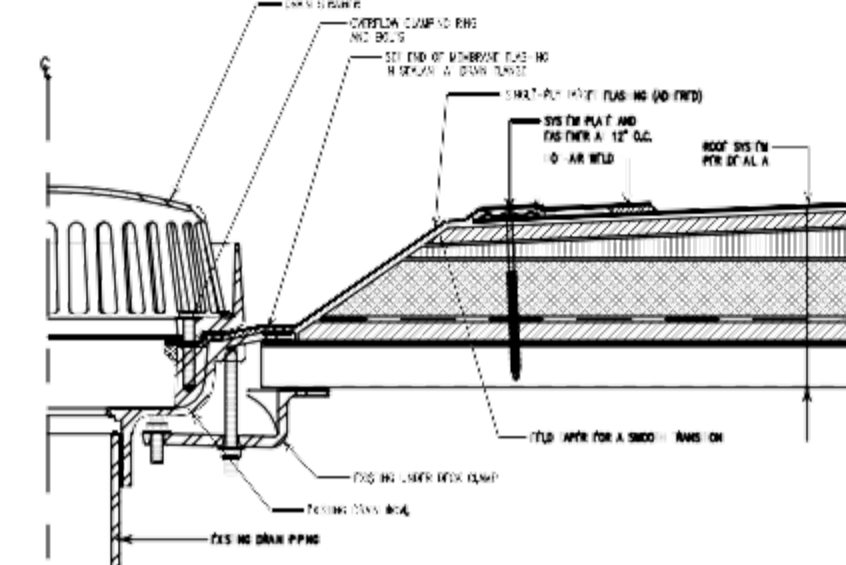
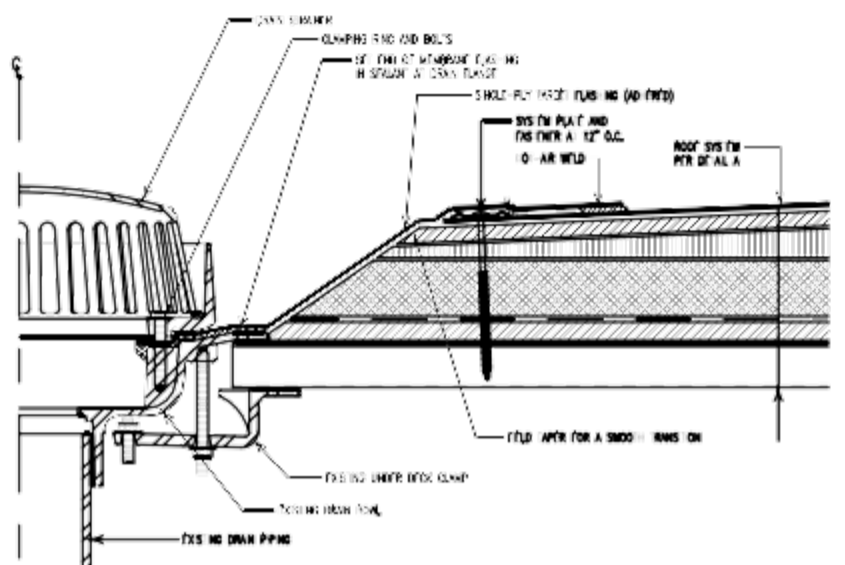
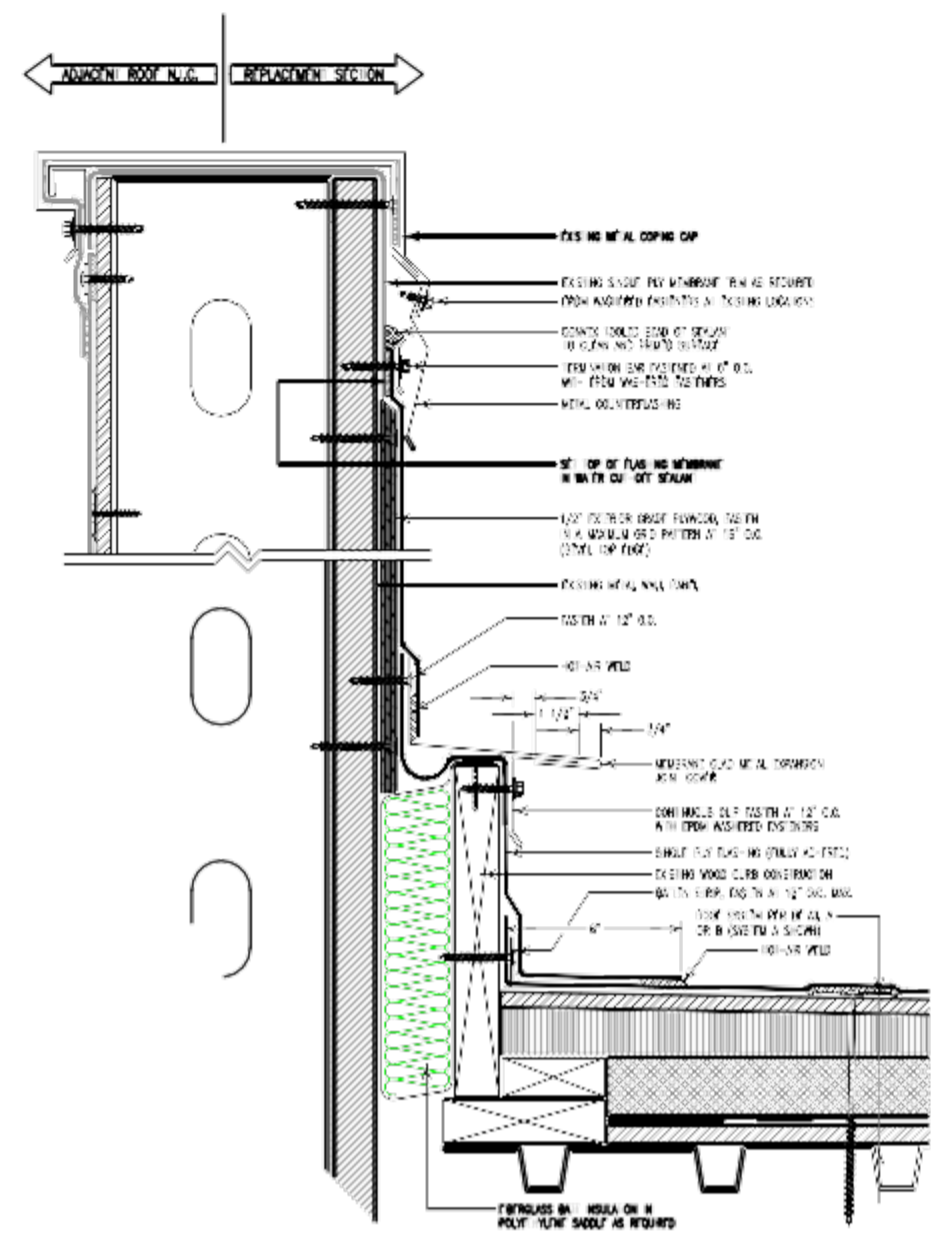
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PROJECT: **RENO-SPARKS CONVENTION CENTER HALL 3**

DRAWING TITLE: **ROOF PLAN**

SHEET NUMBER: **R-1**

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DATE	06/10/19
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DRAWING TITLE: ROOF DETAILS

SHEET NUMBER: R-4