

BID FOR
TMWRF LABORATORY BUILDING ROOF REPLACEMENT

BID # 18/19-006

PWP # WA-2018-248

BIDS DUE NOT LATER THAN: 1:45 PM ON AUGUST 15, 2018

PUBLIC BID OPENING: 2:00 PM ON AUGUST 15, 2018

[NOTE: TIME BIDS ARE DUE IS DIFFERENT FROM BID OPENING TIME]



431 PRATER WAY
P.O. BOX 857
SPARKS, NV 89432-0857

Company Name: _____

**CITY OF SPARKS
NOTICE TO BIDDERS
TMWRF LABORATORY BUILDING ROOF REPLACEMENT
BID #18/19-006 / PWP #WA-2018-248**

NOTICE IS HEREBY GIVEN that the City of Sparks, Nevada, will receive written sealed bids only, for the project listed above. Said bids must be in the hands of the Contracts and Risk Manager at 431 Prater Way, Sparks, Nevada, **NO LATER THAN 1:45 PM ON AUGUST 15, 2018**. Bids postmarked prior to, but not received until after this deadline will not be accepted. Vendor bid response submittals may not be sent to the City of Sparks via the Internet/e-mail and will not be entertained for award by the City of Sparks. The right is reserved to reject any Bid/Proposal or to accept the Bid/Proposal which is deemed by the City of Sparks to be in the best interest of the City of Sparks. The City of Sparks reserves the right to waive any irregularities and/or informalities in the bid process.

All Bids are to be marked clearly on the outside. Bids will be opened and publicly read at **2:00 PM ON AUGUST 15, 2018**, at Sparks City Hall, 431 Prater Way Sparks, NV 89431.

PROJECT DESCRIPTION: Replacement of the existing roofing system on the laboratory building at the Truckee Meadows Water Reclamation Facility (TMWRF)

PRE-BID MEETING: A **MANDATORY** pre-bid meeting will be held at the project site Training Room (8500 Cleanwater Way), at 7:30AM on August 2, 2018. Contractors wishing to submit bids on this project must attend the pre-bid meeting to be considered in evaluation.

BONDING/LICENSING: A Bid Bond in the amount of 5% of bid amount is required. This bid bond will function as a penalty in the event the successful bidder fails to enter into a written contract with the City in accordance with the bid documents. Additionally, the City will be entitled to actual damages, if any. Prospective bidders will be required to have a current Contractor's License under the Nevada State Law for the type of work specified herein.

The work to be performed under this Contract shall be commenced by the successful Bidder after all executed Contract documents have been submitted, and after being notified to proceed by the City of Sparks.

Bid documents and specifications may be obtained from the City of Sparks website. Please visit <http://www.cityofsparks.us/bids> to obtain complete bid documents. There is no cost to use the system or obtain plans, but registration at the site is required. It is the responsibility of all potential bidders/responders to monitor the Purchasing Division's website for any changing information prior to submitting their bid/proposal. The City of Sparks will not be responsible for the timeliness or completeness of information provided by any 3rd party bid listing or re-selling service. For further information, contact the Purchasing Division at dmarran@cityofsparks.us or at (775) 353-2273. The individual responsible for coordinating this bid is: Dan Marran, CPPO, C.P.M. – Contracts and Risk Manager

Reno Gazette Journal Legal Notices Section
Publish Date: July 25, 2018
Proof of publication required

Bidder's Checklist

Bidders are instructed to complete and return the following forms in order for their bids to be complete. Failure to return the following items may result in your bid being declared “non-responsive.”

1. _____ Bid Item Schedule
2. _____ Bidder Information Sheets
3. _____ Subcontractor Information Form (5% list due with bid submittal)
4. _____ Acknowledgement and Execution Form
5. _____ Certification Regarding Debarment
6. _____ “Certificate of Eligibility” (Local Preference) - If Contractor wishes to potentially apply their preference.
7. _____ Bid Bond
8. _____ Signed Bid Addenda (if applicable)

**CITY OF SPARKS
 BID ITEM SCHEDULE**

BID TITLE: TMWRF LABORATORY BUILDING ROOF REPLACEMENT

BID #18/19-006 / PWP# WA-2018-248

PRICES must be valid for 90 calendar days after the bid opening.

COMPLETION of this project is expected **PURSUANT TO CONTRACT DOCUMENTS.**

BIDDER acknowledges receipt of _____ Addenda.

 Bidder Name

 (signature)

BASE BID

Item No.	Quantity	Unit	Description	Unit Price	Total Price
1	1	LS	Mobilization and Demobilization	/LS	\$
2	1	LS	City of Sparks Building Permit	\$10,000/LS	\$10,000
3	1	LS	Asbestos Containing Materials Removal and Disposal	/LS	\$
4	1	LS	Removal and Replacement of the remainder Roofing System on the Existing Laboratory Building, Including Roof Hatch and Electrical Modifications	/LS	\$
5	1	LS	Remove and Replace the Existing Gutter and Downspout System (limited to extent of existing gutter system)	/LS	\$
6	1	LS	Contingency and Force Account Items	\$45,000/LS	\$45,000
TOTAL BASE BID					\$

ADDITIVE ALTERNATE

Item No.	Quantity	Unit	Description	Unit Price	Total Price
A-1	1	LS	Expand the New Gutter and Downspout System To Extend Around the Entire Building Roof Perimeter.	/LS	\$
TOTAL BASE BID PLUS ADDITIVE ALTERNATE					\$

Grand Total – Base Bid Plus Additive Alternate	
\$	\$
(written total bid price)	

PLEASE NOTE: Bid ranking, evaluation and award recommendation will be made using the “Total Base Bid.” Use of the additive bid alternate in the awarded contract will only be determined after the apparent low bidder is identified using the “Total Base Bid.”

Once the apparent low bidder is determined using the “Total Base Bid,” “Alternate Bid” totals may be considered for inclusion in the resulting contract, depending on available funding.

Bidder Information

COMPANY INFORMATION:

Company Name:
Contact Name:
Address:
City:
State / Zip Code:
Telephone Number including area code:
Fax Number including area code:
E-mail:

COMPANY BACKGROUND

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

- 2) 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.)

- 3) 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.)

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

- 5) 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.)

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

Bidder Information

CONTRACTOR LICENSE INFORMATION:

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

BUSINESS LICENSING INFORMATION All vendors doing business within the City of Sparks are required to obtain and maintain a current business license from the City of Sparks prior to commencement of work (Sparks Municipal Code Section 5.08.020A). Vendor(s) awarded a contract resulting from this bid shall be required to obtain a current business license if they do not already hold one.

City of Sparks Business License Number:
Date Issued:
Date of Expiration:
Name of Licensee:
City, State, Zip Code of Licensee:
Telephone Number of Licensee:
Taxpayer Identification Number:

Bidder Information

DISCLOSURE OF PRINCIPALS:

a) Individual and/or Partnership:

Owner 1) Name:
Address:
City, State, Zip Code:
Telephone Number:
Owner 2) Name:
Address:
City, State, Zip Code:
Telephone Number:
Other 1) Title:
Name
Other 2) Title:
Name:

b) Corporation:

State in which Company is Incorporated:
Date Incorporated:
Name of Corporation:
Address
City, State, Zip Code:
Telephone Number:
President's Name:
Vice-President's Name:
Other 1) Name:
Title:

SUBCONTRACTOR DETAIL
SUBCONTRACTORS EXCEEDING FIVE PERCENT OF BID AMOUNT

INSTRUCTIONS: Per 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 five percent (5%) of the Bid Price. 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 HIS NAME and description of the work that the prime contractor will perform in the space provided below.**

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		

Bidder Name: _____

Authorized Signature: _____

SUBCONTRACTOR DETAIL
SUBCONTRACTORS EXCEEDING ONE PERCENT OF BID AMOUNT OR \$50,000

INSTRUCTIONS: 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.

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		

Bidder Name: _____ **Authorized Signature:** _____

CITY OF SPARKS ACKNOWLEDGMENT AND EXECUTION:

STATE OF _____)
) SS
County of _____)

_____(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 City of Sparks (Owner) and to do and perform all work for the **TMWRF LABORATORY BUILDING ROOF REPLACEMENT, Bid # 18/19-006**, 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.

TO THE CONTRACTS AND RISK MANAGER OF THE CITY OF SPARKS:

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 City of Sparks 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.

(Printed Name of Contractor/Bidder)

Contractor/Bidder: _____
BY: _____
Firm: _____
Address: _____
City: _____
State / Zip Code: _____
Telephone Number: _____
Fax Number: _____
E-mail Address: _____

(Signature of Principal)

Signature: _____
DATED this _____ day of _____, 2018.

State of Nevada

)

) SS.

County of _____)

On this _____ day of _____, in the year 2018, before me,

_____/Notary Public, personally appeared _____ Personally known to me (or proved

to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument, and acknowledged that he (she) executed it. WITNESS my hand and official seal.

Notary's Signature: _____ My commission Expires: _____

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS**

(This form 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:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) 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;
- (c) 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
- (d) 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 City 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.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

I am unable to certify to the above statement. My explanation is attached.

Signature _____ Date _____

Local Preference Affidavit

NEW Instructions: 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 **TMWRF LABORATORY BUILDING ROOF REPLACEMENT (Bid #18/19-006)** 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 City 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:

1. The Contractor shall ensure at least 50 percent of workers employed on the public work possess a Nevada driver’s license or identification card;
2. The Contractor shall ensure all vehicles used primarily for the public work will be registered and (where applicable) partially apportioned to Nevada;
3. 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.

By: _____ Title: _____

Signature: _____ Date: _____

Signed and sworn to (or affirmed) before me on this _____ day of _____, 20____, by _____ (name of person making statement).

State of _____)

)ss.

County of _____)

_____ STAMP AND SEAL

Notary Signature

CITY OF SPARKS, NEVADA – 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 City of Sparks, Nevada, 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 # **18/19-006**, PWP # **WA-2018-248**, for the **TMWRF LABORATORY BUILDING ROOF REPLACEMENT**.

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: _____

GENERAL CONDITIONS

General Conditions



GENERAL CONDITIONS

Please Read Carefully

These Provisions Are a Part of Your Bid and any Contract Awarded

Scope of Bid/Proposal: Bids/Proposals are hereby requested for **TMWRF LABORATORY BUILDING ROOF REPLACEMENT**, as per specifications herein.

The bidder agrees that:

- A. 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
- B. Bidder will enter into a written contract and furnish the item(s) or complete the work in the time specified, and in strict conformity with the City of Sparks specifications for the prices quoted.

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

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

1. Prices:

All prices and notations must be in ink or typewritten. Mistakes may be crossed out and corrections typed or written with ink adjacent to the error. Bids shall indicate the unit price extended to indicate the total price for each item bid. Any difference between the unit price correctly extended and the total price shown for all items bid shall be resolved in favor of the unit prices. Bidders are encouraged to review all prices prior to bid submittal, as withdrawal or correction may not be permitted after the bid has been opened.

2. Firm Prices:

Prices on bid shall be firm prices not subject to escalation unless otherwise provided for in the specifications. In the event the specifications provide for escalation, the maximum limit shall be shown, or the bid shall not be considered. In the event of a decline in market price below a price bid, the City of Sparks shall receive the benefit of such decline.

3. 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".

4. Brand Names:

Whenever reference to a specific brand name is made by the City, it is intended to describe a component that has been determined to best meet operational, performance, or reliability standards of the City, thereby incorporating these standards by reference within the specifications. These specifications are not meant to limit the vendor; they are guidelines to minimum qualifications. The bidder shall indicate their compliance or non-compliance for each line of the specification. Any deviations from the specifications or where submitted literature does not fully support the meaning of the specifications must be clearly cited in writing by the bidder.

General Conditions



An equivalent (“or equal”) may be offered by the bidder, subject to evaluation and acceptance by the City. It is the bidder’s responsibility to provide, at bidder’s expense, samples, test data, or other documentation the City may require to fully evaluate and determine acceptability of an offered substitute. The City reserves the sole right to reject a substituted component that will not meet or exceed City standards.

5. Samples:

Samples may be required for bid evaluation and testing purposes. Bidders shall agree to provide samples upon request and at no additional cost to the City.

6. Withdrawal of Bids:

Bids may be withdrawn by written or facsimile notice received prior to the exact hour and date specified for receipt of bid. A bid 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.

7. 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.

8. Mistake in Bid:

- (a) If the bidder discovers a mistake in bid prior to the hour and date specified for receipt of bid, bidder may correct the mistake by withdrawing the bid in accordance with Item 7 above and resubmit prior to the stated bid deadline.
- (b) If within seventy-two hours of the bid closing and prior to the issuance of a purchase order or a contract, the apparent low bidder discovers a mistake in bid of a serious and significant nature, bidder may request consideration be given to withdrawing the bid. The mistake must be evident and provable. The right is reserved by the City to reject any and all requests for withdrawal of bids. The decision of the Purchasing Manager is final as regards acceptance or rejection of requests for withdrawal after closing of bids.
- (c) A mistake in bid cannot be considered once a purchase order or contract is issued.

9. Signature:

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

10. 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.

11. 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.

12. Quality:

Unless otherwise required in the specifications, all goods furnished shall be new and unused.



13. 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 contract 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 City in the bid. Disclosure may not disqualify the bidder. The City reserves the right to evaluate bids on the basis of the facts surrounding such litigation or arbitration and to require bidder to furnish the City with a surety bond executed by a surety company authorized to do business in the State of Nevada and approved by The City of Sparks in a sum equal to one hundred percent (100%) of the contract price conditional on the faithful performance by bidder of the contract in the event the bid is awarded to bidder, notwithstanding the litigation or arbitration.

14. Royalties, Licenses and Patents:

Unless otherwise specified, the bidder shall pay all royalties, license and patent fees. The bidder warrants that the materials to be supplied do not infringe any patent, trademark or copyright and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City from all loss or damages, whether general, exemplary or punitive, as a result of any actual or claimed infringement asserted against the City, the bidder or those furnishing material to bidder pursuant to this contract.

15. Performance Standards:

Performance of work and acceptability of equipment or materials supplied pursuant to any contract or award shall be to the satisfaction and full discretion of the City.

16. Americans with Disabilities Act (ADA) Standards:

Bidders shall be required to comply with current ADA Standards in preparing their bids and executing work required under any contract resulting from this bid. Completed work must comply with current ADA Standards.

17. Warranties:

- (a) Unless otherwise specified, all workmanship, material, labor or equipment provided under the contract shall be warranted by bidder and/or manufacturer for a minimum of twelve (12) months after acceptance by City. Greater warranty protection will be accepted. Lesser warranty protection must be indicated by bidder on the bid proposal as an exception.

- (b) Bidder shall be considered primarily responsible to the City for all warranty service, parts and labor applicable to the goods or equipment provided by bidder under this bid or award, irrespective of whether bidder is an agent, broker, fabricator or manufacturer's dealer. Bidder shall be responsible for ensuring that warranty work is performed at a local agency or facility convenient to City and that services, parts and labor are available and provided to meet City's schedules and deadlines. If required and defined within the Scope of Work, the Bidder will post a performance bond after contract award to guarantee performance of these obligations. Bidder may establish a service contract with a local agency satisfactory to City to meet this obligation if bidder does not ordinarily provide warranty service.

18. 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

General Conditions



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 City website regarding the availability of new bid documents or addenda (where applicable). The City of Sparks 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. It is the responsibility of all potential bidders/responders to monitor the Purchasing Division's website for any changing information prior to submitting their bid/proposal. The City of Sparks will not be responsible for the timeliness or completeness of information provided by any 3rd party bid listing or re-selling service.

19. Specifications to Prevail:

The detailed requirements of the Specifications, Scope of Work or Special Conditions shall supersede any conflicting reference in these General Conditions or the stated language on the City of Sparks Standard Purchase Order that are in conflict therewith.

20. Taxes:

The City is exempt from State, City and County Sales Taxes per NRS 372.325. The City will furnish Exemption Certificates for Federal Excise Tax when applicable. The successful bidder shall pay all taxes, levies, duties and assessments of every nature, which may be applicable to any work or materials under this Contract. The Contract Sum and any agreed variations thereof shall include all taxes imposed by law. The successful bidder shall make any and all payroll deductions required by law. The successful bidder herein indemnifies and holds the City harmless from any liability on account of any and all such taxes, levies, duties, assessments and deductions.

21. 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 \$250,000 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. Further information concerning Prevailing Wage rates can be found at:

http://labor.nv.gov/PrevailingWage/Public_Works/Prevailing_Wages/

Federal "Davis Bacon" wages may be applicable if the funding for the project includes Federal funds. These requirements are detailed in the "Special Conditions – Federal Requirements" section that will be included in this bid document when such conditions apply.

22. Conflict of Interest:

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

- (a) 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.

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- (b) 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. In the event such a conflict occurs, the bidder is to report it immediately to the Purchasing Manager. For breach or violation of this warranty, the City shall have the right to annul this contract without liability at its discretion, and bidder may be subject to damages and/or debarment or suspension.

23. Disqualification of Bidder:

Any one or more of the following may be considered as sufficient for the disqualification of a prospective Bidder and the rejection of the Bid:

- (a) The Bidder is not responsive or responsible.
- (b) The quality of services, materials, equipment or labor offered does not conform to the approved plans and specifications.
- (c) There is evidence of collusion among prospective Bidders (Participants in such collusion will receive no recognition as Bidders).
- (d) The Bidder lacks the correct contractor's license classification required for the defined scope of work.
- (e) Lack of competency, understanding of the scope of work, adequate machinery, plant and/or equipment as revealed in routine due diligence associated with bid evaluation.
- (f) Unsatisfactory performance record as shown by past work for the City of Sparks, judged from the standpoint of workmanship, progress, and quality of services/goods provided.
- (g) Uncompleted work which, in the judgment of the City of Sparks, might hinder or prevent the prompt completion of additional work, if awarded.
- (h) Failure to pay or satisfactorily settle all bills due for labor and/or material on any contract(s).
- (i) Failure to comply with any requirements of the City of Sparks.
- (j) Failure to list, as required, all subcontractors who will be employed by the Bidder.
- (k) Any other reason determined, in good faith, to be in the best interest of the City of Sparks.

24. Gratuities:

The City may rescind the right of the bidder to proceed under this agreement if it is found that gratuities in the form of entertainment, gifts, cash or otherwise are offered or given by the bidder, or any agent or representative of the bidder, to any officer or employee of the City with the intent of influencing award of this agreement or securing favorable treatment with respect to performance of this agreement.

25. Bidder's Security (This Section IS IS NOT Applicable to this bid):

A bid deposit in an amount equal to at least 5% of the bid may be required as a bid security by the City. The bid security may only be in cash, a cashier's or certified check made payable to the City of Sparks, or a bid bond. 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. 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.) The bid security must be executed by the bidder and enclosed with the bid proposal in the sealed bid envelope.

26. Performance and Payment Bonds:

Per NRS 339.025, before any contract, except one subject to the provisions of chapter 408 of NRS, exceeding \$100,000 for any project for the new construction, repair or reconstruction of any public building or other public work or public improvement of any contracting body is awarded to any contractor, he shall furnish to the contracting body the following bonds which become binding upon the award of the contract to the contractor

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(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.):

Performance Bond (This Section IS IS NOT Applicable to this bid):

The Contractor awarded this bid will be required to furnish the City 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 City of Sparks. 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 City in the event that bidder receiving the contract shall fail or refuse to fulfill the requirements and all terms and conditions of the contract.

Payment Bond (This Section IS IS NOT Applicable to this bid):

The Contractor awarded this bid will be required to furnish the City 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 City of Sparks. 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.

27. Indemnification:

To the fullest extent permitted by law, upon award, Contractor shall hold harmless, indemnify, defend and protect City, its affiliates, officers, agents, employees, volunteers, successors and assigns (“Indemnified Parties”), and each of them from and against any and all claims, demands, causes of action, damages, costs, expenses, actual attorney’s fees, losses or liabilities, in law or in equity, of every kind and nature whatsoever (“Claims”) arising out of or related to any act or omission of Contractor, its employees, agents, representatives, or Subcontractors in any way related to the performance of work under this Agreement by Contractor, or to work performed by others under the direction or supervision of Contractor, including but not limited to:

1. Personal injury, including but not limited to bodily injury, emotional injury, sickness or disease, or death to persons;
2. Damage to property of anyone, including loss of use thereof;
3. Penalties from violation of any law or regulation caused by Contractor’s action or inaction;
4. Failure of Contractor to comply with the Insurance requirements established under this Agreement;
5. Any violation by Contractor of any law or regulation in any way related to the occupational safety and health of employees.

In determining the nature of the claim against City, the incident underlying the claim shall determine the nature of the claim, notwithstanding the form of the allegations against City.

If City’s personnel are involved in defending such actions, Contractor shall reimburse City for the time and costs spent by such personnel at the rate charged City for such services by private professionals.

In cases of professional service agreements, requiring professional liability coverage:

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If the insurer by which a Consultant is insured against professional liability does not so defend the City and applicable agents and/or staff, and the Consultant is adjudicated to be liable by a trier of fact, the City shall be entitled to reasonable attorney’s fees and costs to be paid to the City by the Consultant in an amount which is proportionate to the liability of the of the Consultant.

Nothing in this contract shall be interpreted to waive nor does the City, by entering into this contract, waive any of the provisions found in Chapter 41 of the Nevada Revised Statutes.

28. Insurance:

BIDDERS' ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT BIDDERS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF THE APPARENT LOW BIDDER FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT BIDDER MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Should work be required on City premises or within the public right-of-way, upon award of the contract, the bidder shall provide proof of insurance for the types of coverage, limits of insurance and other terms specified herein, prior to initiation of any services under City, Bid, Proposal or Contract. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks and shall meet the following minimum specifications:

Contractor shall at its own expense carry and maintain at all times the following insurance coverage and limits of insurance no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater. Contractor shall also cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified herein. All insurers must have AM Best rating not less than A-VII, and be acceptable to the City. Contractor shall furnish copies of certificates of insurance evidencing coverage for itself and for each subcontractor. Failure to maintain the required insurance may result in termination of this contract at City’s option. If Contractor fails to maintain the insurance as set forth herein, City shall have the right, but not the obligation, to purchase said insurance at Contractor’s expense.

Contractor shall provide proof of insurance for the lines of coverage, limits of insurance and other terms specified below prior to initiation of any services. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks. Contractor and any of its subcontractors shall carry and maintain coverage and limits no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater.

Applicable to this Contract	Insurance Type	Minimum Limit	Insurance Certificate	Additional Insured	Waiver of Subrogation
Yes	General Liability/Umbrella (Excess) Liability	\$2,000,000	✓	✓	✓
Yes	Automobile Liability	\$1,000,000	✓	✓	
Yes	Workers’ Compensation	Statutory	✓	N/A	✓
Yes	Employer’s Liability	\$1,000,000	✓	N/A	

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Applicable to this Contract	Insurance Type	Minimum Limit	Insurance Certificate	Additional Insured	Waiver of Subrogation
No	Professional Liability	\$1,000,000	✓	N/A	N/A
No	Pollution Legal Liability	\$1,000,000	✓	N/A	N/A

Commercial General Liability

Contractor shall carry and maintain Commercial General Liability (CGL) and, if necessary to meet required limits of insurance, commercial umbrella/excess liability insurance with a total limit of not less than the limits specified herein.

For contracts that are for the construction or improvement of public facilities, the Contractor shall obtain and maintain products and completed operations liability coverage through the statute of repose after completion of the project.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, underground property damage, employment-related practices, or damage to the named insured’s work unless Subcontractor carries and maintains separate policies providing such coverage and provides Contractor evidence of insurance confirming the coverage.

Minimum Limits of Insurance

- \$2,000,000** Each Occurrence Limit for bodily injury and property damage
- \$2,000,000** General Aggregate Limit
- \$2,000,000** Products and Completed Operations Aggregate Limit
- \$10,000** Medical Expense Limit

If Commercial General Liability Insurance or other form with a general aggregate limit is used, it shall be revised to apply separately to this PROJECT or LOCATION.

Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Commercial General Liability (CGL) “Occurrence” form CG 00 01 04/13 or substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds using the applicable ISO additional insured endorsement(s) or substitute forms providing equivalent coverage, in respects to damages and defense arising from: activities performed by or on behalf of Contractor, including the insured's general supervision of Contractor; products and completed operations of Contractor; premises owned, occupied, or used by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

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Any failure by the Contractor to comply with reporting provisions of the policies shall not affect its obligations to the additional insureds.

Primary and Non-Contributory

Contractor's insurance coverage shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to City, its officers, agents, employees, and volunteers. There shall be no endorsement or modification of the CGL to make it excess over other available insurance; alternatively, if the CGL states that it is excess or pro rata, the policy shall be endorsed to be primary with respect to the additional insured. Any insurance or self-insurance maintained by City, its officers, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it in any way.

Separation of Insureds

Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

Waiver of Subrogation

Contractor waives all rights against City and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. Insurer shall endorse CGL policy as required to waive subrogation against the City with respect to any loss paid under the policy.

Endorsements

A policy form or endorsement is required confirming coverage for all required additional insureds. The endorsement for CGL shall be at least as broad as the unmodified ISO additional insured endorsement CG 20 10 11/85 or substitute forms providing additional insured coverage for products and completed operations.

A waiver of subrogation in favor of City shall be endorsed to the policy using an unmodified Waiver of Transfer of Rights of Recovery of Others to Us ISO CG 24 04 05 09, or a substitute form providing equivalent coverage.

If any underground work will be performed, Contractor shall maintain electronic data liability insurance applicable to the Project and insuring against liability arising out of the loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate electronic data. This coverage shall be maintained with a limit of liability of not less than \$1,000,000 and provide coverage at least as broad as electronic data liability coverage form CG 04 37 (or substitute form providing equivalent coverage).

Business Automobile Liability

Minimum Limits of Insurance

\$1,000,000 Combined Single Limit per accident for bodily injury and property damage or the limit customarily carried by Contractor, whichever is greater. No aggregate limit may apply. Coverage may be combined with Excess/Umbrella Liability coverage to meet the required limit.

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Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Business Automobile Coverage form CA 00 01 10/13, CA 00 25 10/13, CA 00 20 10/13 or substitute form providing equivalent coverage. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Pollution liability coverage at least as broad as that provided under the ISO pollution liability—broadened coverage for covered autos endorsement (CA 99 48) shall be provided, and the Motor Carrier Act endorsement (MCS 90) shall be attached for all contracts involving transportation of “hazardous material” as this term is defined by applicable law, including, but not limited to, waste, asbestos, fungi, bacteria and mold.

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds with respect to damages and defense arising from the ownership, maintenance or use of automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Endorsements

A policy endorsement is required listing all required additional insureds. The endorsement for Business Automobile Liability shall be at least as broad as the unmodified ISO CA 20 48 10/13 or a substitute form confirming City’s insured status for Liability Coverage under the Who Is An Insured Provision contained in Section II of the coverage form ISO CA 00 01 10/13.

Workers’ Compensation and Employer’s Liability

Contractor shall carry and maintain workers’ compensation and employer’s liability insurance as required by NRS 616B.627 or provide proof that compliance with the provisions of Nevada Revised Statutes Chapters 616A-D and all other related chapters is not required. It is understood and agreed that there shall be no coverage provided for Contractor or any Subcontractor of the Contractor by the City. Contractor agrees, as a precondition to the performance of any work under this Agreement and as a precondition to any obligation of the City to make any payment under this Agreement to provide City with a certificate issued by an insurer in accordance with NRS 616B.627 and with a certificate of an insurer showing coverage pursuant to NRS 617.210.

It is further understood and agreed by and between City and Contractor that Contractor shall procure, pay for and maintain the above mentioned coverage at Contractor's sole cost and expense.

Should Contractor be self-funded for workers’ compensation and employer’s liability insurance, Contractor shall so notify City in writing prior to the signing of this Contract. City reserves the right to approve said retentions, and may request additional documentation, financial or otherwise, for review prior to the signing of this Contract.

Nevada law allows the following to reject workers’ compensation coverage if they do not use employees or subcontractors in the performance of work under the contract:

- Sole proprietors (NRS 616B.627 and NRS 617.210)
- Unpaid officers of quasi-public, private or nonprofit corporations (NRS 616B.624 and NRS 617.207)
- Unpaid managers of limited liability companies (NRS 616B.624 and NRS 617.207)

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- An officer or manager of a corporation or limited liability company who owns the corporation or company (NRS 616B.624 and NRS617.207)

If a contractor has rejected workers' compensation coverage under applicable Nevada law, the contractor must indicate the basis for the rejection of coverage and complete, sign and have notarized an Affidavit of Rejection of Coverage. The Affidavit must be completed, signed and notarized prior to performance of any work.

Minimum Limits of Insurance

Workers' Compensation: Statutory Limits
Employer's Liability: **\$1,000,000** Bodily Injury by Accident – Each Accident
\$1,000,000 Bodily Injury by Disease – Each Employee
\$1,000,000 Bodily Injury by Disease – Policy Limit

Coverage Form

Coverage shall be at least as broad as the unmodified National Council on Compensation Insurance (NCCI) Workers Compensation and Employer's Liability coverage form WC 00 00 07/11 or substitute form providing equivalent coverage.

OTHER INSURANCE COVERAGES (IF APPLICABLE)

Professional Liability Insurance (if Applicable) \$1,000,000 per occurrence limits of liability or whatever limit is customarily carried by the Contractor, whichever is greater, for design, design-build or any type of professional services with a minimum of three (3) years reporting of claims following completion of the project.

Contractors Pollution Liability Insurance (If Applicable)- \$1,000,000 per occurrence and \$2,000,000 aggregate or whatever amount is acceptable to the City for any exposure to "hazardous materials" as this term is defined in applicable law, including but not limited to waste, asbestos, fungi, bacterial or mold.

Lower tier sub-subcontractors, Truckers, Suppliers: Evidence confirming lower tier subcontractors, truckers and suppliers are maintaining valid insurance prior to beginning work on the project to meet the requirements set forth herein on Subcontractor, including but not limited to all additional insured requirements of Subcontractor.

ALL COVERAGES

Coverage shall not be suspended, voided, canceled, or non-renewed by either CONTRACTOR or by the insurer, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to CITY except for ten (10) days' notice for nonpayment of premium.

OTHER INSURANCE PROVISIONS

Should City and Contractor agree that higher coverage limits are needed warranting a project policy, project coverage shall be purchased and the premium for limits exceeding the above amount may be borne by City. City retains the option to purchase project insurance through Contractor's insurer or its own source.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, agents, employees, or volunteers.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with a Best's rating of no less than A-VII and acceptable to the City.. City, with the approval of the Risk Manager, may accept coverage with carriers having lower Best's ratings

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upon review of financial information concerning Contractor and insurance carrier. City reserves the right to require that Contractor's insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted list.

VERIFICATION OF COVERAGE

Contractor shall furnish City with certificates of insurance and with original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

Prior to the start of any Work, Contractor must provide the following documents to City of Sparks, Attention: Purchasing Division, P.O. Box 857, Sparks, NV 89432-0857:

- A. Certificate of Insurance.** Contractor must provide a Certificate of Insurance form to the City of Sparks to evidence the insurance policies and coverage required of Contractor.
- B. Additional Insured Endorsements.** An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to the City of Sparks, by attachment to the Certificate of Insurance, to evidence the endorsement of the City of Sparks as additional insured.
- C. Policy Cancellation Endorsement.** Except for ten (10) days' notice for non-payment of premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to the City of Sparks, the policy shall not be suspended, voided, cancelled or non-renewed, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance.
- D. Bonds (as Applicable).** Bonds as required and/or defined in the original bid documents.

All certificates and endorsements are to be addressed to the City of Sparks, Purchasing Division and be received and approved by City before work commences. The City reserves the right to require complete certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Contractor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all of the requirements stated herein.

MISCELLANEOUS CONDITIONS

1. Contractor shall be responsible for and remedy all damage or loss to any property, including property of City, caused in whole or in part by Contractor, any Subcontractor, or anyone employed, directed, or supervised by Contractor.
2. Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any Subcontractors under it.
3. In addition to any other remedies City may have if Contractor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option:

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- a. Purchase such insurance to cover any risk for which City may be liable through the operations of Contractor under this Agreement and deduct or retain the amount of the premiums for such insurance from any sums due under the Agreement;
- b. Order Contractor to stop work under this Agreement and/or withhold any payments which become due Contractor here under until Contractor demonstrates compliance with the requirements hereof; or,
- c. Terminate the Agreement.

29. Safety Program:

Upon award, the Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide all necessary protection to prevent damage, injury, or loss to:

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

Contractor shall comply with all applicable laws, ordinances, rules, regulations, and others of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss. He shall erect and maintain, as required by existing conditions and progress on the work, all necessary safeguards for safety and protection, including posting danger signs, other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities. Contractor shall comply with OSHA'S Hazard Communication Standards.

Contractor shall designate a responsible member of its organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to the Owner and the Engineer.

30. Award of Contract:

- (a) Bids/Proposals will be analyzed and award will be made to the lowest, responsive and responsible bidder whose bid conforms to the solicitation and whose bid is considered to be most advantageous to the City, price and other factors considered. Factors to be considered may include, but are not limited to: bidder's past performance, total unit cost, economic cost analysis, life cycle costs, warranty and quality, maintenance cost, durability, the operational requirements of the City and any other factors which will result in the optimum economic benefit to the City.
- (b) The City reserves the right to reject any item or items, to waive informalities, technical defects and minor irregularities in bids/proposals received; and to select the bid(s) or proposal(s) deemed most advantageous to the City. Should the City elect to waive a right it will not constitute an automatic waiver of that right in the future nor will it impact any other right or remedy. The City may consider bids/proposals submitted on an "all or nothing" basis if the bid/proposal is clearly designated as such.
- (c) The City reserves the right to award one or more contracts on the bids/proposals submitted, either by award of all items to one bidder or by award of separate items or groups of items to various bidders as the interests of the City may require, unless the bidder clearly specifies otherwise in his bid.
- (d) Upon acceptance by the City of Sparks, the solicitation, bid, proposal, or price quotation and issuance of a purchase order issued to the successful bidder shall be deemed to result in a binding contract incorporating

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those terms and these General Conditions without further action required by either party. Items are to be furnished as described in the bid and in strict conformity with all instructions, conditions, specifications, and provisions in the complete contract, as defined by this clause or any related integrated agreement.

31. Request for Proposal (RFP) Submittals:

In the case of Request for Proposals (RFP's), 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.

By their nature, proposals will include a number of variables that will vary based on the complexity of the product or service addressed within the proposal. Therefore, the evaluation of RFP's and the recommendation for award will not be based on price alone. Selection criteria will be better defined for each scope of work in the Special Conditions section of this bid.

Upon award of the contract, the executed contract 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.

32. Bidder Preference Law (This Section IS IS NOT Applicable to this bid):

This project will be bid and awarded under the Provisions(s) of NRS 338.147, which restricts preference given to certain contractors on Public Works Projects. The NRS cited in this section is meant to be a reference only. Each bidder shall acquaint himself with the latest provisions of NRS 338.147.

If the Contract for any Public Works Construction Project is expected to cost \$250,000 or more, then all Contractors wishing to receive benefit of their preference status in the evaluation of bids must submit a copy of their Certificate of Bidder Preference issued by the State Contractor's Board. (Call 775-688-1141 or 775-486-1100 to obtain certification information from the State Contractors Board). Contractors who do not submit a preference certificate at the time of their bid are presumed to have wished not to exercise the benefit of their preference, or do not possess the certificate of eligibility.

To the extent Contractor has sought, qualified and receives a bidding preference on this project, pursuant to Nevada Revised Statutes Chapter 338, Contractor acknowledges and agrees that the following requirements will be adhered to, documented and attained for the duration of the Project:

1. At least 50 percent of the workers employed on the Project (including subcontractors) hold a valid driver's license or identification card issued by the Nevada Department of Motor Vehicles;
2. All vehicles used primarily for the public work will be (a) registered and (where applicable) partially apportioned to Nevada; or (b) registered in Nevada; and
3. The Contractor shall maintain and make available for inspection within Nevada all payroll records related to the Project.

Contractor recognizes and accepts that failure to comply with any requirements herein shall be a material breach of the contract and entitle the City of Sparks to liquidated damages in the amount set by statute. In addition, the Contractor recognizes and accepts that failure to comply with any requirements herein may lose its certification for a preference in bidding and/or its ability to bid on any contracts for public works pursuant to NRS Chapter

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338.

To the extent Contractor has sought, qualified and receives a bidding preference, and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, each contract between the contractor, applicant or design-build team and a subcontractor must provide for the apportionment of liquidated damages assessed pursuant to this section if a person other than the Contractor was responsible for the breach of a contract for a public work caused by a failure to comply with a requirement of Items 1-3 within this section. The apportionment of liquidated damages must be in proportion to the responsibility of each party for the breach.

This section shall not be applicable for projects in which some or all of the funding comes from Federal sources.

33. Tie Bids:

Should identical low, responsive and responsible bids be received from two bidders, the City of Sparks Purchasing Manager shall notify all parties involved in the tie and may at his option utilize a coin-flip to determine the low bidder who shall be recommended for award. Or;

Should there be three or more low, responsive and responsible tie bids the Purchasing Manager shall exercise the following tie breaking method, unless another alternative is apparent and prudent: The City of Sparks Purchasing Manager shall set a mutually agreed upon time where, in his office, he shall shuffle a new deck of playing cards and have each bidder's representative cut the cards. The tie bidder who cuts the highest card (with Ace high) shall be recommended for bid award.

34. Appeals/Protests – Bids Only (Not Applicable to Request for Proposals):

A person who submits a bid on a contract may, after the bids are opened and within 5 business days after the date the "Recommendation to Award" is issued by the City, unless otherwise stated in the Special Conditions, file a notice of protest regarding the awarding of the contract. The City's "Recommendation to Award" will be dated and posted on the City's public website within the area where bid notices and bid re-caps are posted (Currently: <http://www.cityofsparks.us/bids>).

- (a) A notice of protest must include a written statement setting forth with specificity the reasons the person filing the notice believes the applicable provisions of law were violated.
- (b) A person filing a notice of protest may be required by the governing body or its authorized representative, at the time the notice of protest is filed, to post a bond with a good and solvent surety authorized to do business in this State or submit other security, in a form approved by the governing body or its authorized representative, to the governing body or its authorized representative who shall hold the bond or other security until a determination is made on the protest. A bond posted or other security submitted with a notice of protest must be in an amount equal to the lesser of:
 - (1) Twenty-five percent of the total value of the bid submitted by the person filing the notice of protest;
 - or
 - (2) Two hundred fifty thousand dollars (\$250,000).
- (c) A notice of protest filed in accordance with the provisions of this section operates as a stay of action in relation to the awarding of any contract until a determination is made by the governing body or its authorized representative on the protest.
- (d) A person who submits an unsuccessful bid may not seek any type of judicial intervention until the governing body or its authorized representative has made a determination on the protest and awarded the contract.

General Conditions



- (e) A governing body or its authorized representative is not liable for any costs, expenses, attorney's fees, loss of income or other damages sustained by a person who submits a bid, whether or not the person files a notice of protest pursuant to this section.
- (f) If the protest is upheld, the bond posted or other security submitted with the notice of protest must be returned to the person who posted the bond or submitted the security. If the protest is rejected, a claim may be made against the bond or other security by the governing body or its authorized representative in an amount equal to the expenses incurred by the governing body or its authorized representative because of the unsuccessful protest. Any money remaining after the claim has been satisfied must be returned to the person who posted the bond or submitted the security.

35. Documentation:

Due to the time constraints that affect contract performance, all required documents, certificates of insurance and bonds shall be provided to the City within ten (10) calendar days following award or date of request by City, whichever is later. Any failure to comply may result in bid being declared non-responsive and rejected, and at City's option, the bid bond may be attached for damages suffered.

36. Discounts:

- (a) Prompt payment discounts will not be considered in evaluating bids for award. However, offered discounts will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.
- (b) In connection with any discount offered, time will be computed from date of delivery and acceptance, or invoice receipt, whichever is later. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the City check.
- (c) Any discount offered other than for prompt payment should be included in the net price quoted and not included in separate terms. In the event this is not done, the City reserves the right to accept the discount offered and adjust prices accordingly on the Purchase Order.

37. Seller's Invoice:

Invoices shall be prepared and submitted in duplicate to the address shown on the Purchase Order. Separate invoices are required for each Purchase Order. Invoices shall contain the following information: Purchase Order number, item number, description of supplies or services, sizes, unit of measure, quantity, unit price and extended totals.

38. Inspection and Acceptance:

Inspection and acceptance will be at destination unless specified otherwise, and will be made by the City department shown in the shipping address or other duly authorized representative of the City. Until delivery and acceptance, and after any rejection, risk of loss will be on the bidder unless loss results from negligence of the City.

39. Lost and Damaged Shipments:

Risk of loss or damage to items prior to the time of their receipt and acceptance by the City is upon the bidder. The City has no obligation to accept damaged shipments and reserves the right to return at the bidder's expense damaged merchandise even though the damage was not apparent or discovered until after receipt of the items.

40. Late Shipments:

Bidder is responsible to notify the City department receiving the items and the Purchasing Manager of any late or delayed shipments. The City reserves the right to cancel all or any part of an order if the shipment is not made as promised.



41. Document Ownership:

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

42. Advertisements, Product Endorsements:

City employees and agencies or organizations funded by the City of Sparks are prohibited from making endorsements, either implied or direct, of commercial products or services without written approval of the City Manager. No bidder may represent that the City of Sparks has endorsed their product or service without prior written approval.

43. Optional Cooperative Purchase Agreement

It is intended that any other public agency (i.e., city, county, district, public agency, municipality or state agency) shall have the option to participate (A.K.A. "join" or "piggyback") in any award made as a result of this solicitation. The City of Sparks shall incur no financial responsibility in connection with purchase orders or contracts made by the bidder with another public agency resulting from this solicitation. The public agency utilizing the original contract shall accept sole responsibility for placing orders and making applicable payments to the vendor. Should the Bidder not wish for a contract resulting from this bid to be used by other public agencies, they have the option to decline that option at the time of request.

44. Vendor Workplace Policies

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

The City of Sparks 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).

45. Business License Requirement:

All companies doing business with, or within, the City of Sparks are required to obtain and maintain a current business license from the City of Sparks prior to the commencement of work per Sparks Municipal Code Section 5.08.020A. Bidder(s) awarded a contract resulting from this bid shall be required to obtain a current business license if they do not already possess one.

46. City Provisions to Prevail:

Except as indicated in the specifications, the City's standard General Conditions shall govern any contract award. Any standard terms and conditions of bidder submitted by bidder shall not be acceptable to City unless expressly agreed to by the City. The City reserves the right to reject bidder's bid as non-responsive, to consider the bid without bidder's standard terms and conditions, or to require bidder to delete reference to such, as a condition of evaluation or award of the bid. If, after award of contract, bidder (contract vendor) provides materials or services accompanied by new or additional standard terms or conditions, they too shall be considered void and City may require deletion as a further condition of performance by vendor.

General Conditions



47. Invalid Provisions:

In the event that any one or more of the provisions of this agreement shall be found to be invalid, illegal or unenforceable, the remaining provisions shall remain in effect and be enforceable.

48. Amendments and Modifications:

The Purchasing Manager may at any time, by written order, and without notice to the sureties, make a modification to the contract or an amendment to the Purchase Order, within the general scope of this contract, in (1) quantity of materials or service, whether more or less; (2) drawings, designs, or specifications, where the supplies to be furnished are to be specially manufactured for the City; (3) method of shipment or packing; and (4) place of delivery. If any such change causes an increase or decrease in the cost or the time required for the performance of this contract, an equitable adjustment shall be made by written modification of the contract or amendment to the Purchase Order. Any claim by the bidder for adjustment under this clause must be asserted within 30 calendar days from the notification date.

49. Assignment:

Vendor shall not assign or delegate duties or responsibilities under this agreement, in whole or in part, without prior written approval of the City.

50. Disputes After Award:

Except as otherwise provided in these provisions, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Purchasing Manager, who shall reduce this decision to writing and mail a copy to the bidder. The decision of the Purchasing Manager shall be final and conclusive, unless bidder requests arbitration within ten (10) calendar days. Pending final decision of a dispute, the bidder shall proceed diligently with the performance of the contract and in accordance with the Purchasing Manager's decision.

51. Arbitration after Award:

Any and all disputes, controversies or claims arising under or in connection with the contract resulting from this bid, including without limitation, fraud in the inducement of this Contract, or the general validity or enforceability of this Contract, shall be governed by the laws of the State of Nevada without giving effect to conflicts of law principles, may be submitted to binding arbitration before one arbitrator, and shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association in a private manner in Washoe County, Nevada. This award shall be final and judgment may be entered upon it in any court having jurisdiction thereof. In reaching this final award, the arbitrator shall have no authority to change or modify any provision of this Contract. All other expenses of arbitration shall be borne equally by the parties. All fees, including legal fees, shall be borne by the party who incurred them. All costs of enforcement shall be borne by the losing party. Each party shall have the right to discovery in accordance with the Nevada Rules of Civil Procedure.

52. 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.

53. Annual Appropriation of Funds:

Multi-year term supply and service contracts and leases are subject to annual appropriation of funds by the City Council. The City plans and makes appropriations to the City Budget with respect to a fiscal year that starts July 1st and ends June 30th of each year. Payments made under term contracts and leases are considered items

General Conditions



of current expense. Purchase Orders are funded when issued; therefore, they are current expense items and are not subject to any subsequent appropriation of funds.

Continuance of a multi-year contract beyond the limits of funds available shall be contingent upon appropriation of the requisite funds in the ensuing fiscal year and the termination of this contract due to lack of appropriation shall be without penalty.

54. Extension:

When in the City's best interest, this agreement may be extended on a daily, month-to-month, or annual basis by mutual agreement of both parties. Services and/or materials received under an extension shall be in accordance with pricing, terms, and conditions, as described herein.

55. Termination:

The City may terminate this agreement and be relieved of any consideration to the vendor should vendor fail to perform in the manner required. Furthermore, the City may terminate this agreement for any reason without penalty upon giving thirty (30) days written notice to the vendor. In the event of termination, the full extent of City liability shall be limited to an equitable adjustment and payment for materials and/or services authorized by and received to the satisfaction of the City prior to termination.

56. 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.

57. Boycott of Israel: Compliance with SB 26 (2017) (This Section IS IS NOT Applicable to this bid):

Pursuant to Nevada Senate Bill 26 (2017), any Contract entered into under NRS Chapter 332 in which the estimated annual dollar amount exceeds \$50,000 will require written certification that the bidder is not, and will not be, engaged in a Boycott of Israel throughout the duration of the Contract. The term "Boycott of Israel" has the meaning ascribed in Section 3 of Senate Bill 26 (2017). Bidder certifies that it is not, and will not be, engaged in a Boycott of Israel throughout the duration of the Contract.

Special Conditions and Specifications (Specific to Project)

In instances where the Special Conditions conflict with the General Conditions, the Special Conditions will prevail with respect to that instance or item(s).

SPECIAL PROVISIONS
TMWRF LABORATORY BUILDING ROOF REPLACEMENT
BID #18/19-006 / PWP #WA-2018-248

These Special Provisions supplement and modify the "Standard Specifications for Public Works Construction" Latest Edition, and adopted by the City of Sparks, Nevada. All of the requirements and provisions of said Standard Specifications shall apply except where modified by the plans and these Special Provisions.

SECTION 1: SCOPE OF WORK

This project includes the replacement of the existing roofing system on the Laboratory Building at the Truckee Meadows Water Reclamation Facility (TMWRF). The scope shall also include the following:

1. The Demolition Work includes, but is not necessarily limited to, the following:
 - a. Removal of the existing roofing and insulation systems.
 - b. Asbestos abatement demolition.
 - c. Removal of various roof penetrations as shown on the Contract Drawings.
2. The New Work includes, but is not necessarily limited to, the following:
 - a. Contractor to provide a roofing and insulation system as shown on the Contract Drawings and Specifications.
 - b. Modifications to the existing roof penetrations as shown on the Contract Drawings and Specifications.
 - c. Installation of the gutter and downspout system as shown on the Contract Drawings and Specifications.
 - d. Installation of the tie-off system as shown on the Contract Drawings and Specifications.

The work of this Contract is located at the Truckee Meadows Water Reclamation Facility, 8500 Clean Water Way, Reno, Nevada 89502.

SECTION 2: SPECIAL PROVISIONS

The requirements set forth in these "Special Provisions" shall be used in addition to those set forth in "Standard Specifications for Public Works Construction".

SECTION 3: STANDARD SPECIFICATIONS

All materials furnished and work performed shall be done in accordance with the most current edition of the "Standard Specifications for Public Works Construction" (Orange Book) and any revisions thereto if not covered or amended by the Special Provisions. The "Standard Specifications for Public Works Construction" are herein referred to as "Standard Specifications".

SECTION 4: STANDARD DETAILS

All materials furnished and work performed shall be done in accordance with the most current edition of the "Standard Details for Public Works Construction" (Orange Book) and any revisions thereto if not covered or amended by the Special Provisions. The "Standard Details for Public Works Construction" are herein referred to as "Standard Details".

SECTION 5: NOTICE TO PROCEED AND TIME SCHEDULE

An official "Notice to Proceed" specifying the date by which construction operations shall be started will be issued in writing and delivered to the CONTRACTOR by the City at the Pre-construction Meeting. Contract time will begin on the date specified in the "Notice to Proceed", unless operations begin at an earlier date, in which case the date that such operations begin will apply. The CONTRACTOR shall immediately begin and diligently prosecute the work to completion. The CONTRACTOR shall obligate himself to complete the work within the stated time limits. The work necessary to provide a weather tight roof (hatches, vent removal, membrane, etc.) shall be completed within fifty (50) working days of issuance of the Notice to Proceed. All remaining work described in this document shall be completed within Sixty-five (65) working days from the time of issuance of the Notice to Proceed. The Notice to Proceed date will be discussed and determined at the Pre-construction meeting.

A Gantt style Project Schedule shall be developed by the Contractor and submitted to the Engineer for review and approval. The Project Schedule shall be submitted a minimum of one (1) week prior to the Pre-construction Meeting. Project Schedules shall be edited and provided to Engineer following any large modifications to the Project timeframe.

Two-week look ahead schedules shall be updated and provided by Contractor at all Construction Progress Meetings.

SECTION 6: LIQUIDATED DAMAGES

In case all work called for under the contract is not completed before or upon the expiration of the time limits set forth above, it is agreed by the parties to the contract that damage will be sustained by the City and that it will be impracticable to determine accurately the actual damage the City will sustain in the event of any such delay. Therefore, the CONTRACTOR shall pay to the City, FIVE HUNDRED DOLLARS (\$500.00) for each and every working day of delay in finishing the work in excess of the number of working days prescribed and the City shall further have the right to charge to the CONTRACTOR, his heirs, assigns or sureties and to deduct from the final payment for the work, all or any part as it may deem proper of the actual cost of which are directly chargeable to the contract and which accrue during the period of such extensions, except that the cost of the final surveys and preparation of final estimate shall not be included in such charges. The City may deduct this amount from any money due or that may become due the CONTRACTOR under the contract. This payment shall not be considered as a penalty, but as liquidated damages suffered by the City on account of the failure of the CONTRACTOR to complete the work within the time limit of the contract.

SECTION 7: EXCUSABLE DELAYS

The CONTRACTOR shall not be assessed with liquidated damage nor the cost of Project Coordinating inspection during any delay in the completion of the work caused by acts of God, the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or due to such causes, provided that the CONTRACTOR shall within ten (10) days from the beginning of such delay notify the Project Coordinator in writing of the causes of delay. The Project Coordinator's findings of the facts thereon shall be final and conclusive.

SECTION 8: INTENT OF THE SPECIFICATIONS

The intent of the plans and specifications is to prescribe a complete outline of work, which the CONTRACTOR undertakes to do in full compliance with the contract.

The CONTRACTOR shall furnish all required materials, equipment, tools, labor and incidentals, unless otherwise provided in the contract and shall include the cost of these items in the contract unit prices for the several units of work. All items of work called for on the plans or in the specifications and not included as a separate item in the proposal shall be considered as incidental to the other items listed in the proposal and the payment for such incidental items shall be considered as included in the contract unit prices bid.

SECTION 9: AUTHORITY OF THE PROJECT COORDINATOR AND INSPECTOR

All work shall be done under the supervision of the Project Coordinator acting on behalf of the City. The Project Coordinator shall decide all questions that arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rates of progress, interpretation of the plans and specifications, acceptable fulfillment of the contract and compensation under the specifications. He shall determine the amount of work performed and materials furnished and his decision and estimate shall be final. The Project Coordinators estimate shall be "condition precedent" to the right of the CONTRACTOR to receive money due him under the contract. The Project Coordinator does not have authority to authorize changes in plans and specifications without prior written approval of the Engineer.

The CONTRACTOR is responsible to provide, coordinate and schedule all inspections. Inspections related to satisfaction of the City of Sparks Building Permit shall be performed by the City. The Owner will provide Construction Observation and Management.

SECTION 10: CHANGE ORDERS

The City of Sparks reserves the right to make alterations or supplements to the Contract. Change Order Forms are required for all changes in decreases and/or increases of quantities and/or dollar amount changes in accordance with the Standard Specifications and required by the City of Sparks.

SECTION 11: COOPERATION WITH OTHER CONTRACTORS

The CONTRACTOR shall cooperate with other CONTRACTOR's who may be employed by the City on construction of other work adjacent to or in the proximity of the location of the project.

SECTION 12: DISPOSAL OF EXCESS AND WASTE MATERIALS

Trash, construction debris, cleared vegetation, excavated material unsuitable to be incorporated in the construction shall become the property of the CONTRACTOR and shall be removed by the CONTRACTOR and shall be legally disposed of offsite in accordance with all federal, state and local regulations.

SECTION 13: LIMITS OF CONTRACTOR'S OPERATIONS

If the CONTRACTOR's operations result in damage to any publicly or privately-owned facilities outside the limitations of the construction easement, the CONTRACTOR shall, at his expense, repair such damage or indemnify the owner of the damaged property.

If the CONTRACTOR negotiates with property owners for the use of land for construction operations outside the limits of the construction easements, he shall do so at his own risk and the City will assume no liability for such use of private property. All agreements between the CONTRACTOR and private property owners shall be in writing and the City will be furnished copies of such agreements.

At no time will the CONTRACTOR be allowed to store debris or materials on the street overnight. All asphalt, concrete, soil and aggregate base will be hauled off at the conclusion of each working day. Materials for installation of Drop Inlets (Pipe, boxes frame and cover) will be allowed to be stored onsite with the approval of the Project Coordinator or inspector.

SECTION 14: PROTECTION OF EXISTING UTILITIES

Utility locations are provided for reference in determining the required scope of the work. The location and completeness of existing utilities shown on the plans are not guaranteed, but indicates generally their location according to the best knowledge of the Project Coordinator. Existing utilities are not always shown on design drawings for clarity in areas where existing utilities are congested. The CONTRACTOR shall make all investigations as necessary to satisfy himself as to the field conditions prior to bidding and construction.

The CONTRACTOR shall notify Underground Services Alert (USA Dig) at 1-800-227-2600, and NV Energy, Truckee Meadows Water Reclamation Facility (TMWRF), The City of Sparks, Truckee Meadows

Water Authority (TMWA), SBC, Charter Communications and other cable companies not less than five (5) working days prior to the start of construction to verify the location and depths of utilities.

The CONTRACTOR shall inform himself of the exact location of all vaults, boxes, conduits, ducts, cables, pipe systems, etc. and shall protect said utilities. Any damage caused by operation of the CONTRACTOR shall be repaired by the CONTRACTOR at his own expense. It shall be the CONTRACTOR's responsibility to contact the impacted utility for any replacement hardware.

SECTION 15: CONTRACT AMOUNT

The total amount payable under this contract shall be determined by the sum of the amounts earned and the various quantities of repairs actually made and determined from unit prices as furnished by the CONTRACTOR in the schedule of prices contained in his proposal. The various quantities of repairs in the bid proposal are estimates and the City of Sparks reserves the right to vary quantities as may be necessary.

SECTION 16: PRECONSTRUCTION CONFERENCE

After the execution of the contract, but prior to the commencement of any work, a preconstruction conference between the CONTRACTOR, TMWRF, and the Engineer will be held at a mutually acceptable time and place.

SECTION 17: MEASUREMENT AND APPLICATION FOR PAYMENT

Whenever possible, the actual quantities installed or work performed on any project shall be measured on the site of the work by a crew composed of both the CONTRACTOR and the Project Coordinator. This combined crew shall record all measured quantities in field notebooks, in legible and understandable entries. The CONTRACTOR and the Project Coordinator shall each have a set of field notes which are to be in agreement on all quantities and items measured and shall include all work accomplished on the project under contract. Each set of field measurements shall be initialed and dated by responsible representatives of the CONTRACTOR and the Project Coordinator participating on the combined crew. In the event that it is not possible to form a combined crew for the measurements, the area repaired shall be measured by the Project Coordinator.

Lump Sum items will not be paid until they are finally complete unless a schedule of values is provided for sub components that can be verified by the owner; then the value of the complete components will be paid minus retention.

Application for payment shall be in satisfactory spreadsheet type form and submitted to Engineer for review and approval. EJCDC Application for Payment Form (C-620) or approved alternate shall be used. Engineer will provide form C-620 in excel format to Contractor upon request Retainage will be held and released per NRS requirements.

Submitted application for payment form shall be signed, correct, include application number and date, and include appropriate substantiating data to support amounts included in application for payment. Lump sum items shall be prorated as realistically as possible to reflect the work completed for those items.

SECTION 18: SURFACE MOUNTED UTILITY ADJUSTMENT

It shall be the CONTRACTOR's responsibility to adjust all surface mounted utility appurtenances, such as manholes, survey monument covers and valve boxes to grade consistent with the grade of the restored street surface.

SECTION 19: PRE/POST-CONSTRUCTION WALK-THRU

The CONTRACTOR, Inspector, and/or Project Coordinator shall conduct a pre and post construction walk-thru. This shall be accomplished to determine limits of construction and existing conditions at each site and the surrounding area. The CONTRACTOR should walk the site and note all existing conditions. Concrete pavers, mow strips, fencing, edging, sprinklers block and brick walls, etc. are within this area. Any damage

and finish back to these landscapes will be included within the scope of work and no additional pay item will be allowed for this work.

The CONTRACTOR will be required to video tape the entire project prior to any construction including all effected properties and staging locations. This video media will be in a DVD format and a copy of the tape will be provided to the City. Areas near the property lines, back of sidewalk and driveways, landscaping, mow strips, fences and edging should be filmed in great detail to avoid any damage or disputes with property owners. The CONTRACTOR will be required to replace and or repair all areas that damaged by construction activities. Areas that are in question or concern should be noted on the video and the CONTRACTOR should notify the project coordinator or inspector.

SECTION 20: WORKING DAY, WORK HOURS, SATURDAY, SUNDAY, HOLIDAY AND OVERTIME WORK

The CONTRACTOR shall not perform any contract work on Sunday, legal Holidays and outside of the twelve (12) hours available during a regular working day except as directed and/or approved by the City Project Coordinator and as specified herein. The CONTRACTOR shall not commence Construction operations before seven o'clock (7:00 A.M. Pacific Time) each working day except as directed by the City Project Coordinator and as specified herein.

If the CONTRACTOR plans to perform work outside of the twelve (12) hours available during a regular working day, the CONTRACTOR shall first obtain approval from the City Project Coordinator at least twenty-four (24) hours prior to commencing such overtime work. If the CONTRACTOR plans to perform work on Sunday, he/she shall obtain approval by the Thursday prior to work on the Sunday for which work is planned. If the CONTRACTOR plans to perform work on a legal Holiday, he/she shall first obtain approval from the City Project Coordinator at least 48 hours in advance.

The CONTRACTOR shall be charged for all of City of Sparks' employee(s) time spent for overtime, Saturday, Sunday or Holiday work, based on the employee's hourly rate, plus benefits. The CONTRACTOR will be notified of the costs incurred and if the payment is not made, such costs will be deducted from any payment due to the CONTRACTOR.

The CONTRACTOR's normal working hours shall be from 7:00 A.M. until 7:00 P.M., Monday through Friday unless otherwise required by these specifications or approved in writing by the City Project Coordinator when requested in writing by the CONTRACTOR, excluding but not limited to, the following legal Holidays, recognized by the City of Sparks:

January 1	New Year's Day
3 rd Monday in January	Martin Luther King, Jr. Birthday
3 rd Monday in February	President's Day
Last Monday in May	Memorial Day
July 4	Independence Day
1 st Monday in September	Labor Day
Last Friday in October	Nevada Day
November 11	Veteran's Day
4 th Thursday in November	Thanksgiving Day
4 th Friday in November	Family Day (day after Thanksgiving)
<u>December 25</u>	<u>Christmas Day</u>

SECTION 21: SUBMITTALS

Submittals for the following items shall be provided and shall have been compiled within the previous 12 months. One (1) electronic copy of each item should be submitted unless otherwise noted.

- Worker Certifications (if necessary)
- Bonds and Insurance
- Project Schedule and Three-Week Outlook Schedules. Project schedule shall be submitted a minimum of one (1) week prior to Pre-construction Meeting.
- Letter from Contractor to identify Contractor 24-hour emergency contact person and Contractor's authorized representative
- Outage Plans
- Electrical Gear submittal with shop drawings
- Information needed for Arc Flash by others
- Concrete Patch Mix Design
- Asset Attribute List
- Controls Equipment
- Conductors
- Raceway's and Boxes
- Grounding and bonding
- Disconnects
- Low voltage Transformers
- Data and Fiber cabling
- Data Cabinet
- Manufacturer's certification
- Start Up report
- User Manuals/Operations and Maintenance Manuals
- Test Results and Reports
- [Record Drawings](#)

Submittals for the items listed above shall be submitted to the Engineer and approved for use prior to implementation into the Project. Engineer shall have fourteen (14) days to review and comment on information submitted. Submittal transmittal will be provided by the Engineer in electronic format for Contractor use.

SECTION 22: FORCE ACCOUNT

THIS ITEM SHALL BE IDENTIFIED AS A CONTINGENT ITEM. The use of this contingent item will be as directed by the Project Coordinator. The quantity of the above contingent item of work, as set forth on the bid schedule represent no actual estimate, is nominal only and may be greatly increased or decreased or reduced to zero. The increase or reduction of this quantity as compared with that set forth on the bid schedule shall not constitute a basis for claim by the CONTRACTOR for extra payment or damages.

Force Account items as defined by the City of Sparks will be additions to the contract arising within the course and scope of the contract for incidental costs due to unforeseen circumstances. Unforeseen circumstances include but are not limited to the following:

Emergency repairs, complications arising with interfacing new improvements to existing improvements, emergency pumping, emergency light/power plants, premium time or overtime to accelerate portions of work, unexpected utility modifications or conflicts, correcting existing substandard work, requested traffic control measures or signage, over-excavation of unsuitable materials, unknown field conditions, underground storage tanks, asbestos encountered, or any other miscellaneous or incidental items related to unforeseen circumstances.

Any force account items shall be adjusted daily upon report sheets, furnished to the Project Coordinator by the CONTRACTOR and signed by both parties. These daily reports shall thereafter be considered the true record of force account items for unforeseen circumstances. No additional incidental work shall be performed or made except upon a written order from the Project Coordinator.

SECTION 23: INSURANCE AND INDEMNIFICATION

The CONTRACTOR shall not commence any work nor permit a Subcontractor to commence work on this project until satisfactory proof has been presented to the City of Sparks Purchasing Division that all insurance requirements as outlined by the City have been met.

The CONTRACTOR shall provide and maintain, during the effective life of the awarded contract, Comprehensive General Liability Insurance covering the CONTRACTOR and the City of Sparks.

SECTION 24: SEQUENCE OF CONSTRUCTION

The design should be constructed in a manner to minimize the effects to the plant operations and minimize service outage. Outages shall be brief and only as approved by the owner. Temporary power and control outages can last a maximum of four (4) hours but outages for some specific equipment may have shorter allowable timeframes. Not all work days or work shifts may be suitable for power and control shutdowns.

Contractor to develop a power and control Shutdown Schedule and submit schedule to the Engineer for review and approval. Contractor to consider plant operations during specific days and shifts when developing a Shutdown Schedule. Close coordination with Owner will be required during development of a Shutdown Schedule and during implementation of shutdowns to avoid delays during work.

Temporary service for each piece of equipment shall be provided. The Contractor shall submit a detailed outage plan and time schedule for approval by plant operations before removing any equipment, conduits, circuits or structures from service.

SECTION 25: MEETINGS

Contractor is required to attend the following anticipated meetings:

- Pre-bid Meeting
- Pre-Construction Meeting
- Construction Progress Meetings
- Substantial completion walkthrough
- Final completion walkthrough

Meetings will typically be held at the TMWRF Training Facility. Walkthroughs will occur at the Project site unless determined otherwise. The list of meetings above is not necessarily all inclusive. Other meetings may be necessary as determined by Owner or warranted by the work.

SECTION 26: TESTING, TRAINING, START UP, DEMONSTRATION, COMMISSIONING

Testing will be detailed in the electrical specifications and drawings and will be performed by a certified third party approved by the OWNER and paid for by the CONTRACTOR. Twenty-four (24) hour notice must be given by the CONTRACTOR to the Project Coordinator or Inspector prior to any testing so that all testing work will be done in the presence of the OWNER or OWNER'S Representative. See individual Technical Specification Division 16 for additional requirements.

SECTION 27: CLOSEOUT PROCEDURES

Contractor shall complete all the work within the time designated in the Agreement unless modified by Change Order or the Certificate of Substantial Completion. Contractor shall complete Work and send subsequent written notice(s) to Owner and Engineer certifying that Work or designated portion of the Work is Substantially Complete. Contractor shall submit all warranty certificates at the time of application for Substantial Completion. The guarantee and warranty periods begin with the date of Final Acceptance. However, in connection with any specific equipment certified by the Owner as completed and its use or operation thereof for its intended purpose is assumed by the Owner, the warranty period for such equipment shall begin with the beginning date of such use or operation.

In preparation for Substantial Completion or occupancy, Contractor to conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces. Broom clean paved surfaces; rake clean other surfaces of grounds.

Contractor to compile Operations and Maintenance manual for the Project. See requirements in individual Technical Specifications sections.

The Contractor shall maintain and provide Record Drawings prior to Project closeout. Record Drawings shall be full size drawings which capture and notate all differences between the work constructed and the design shown in the Drawings. Notes and sketches shall be complete, legible, precise, correct, and detailed.

The Contractor, prior to requesting final payment, shall complete, obtain, and submit the following items to the Engineer, as applicable:

- Substantial Completion Walkthrough
- Final Completion Walkthrough
- Written guarantees, where required.
- O&M Manual, Technical Manuals and instructions.
- Maintenance stock items; spare parts; special tools.
- Completed and approved record documents.
- Certificates of inspection and certificates of acceptance by local governing agencies.
- Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.
- Release form from all property owners for which the Contractor has made agreements.
- Submit final pay request to Owner in accordance with the Contract.

SECTION 28: PERMITS

The Contractor shall apply for and obtain a City of Sparks Building Permit for the work utilizing the project drawings. A placeholder item has been included on the bid form, and any deviation in cost for the actual building permit from the placeholder amount will be adjusted via change order. The Contractor shall comply with all permit requirements including but not limited to coordinating inspections from the building department and filing completion paperwork.

The contractor shall be responsible for and compliant with all other applicable Federal, State, and local standards.

SECTION 29: WEATHER PROTECTION

This project includes removal and replacement of the existing roof membrane over the laboratory building. This building contains water-sensitive equipment, and the Contractor shall be prepared to provide temporary covering of the roof in the event that precipitation is predicted to occur during periods when the roof is not watertight. The Contractor shall install and maintain the temporary coverings at no additional cost to the Owner, and shall have the coverings in place prior to the predicted occurrence of precipitation. During the precipitation event the Contractor shall monitor the status of the covering, and make such repairs and adjustments as are required to maintain watertightness.

BID ITEM CLARIFICATIONS
TMWRF LABORATORY BUILDING ROOF REPLACEMENT
BID #18/19-006 / PWP #WA-2018-248

BID ITEM 1 ~ MOBILIZATION (LUMP SUM)

- A. No specific unit of measurement shall apply to the lump sum item “Mobilization”.
- B. The bid price for “Mobilization” shall constitute full payment for “Mobilization”, complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, coordinating, obtaining and maintaining all bonds, permits, and licenses; moving equipment and materials onto and off the site; furnishing and erecting construction trailers, temporary utilities, and other construction facilities; and all preparatory work as required for the proper performance and completion of the project (including work items not identified in a separate bid item), all in accordance with the Contract Documents. This item also includes de-mobilization.

BID ITEM 2 – CITY OF SPARKS BUILDING PERMIT (LUMP SUM \$10,000)

- A. Bid Item 2 covers the cost for issuance of the City of Sparks building permit. The contractor shall be responsible to obtain and pay for the building permit. This item contains a placeholder amount of \$10,000, and any deviation from that amount for the actual building permit cost will be adjusted via change order. No measurement will be made for this item, and payment will be made as a lump sum cost.

BID ITEM 3 – REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING ROOFING MATERIALS. (LUMP SUM)

- A. This bid item includes the removal and disposal of asbestos-containing materials as specified in the material in the Appendix provided by Converse Consultants. This item includes all work related to the asbestos removal including establishment of the work area, isolation of the air intakes, abatement activities, and disposal of the removed materials. This item shall also include the costs associated with the removal Contractor applying for and receiving the appropriate Washoe County Air Pollution Acknowledgment of Asbestos Assessment form, including payment of the appropriate fees. This item shall be limited to work related to removal and disposal of the roofing materials containing asbestos, and all other demolition and new work shall be included in Bid Item 4 below.
- B. Payment will be made on a lump sum basis, and no separate measurement will be made for this item.

BID ITEM 4 ~ REMOVAL AND REPLACEMENT OF THE REMAINDER OF THE ROOFING SYSTEM ON THE EXISTING LABORATORY BUILDING (LUMP SUM)

- A. The bid price for “Removal and Replacement of the Existing Roofing System” shall constitute full payment for all “Removal and Replacement of the Existing Roofing System” work not included in the asbestos removal item, complete as specified. This item shall include, but not

be limited to, removal of vents and hatches as specified, patching of holes, removal and replacement of guardrail, modifications to the stairs, provision of the new insulation and roofing materials, modifications to electrical conduits and HVAC piping, new hatches, and installation of the new roofing materials. The bid price shall constitute full payment for all labor, materials, tools, equipment and incidentals necessary to provide a complete and weathertight roofing system and comply with these Specifications and the Contract Documents.

BID ITEM 5 ~ REMOVE AND REPLACE THE EXISTING GUTTER AND DOWNSPOUT SYSTEM (LIMITED TO EXTENT OF EXISTING GUTTER SYSTEM)

- A. The bid price for this item shall cover the removal and replacement of the existing gutter and downspout system, and shall constitute full payment for the improvements, complete as specified. This item only includes removal of the existing gutter system, and installation of a new gutter and downspout system servicing the same roofing areas. Additional gutter extensions are included as a bid alternate below. The bid price shall constitute full payment for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications and the Contract Documents. No measurement will be made for this item, and payment will be made on a Lump Sum basis.

BID ITEM 6 ~ CONTINGENCY AND FORCE ACCOUNT)

- A. The bid price for this item shall cover the additional work items as directed by the Owner and Engineer. Items identified for inclusion in this bid item will be identified by the Owner and/or the Contractor and a mutually agreed price will be negotiated prior to approval. The use of any or all of the money in this bid item is subject to the approval of the Owner, and the Contractor shall not be entitled to any additional reimbursement if only a portion or none of this item is utilized. Payment for this item will be for additional items as negotiated between the Owner and Contractor. For bidding purposes, the budget for this item is \$45,000, which shall be included within the Contractor's bid.

ADDITIVE BID ALTERNATE ITEMS

The following bid alternate may be added to the project at the Owner's option. **Please note award of the project will be based upon the lowest base bid total, excluding the bid alternate.**

BID ITEM A-1 ~ EXPAND THE NEW GUTTER AND DOWNSPOUT SYSTEM TO EXTEND AROUND THE ENTIRE BUILDING ROOF PERIMETER.

- A. The bid price for this item shall include the additional cost to extend the roof gutter and downspout system to service the entire roof as shown on the Plans. This item only includes the additional cost beyond the work included in Item 5 above, and if this item is awarded, Bid Item 5 will also be paid separately. This item shall constitute full payment for the additional work as specified and shown, and shall constitute full payment for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications and the Contract Documents. No measurement will be made for this item, and payment will be made on a Lump Sum basis.

SECTION 01100
SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY

- A. The Work to be performed under this Contract shall consist of furnishing tools, equipment, materials, and supplies and furnishing labor, transportation, and performing all work or other operations required for the fulfillment of the Contract in accordance with the Contract Documents. The Work shall be complete and all work, materials, and services not expressly indicated or called out in the Contract Documents which may be necessary for the complete and proper construction or the Work in good faith shall be provided at no increase in cost to the Owner.

- B. The Site of the Work is located at the City of Sparks Truckee Meadows Water Reclamation Water Facility, 8500 Clean Water Way, Reno, Nevada, 89502.

1.02 GENERAL DESCRIPTION OF WORK

- A. The Work includes: the furnishing of all labor, materials, and equipment for the supply, delivery, fabrication, installation, testing, and other materials and services required for the removal and replacement of the existing roofing system on the existing Laboratory Building. Specific features include, but are not limited to:
 - 1. The removal of the existing roofing and insulation systems.
 - 2. The abatement demolition.
 - 3. The removal of various roof penetrations.
 - 4. The installation of the roofing and insulation systems.
 - 5. The modifications to the existing roof penetrations.
 - 6. The installation of the gutter and downspout system.
 - 7. The installation of the tie-off system.
 - 8. Protection of existing facilities.

1.03 WORK BY OTHERS

- A. Contractor shall conduct operations so as to cause a minimum of interference with the work of such other contractors and shall cooperate with other contractors to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.

- B. Contractor shall cooperate with Owner and others to minimize mutual interference and delays. When cooperation fails, submit recommendations and perform Work in coordination with work of others as directed.

1.04 CONTRACTOR USE OF SITE

- A. The Contractor's use of Site shall be limited to its construction operations including on-site storage of materials, on-site fabrication facilities, and field offices. The Contractor

shall coordinate storage of equipment and materials with the appropriate Agencies and/or property owners.

B. The Construction Manager and Owner shall be allowed access to the Site at all times.

1.05 JURISDICTION REQUIREMENTS

A. General

1. Bonding: The Contractor shall be bonded for \$10,000 or more for this project only, and the bond shall remain in force and virtue for three years from date of the completion of the project.
2. Permits: The Contractor shall obtain all necessary permits as required by appropriate governing agency(s) prior to any construction. The Contractor shall be responsible for costs associated with any permit required.
3. Utilities Location: The Contractor shall be responsible to locate existing utility as required to complete the work and obtain all necessary permits as required by Utility owners prior to any construction.

1.06 PROJECT CONDITIONS

A. NOT USED

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01120
WORK SEQUENCE

PART 1 GENERAL

1.01 CONTINUITY OF PLANT OPERATIONS

- A. The Contractor shall coordinate the work to avoid any interference with normal operation of plant equipment and processes.

1.02 SUBMITTAL

- A. In accordance with Section 01 33 00, the Contractor shall submit a detailed work sequence plan (Plan). The Plan shall include a detailed description of the Work that will require removing equipment or facilities from service. The plan shall be coordinated with the construction schedule specified in the General Conditions of the Contract Documents and shall meet the restrictions and conditions specified in this section.

1.03 SEQUENCE AND SCHEDULE OF CONSTRUCTION

- A. The construction schedule required in in the General Conditions of the Contract Documents shall provide for the following specific conditions:
 - 1. Maintaining access to the Laboratory Building at all times.
 - 2. Maintain HVAC systems in working order during construction.
- B. The Plan shall be coordinated with the Contractor's Construction schedule and meet the restrictions and conditions specified in the Contract Documents.
- C. The Plan shall describe the Contractor's means and methods for performing the tasks listed above and the length of time required to complete said tasks.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 SUBMITTALS

- A. Submittals covered by these requirements include manufacturers' information, shop drawings, test procedures, test results, samples, requests for substitutions, and miscellaneous work-related submittals. Submittals shall also include, but not be limited to, all mechanical, electrical and electronic equipment and systems, materials, reinforcing steel, fabricated items, and piping and conduit details. The Contractor shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's installation and other instructions as specifically required in the contract documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the contract documents.

1.02 CONTRACTOR'S RESPONSIBILITIES

A. General:

1. The Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The Contractor shall ensure that there is no conflict with other submittals and notify the Construction Manager in each case where his submittal may affect the work of another contractor or the Owner. The Contractor shall coordinate submittals among his subcontractors and suppliers.
2. The Contractor shall coordinate submittals with the work so that work will not be delayed. He shall coordinate and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another. No extension of time will be allowed because of failure to properly schedule submittals. The Contractor shall not proceed with work related to a submittal until the submittal process is complete. Completion requires that submittals for review and comment shall be returned to the Contractor stamped "No Exceptions Taken" or "Make Corrections Noted."
3. The Contractor shall certify on each submittal document that he has reviewed the submittal, verified field conditions, and complied with the contract documents.
4. The Contractor may authorize in writing a material or equipment supplier to deal directly with the Construction Manager or with the Owner with regard to a submittal. These dealings shall be limited to contract interpretations to clarify and expedite the work.

1.03 CATEGORIES OF SUBMITTALS

A. General:

1. Submittals fall into three general categories; Action Submittals - Action Submittals require review and response by the Engineer before the Contractor proceeds with

incorporating the equipment, materials, or procedure addressed in a submittal into the work. Review comments for Action Submittals, and the subsequent actions of the Contractor based on the review comments, shall conform to REVIEW ACTION requirements specified in this section.

2. Informational Submittals- Informational Submittals are examined to verify that the information has been furnished as specified. If the information has not been furnished as specified the submittal will be returned marked "MAKE CORRECTIONS NOTED" and any deficiencies will be noted. If the information has been furnished as specified the submittal will be returned marked "RECEIPT ACKNOWLEDGED".
 3. Closeout Submittals – Closeout Submittals consist of documentation that is not available for review at the time Action Submittals are submitted for review or documentation that is typically generated or furnished following incorporation of the equipment, materials, or procedure into the work. Closeout submittals include spare parts inventory listing, spare parts, extra stock materials, special tools and other materials or components that are furnished separate from the installed and completed work. Closeout Submittals require review and response by the Engineer. Closeout Submittal requirements are not satisfied until they have been reviewed and returned marked "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED". BC places Record Drawings and O&M submittals and Spare Parts within the CLOSEOUT SUBMITTAL category.
 4. At the beginning of work, the Construction Manager will furnish the Contractor lists of those submittals specified in the project manual. Two separate lists will be provided: submittals for review and comment and product data (submittals) for information only.
- B. Submittals for review and comment:
1. All submittals except where specified to be submitted as product data for information only shall be submitted by the Contractor to the Construction Manager for review and comment.
- C. A preliminary Schedule of Values shall be submitted for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

1.04 TRANSMITTAL PROCEDURE

- A. General:
1. Unless otherwise specified, submittals regarding material and equipment shall be accompanied by Transmittal Form 01 33 00-A specified in Section 01 99 90. Submittals for operation and maintenance manuals, information and data shall be accompanied by Transmittal Form 01 78 23-A specified in Section 01 99 90. A separate form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required. Submittal documents common to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.

2. A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXX-Y"; where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.
- B. Deviation from contract:
1. If the Contractor proposes to provide material, equipment, or method of work which deviates from the project manual, he shall indicate so under "deviations" on the transmittal form accompanying the submittal copies.
- C. Submittal completeness:
1. Submittals which do not have all the information required to be submitted, including deviations, are not acceptable and will be returned without review.

1.05 REVIEW PROCEDURE

- A. General:
1. Submittals are specified for those features and characteristics of materials, equipment, and methods of operation which can be selected based on the Contractor's judgment of their conformance to the specified requirements. Other features and characteristics are specified in a manner which enables the Contractor to determine acceptable options without submittals. The review procedure is based on the Contractor's guarantee that all features and characteristics not requiring submittals conform as specified. Review shall not extend to means, methods, techniques, sequences or procedures of construction, or to verifying quantities, dimensions, weights or gages, or fabrication processes (except where specifically indicated or required by the project manual) or to safety precautions or programs incident thereto. Review of a separate item, as such, will not indicate approval of the assembly in which the item functions.
 2. When the contract documents require a submittal, the Contractor shall submit the specified information as follows:
 - a. Two copies of all submitted information plus one reproducible original of all information shall be transmitted with submittals for review and comment.
 - b. Unless otherwise specified, two copies of all submitted information shall be transmitted with submittals (Product Data) for information only.
- B. Submittals for review and comment:
1. Unless otherwise specified, within 21 calendar days after receipt of a submittal for review and comment, the Construction Manager shall review the submittal and return one copy of the marked-up reproducible original noted in A above. The reproducible original will be retained by the Construction Manager. The returned submittal shall indicate one of the following actions:
 - a. If the review indicates that the material, equipment or work method complies with the project manual, submittal copies will be marked "NO EXCEPTIONS TAKEN." In this event, the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.

- b. If the review indicates limited corrections are required, copies will be marked "MAKE CORRECTIONS NOTED." The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in O&M data, a corrected copy shall be provided.
- c. If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "AMEND AND RESUBMIT." Except at his own risk, the Contractor shall not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."
- d. If the review indicates that the material, equipment, or work method does not comply with the project manual, copies of the submittal will be marked "REJECTED - SEE REMARKS." Submittals with deviations which have not been identified clearly may be rejected. Except at his own risk, the Contractor shall not undertake the work covered by such submittals until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

1.06 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS:

A. General:

1. Review of contract drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide, shall not relieve the Contractor of his responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the Construction Manager or the Owner, or by any officer or employee thereof, and the Contractor shall have no claim under the contract on account of the failure, or partial failure, of the method of work, material, or equipment so reviewed. A mark of "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED" shall mean that the Owner has no objection to the Contractor, upon his own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.

END OF SECTION

SECTION 01380

PHOTOGRAPHS

PART 1 GENERAL

1.01 PRECONSTRUCTION PHOTOGRAPHS

- A. The Contractor shall provide preconstruction photographs prior to commencement of work on the site. The photographs shall indicate on the front of each print the date, name of work, and the location where the photograph was taken. Before construction may start, the photographs shall be delivered to the Construction Manager. Preconstruction photographs shall be taken at locations to be designated by the Construction Manager. The photographer shall be equipped to photograph either interior or exterior exposures, with lenses ranging from wide angle to 135 mm.

1.02 CONSTRUCTION PHOTOGRAPHS

- A. The Contractor shall provide construction photographs showing the progress of the work. The photographs shall be taken of such subjects as may be directed, and shall indicate on the front of each print the date, job title and brief description of the photograph including the location where the photograph was taken. Starting one week after the date of the preconstruction photographs and continuing as long as the work is in progress, weekly photographs shall be taken.

1.03 REQUIRED NUMBER OF PHOTOGRAPHS

- A. For the work of this contract, photographs shall be provided as listed:

Preconstruction
Construction
Acceptance

END OF SECTION

SECTION 01510
TEMPORARY UTILITIES

PART 1 GENERAL

1.01 FACILITIES:

- A. Contractor shall furnish, install, maintain, and remove all false work, scaffolding, ladders, hoist ways, braces, and the like, any of which may be needed in the construction of any part of the Work and which are not herein described or specified in detail.
- B. Contractor shall accept responsibility for the safety and efficiency of such works and for damage that may result from their failure or from their improper construction, maintenance, or operation.

1.02 SAFETY RESPONSIBILITY:

- A. Contractor shall accept sole responsibility for safety and security at the Site.
- B. Contractor shall indemnify and hold harmless Owner, Construction Manager, and Engineer, for noncompliance with governing bodies and their regulations, and for accidents, deaths, injuries, or damage at the Site during occupancy or partial occupancy of the Site by Contractor's forces while performing any part of the work.

1.03 SECURITY:

- A. Contractor shall be responsible for protection of the Site and all Work, materials, equipment, and existing facilities thereon against vandals and other unauthorized persons.

1.04 OFFICE

- A. The Contractor may maintain an office at the site of the work.

1.05 POWER

- A. The Owner will provide temporary power for construction at the plant site. The Contractor shall make arrangements with the Owner for power takeoff points, voltage and phasing requirements, transformers. The Contractor shall provide the special connections required for his work.

1.06 WATER:

- A. The OWNER will provide all necessary and required water, unless otherwise specified.

1.07 TELEPHONE

- A. The Contractor shall provide a 24 hour telephone contact so that the Owner may contact the Contractor in an emergency condition.

1.08 SANITARY FACILITIES

- A. The Contractor shall provide toilet and washup facilities for his work force at the site of work. The facilities shall comply with applicable laws, ordinances, and regulations pertaining to the public health and sanitation.

END OF SECTION

SECTION 01720
RECORD DRAWINGS

PART 1 GENERAL

1.01 DRAWINGS

- A. Record drawings refer to those documents maintained and annotated by the Contractor during construction and are defined as
 - 1. a neatly and legibly marked set of contract drawings showing the final location of piping, equipment, electrical conduits, outlet boxes and cables;
 - 2. Contractor layout and installation drawings.

- B. Unless otherwise specified, record drawings shall be full size and maintained in a clean, dry, and legible condition. Record documents shall not be used for construction purposes and shall be available for review by the Construction Manager during normal working hours at the Contractor's field office. At the completion of the work, prior to final payment, all record drawings shall be submitted to the Construction Manager.

- C. Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed. Annotations to the record documents shall be made with an erasable colored pencil conforming to the following color code:
 - 1. Additions - Red
 - 2. Deletions - Green
 - 3. Comments - Blue
 - 4. Dimensions - Graphite

END OF SECTION

SECTION 02410

DEMOLITION

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. Contractor shall provide all labor, materials, equipment, and incidentals as shown, specified and required for demolition, removal, and disposal Work.
2. The Work under this Section includes, but is not necessarily limited to:
 - a. Demolition and removal of the existing roofing system on the Laboratory Building as shown.
3. Demolitions and removals specified under other Sections shall comply with requirements of this Section.

B. Coordination:

1. Review procedures under this and other Sections and coordinate the Work that will be performed with or before demolition and removals.
2. Notify other contractors in advance of demolition and removals Work to provide other contractors with sufficient time for performing work and coordinating items included in their contracts that will be performed before or in conjunction with demolition and removals Work.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 PREPARATION

A. Notification:

1. At least 48 hours prior to commencing demolition or removal, notify Owner in writing of planned start of demolition Work. Do not start removals without permission of Owner.

B. Protection of Surrounding Areas and Facilities:

1. Perform demolition and removal Work in a manner that prevents damage and injury to property, structures, occupants, the public, and facilities. Do not interfere with use of, and free and safe access to and from, structures and properties.
2. Closing or obstructing of roads, drives, sidewalks, and passageways adjacent to the Work is not allowed unless indicated otherwise in the Contract Documents. Conduct the Work with minimum interference to vehicular and pedestrian traffic.
3. Provide temporary barriers, lighting, sidewalk sheds, and other necessary protection.
4. Repair damage to facilities that are to remain.

3.02 DEMOLITION – GENERAL

- A. Locate construction equipment used for demolition Work and remove demolished materials and equipment to avoid imposing excessive loading on supporting and adjacent walls, floors, framing, facilities, and Underground Facilities.
- B. Finishing of Surfaces Exposed by Removals: Unless otherwise shown or indicated in the Contract Documents, surfaces of walls, floors, ceilings, and other areas exposed by removals, and that will remain as finished surfaces, shall be repaired and re finished with materials that match existing adjacent surface, or as otherwise approved by Engineer.

3.03 DISPOSAL OF DEMOLITION DEBRIS

- A. Remove from the Site all debris, waste, rubbish, and material resulting from demolition operations and equipment used in demolition Work.
- B. Transportation and Disposal:
 - 1. Non-hazardous Material: Properly transport and dispose of non-hazardous demolition debris at appropriate landfill or other suitable location, in accordance with Laws and Regulations. Non-hazardous material does not contain Asbestos, PCBs, Petroleum, Hazardous Waste, Radioactive Material, or other material designated as hazardous in Laws and Regulations.
 - 2. Hazardous Material: When handling and disposal of hazardous materials is included in the Work, properly transport and dispose of hazardous materials in accordance with the Abatement Documents and Laws and Regulations.

END OF SECTION

SECTION 05522
ALUMINUM HANDRAILS AND RAILINGS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Prefabricated anodized aluminum component type guardrail and handrail systems; herein referred to as railing.

1.02 RELATED SECTIONS

- A. This section contains specific references to the following related sections. Additional related sections may apply that are not specifically listed below.
1. Section 07540 Adhered PVC Thermoplastic Membrane Roofing .

1.03 REFERENCES

- A. The references listed below are a part of this section. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
Aluminum Design Manual	The Aluminum Association, Aluminum Design Manual with Specifications and Guidelines for Aluminum Structures
ASTM B209	Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B210	Aluminum and Aluminum-Alloy Drawn Seamless Tubes
ASTM B221	Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B429	Aluminum-Alloy Extruded Structural Pipe and Tube
ASTM B483	Aluminum and Aluminum-Alloy Drawn Tube and Drawn Pipe for General Purpose Applications
ASTM F593	Stainless Steel Bolts, Hex Cap Screws, and Studs
ASTM F594	Stainless Steel Nuts
AWS D1.2	Structural Welding Code, Aluminum
OSHA	U.S. Dept. of Labor, Occupational Safety and Health Administration
IBC	International Building Code with local amendments

1.04 SUBMITTALS

- A. Action Submittals:
1. Procedures: Section 01300.
 2. A copy of this specification section with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements.
 3. Check-marks (✓) shall denote full compliance with a paragraph as a whole. Deviations shall be underlined and denoted by a number in the margin to the right of the identified paragraph. The remaining portions of the paragraph not underlined will

signify compliance on the part of the Contractor with the specifications. Include a detailed, written justification for each deviation. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

4. Layout, installation, and detail shop drawings for railing.
5. Design calculations stamped and signed by a licensed professional engineer in the State of Nevada. Railing and base support connections to be designed by the Contractor incorporating specified criteria and provisions in the current building code with local governing amendments.

B. Informational Submittals:

1. Material certification for compliance with this specification for aluminum and stainless steel materials.

1.05 QUALITY ASSURANCE

A. General:

1. Railing shall conform to the standards of the Occupational Safety and Health Administration (OSHA) and International Building Code.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Cushion wrap complete rails, modules and components to prevent scratching and denting during shipment, storage, and installation.
- B. Leave wrap intact, insofar as possible, until railing is completely installed.

PART 2 PRODUCTS

2.01 PERFORMANCE/DESIGN CRITERIA

- A. Railing assembly and attachments shall resist a minimum uniform load of 50 pounds per linear foot on the top rail and a concentrated load of 200 pounds (not acting concurrently with the uniform load) applied in any direction. Contractor's supplier and engineer are responsible for designing the guardrail/handrail system along with its base support and anchor bolt size and embedment depth into concrete, or connection to metal framing, to resist the above loading condition taking into account anchor edge distances and concrete strengths at the point of attachment. Contractor shall submit calculations signed and sealed by a professional engineer in the State of Nevada.
- B. Thermal Movements: Provide railing that allow for thermal movements resulting from the project site maximum range in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime sky heat loss.

2.02 MANUFACTURERS

- A. Julius Blum & Co., Inc.
- B. Golden Railing Inc.

- C. Moultrie Manufacturing.
- D. American Railing Systems, Inc.
- E. Approved equal.

2.03 MATERIALS

Component	Material
Aluminum pipe	ASTM B210 Alloy 6060-T832; ASTM B 221 Alloy 6063-T5/T52; ASTM B 429, Alloy 6063-T832; ASTM B483, Alloy T832
Aluminum plate	ASTM B209, Alloy 6061-T6
Stainless steel bolts	ASTM A593, Type 316
Stainless steel nuts and washers	ASTM A594, Type316

2.04 CONFIGURATION/COMPONENTS

- A. Guard Top Rails: Minimum 1 1/2 inch nominal diameter pipe, Schedule 40.
- B. Intermediate Rails: Minimum 1 1/2 inch nominal diameter pipe, Schedule 40.
- C. Handrails: 1 1/2 inch nominal diameter pipe, Schedule 40.
- D. Posts: Minimum 1 1/2 inch nominal diameter pipe, Schedule 80.
- E. Provide manufacturer’s heavy-duty base fitting with stainless steel set screws.
- F. Provide aluminum toe boards at guardrails, except where concrete curbs are indicated. Aluminum toe boards shall be minimum 3/16-inch thick plate, connected to the posts.
- G. Bolts, including anchor bolts, shall be Type 316 stainless steel.
- H. Fittings:
 - 1. Fittings shall be cast aluminum elbows, T-shapes, post brackets and escutcheons. Provide adapter and anchor plugs as required for a complete installation.
 - 2. Floor sleeves for removable railing shall be stainless steel, embedded in concrete.

2.05 ASSEMBLY/FABRICATION

- A. Pipe cuts shall be clean, straight, square and accurate for minimum joint gap. Work shall be done in conformance with the guardrail and handrail manufacturer's instructions. Work shall be free from blemishes, defects, and misfits of any type which can affect durability, strength, or appearance.
- B. Guardrailing and handrailing shall be connected by screws or bolts or welding. Holes shall be punched 1/16 inch larger than the nominal size of the bolts, unless otherwise specified. Wherever needed because of the thickness of the metal, holes shall be subpunched and reamed or drilled. Components with mismatched holes shall be replaced. No drifting of bolts or enlargement of holes will be allowed to correct misalignment.

- C. Supply components required for anchorage of fabrications.
- D. Where shop welding is used, grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints tight and flush. Round exposed edges to small, uniform radius. Use filler alloy rods that will not discolor when anodized, such as ER 5154, ER 5254, ER 5183, ER 5356 or ER 5556 filler alloy rods.

2.06 ISOLATION COATING

- A. Isolation coating shall be applied to all aluminum surfaces in contact with concrete, masonry, or dissimilar metals. Use a heavy coat of bituminous paint.

2.07 FINISHES

- A. Dark bronze anodized in accordance with the Aluminum Association AA-M32-C22-A42. Anodize exposed prefabricated components, except stainless steel fasteners, after fabrication.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine and accept existing conditions before beginning work.
- B. Field verify measurements for railings before fabrication.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's written instructions.
- B. Protect dissimilar metals from galvanic corrosion by means of pressure tapes, coatings, or isolators. Aluminum in contact with concrete or grout shall be protected with a heavy coat of bituminous paint.
- C. Unless otherwise indicated, field welding of railing is not permitted.

3.03 TOLERANCES

- A. Maximum variance from plumb: 1/4 inch.
- B. Maximum offset from true alignment: 1/4 inch.

END OF SECTION

SECTION 06100
ROUGH CARPENTRY

PART 1 GENERAL

1.01 DESCRIPTION

A. This section specifies all rough carpentry.

1.02 QUALITY ASSURANCE

A. References:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ANSI B18.2.1	Square and Hex Bolts and Screws, Inch Series Including Hex Cap Screws and Lag Screws
ANSI B18.2.2	Square and Hex Nuts (Inch Series)
ANSI B18.5	Round Head Bolts (Inch Series)
ANSI B18.6.1	Wood Screws (Inch Series)
ASTM A687	High-Strength Nonheaded Steel Bolts and Studs
AWPA C1	All Timber Products—Preservative Treatment by Pressure Process
AWPA C2	Standard for the Preservative Treatment of Lumber, Timber, Bridge Ties, and Mine Ties by Pressure Treatment
AWPA C9	Plywood—Preservative Treatment by Pressure Process
AWPA M6	Brands Used on Forest Products
AWPB LP-22	Standard for Softwood Lumber, Timber, and Plywood Pressure Treated with Waterborne Preservatives for Ground Contact Use
FEDSPEC FF-B-588C	Bolt, Toggle, and Expansion Sleeve, Screw
FEDSPEC FF-N-105B	Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
FEDSPEC FF-S-325	Shield, Expansion, Nail Expansion, and Nail, Drive Screw (Devices, Anchoring, Masonry)
FEDSPEC FF-T-1813	Tack
FEDSPEC MM-T-371E	Ties, Railroad, Wood (Cross and Switch)

Reference	Title
FEDSPEC UU-B-790A	Building Paper, Vegetable Fiber: (Kraft, Waterproofed, Water Repellent and Fire Resistant)
MIL-L-19140E	Lumber and Plywood, Fire-Retardant Treated
NFP-NDS	National Design Specification for Wood Construction and Supplement 1986, Design Values for Wood Construction
PS 1	U.S. Department of Commerce, Product Standard, Construction/Industrial Plywood
PS 20	U.S. Department of Commerce, Product Standard, American Softwood Lumber Standards
TPI 78	Design Specification for Metal Plate Connected Wood Trusses
TPI BWT	Bracing Wood Trusses—Commentary and Recommendations
TPI HET	Handling and Erecting Wood Trusses—Commentary and Recommendations
TPI QST	Quality Standard for Metal Plate Connected Wood Trusses
UBC	Uniform Building Code

B. Grading and Marking:

1. Lumber:

- a. Each piece of framing and board lumber and each bundle of small pieces of lumber shall be marked with the grade mark of a recognized association or independent inspection agency. Such association or agency shall be certified by the Board of Review, American Lumber Standards Committee, to grade the species used.

2. Plywood:

- a. Each sheet shall be marked with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark shall identify the plywood by species group or span rating, exposure durability classification, grade, and compliance with PS 1.

3. Preservative-Treated Lumber and Plywood:

- a. The Contractor shall be responsible for the quality of treated wood products. Each treated piece shall be permanently marked or branded by the producer in accordance with AWP A M6. The Contractor shall provide the Construction Manager with the inspection report of an independent inspection agency showing that offered products comply with applicable AWP A treatment standards. The AWP B Quality Mark "LP-22" on each piece will be accepted, in lieu of inspection reports, as evidence of compliance with applicable AWP A treatment standards.

C. Sizes and Surfacing:

1. Dressed sizes of yard and structural lumber shall comply with PS 20. Unless otherwise specified, lumber shall be surfaced four sides. Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced.

D. Moisture Content:

1. Lumber shall be air-dried or kiln-dried. Treated lumber shall be kiln-dried after treatment. Maximum moisture content of wood products shall be as follows:
 - a. Framing lumber and boards—19 percent maximum.

- b. Timbers 5 inches and thicker--25 percent maximum.

1.03 SUBMITTALS

- A. The following information shall be provided in accordance with Section 01300:
 - 1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Construction Manager shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
 - 2. Detailed list of equipment, joist hangers, and type of fasteners to be used.

1.04 STORAGE

- A. Materials shall be stored in an area protected from weather, elevated a minimum of 6 inches above the ground on framework and covered with waterproof covering. Materials shall not be stored in wet or damp areas.

1.05 PRESERVATIVE TREATMENT

- A. Lumber and timber, where specified, shall be treated in accordance with AWPA C1 and C2 and plywood in accordance with AWPA C1 and C9. All wood shall be air- or kiln-dried after treatment. Specific treatments shall be verified by the report of an approved independent inspection agency or the AWPB Quality Mark on each piece. Surfaces of lumber that will be exposed shall not be incised. Areas that are cut or drilled after treatment shall be brush coated with either the same preservative used in the treatment or with a 2 percent copper naphthenate solution. Preservatives used shall be acceptable for specific treatment under local codes and regulations pertaining to toxic and hazardous materials. Unless otherwise specified, the following items shall be preservative treated:

PART 2 PRODUCTS

2.01 LUMBER

- A. Framing Lumber:
 - 1. Framing lumber such as studs, plates, caps, collar beams, cant strips, bucks, sleepers, nailing strips, and nailers and board lumber such as subflooring and wall and roof sheathing shall be one of the species listed in the table below. Minimum grade of species shall be as listed.

Table of Grades for Framing and Board Lumber

Grading rules	Species	Exterior and interior trim, finish, and frames
#1	Douglas fir-larch	Framing and Blocking
#1	Spruce-pine-fir	Framing and Blocking

2.02 ROUGH HARDWARE

- A. Unless otherwise specified, rough hardware shall be of the type and size necessary for the project requirements. Sizes, types, and spacing of fastenings of manufactured building materials shall be as recommended by the product manufacturer unless otherwise specified. Rough hardware exposed to the weather or embedded in or in contact with preservative treated wood, exterior masonry, or concrete walls or slabs shall be hot-dip galvanized. Nails and fastenings for fire-retardant treated lumber and woodwork exposed to the weather shall be copper alloy.
- B. Bolts, nuts, studs, and rivets shall conform to ANSI B18.2.1, ANSI B18.5, ANSI B18.2.2, and ASTM A687.
- C. Expansion shields shall conform to FEDSPEC FF-S-325. Unless otherwise specified, maximum size of devices in Groups IV, V, VI, and VII shall be 3/8 inch.
- D. Lag screws and lag bolts shall conform to ANSI B18.2.1.
- E. Toggle bolts shall conform to FEDSPEC FF-B-588.
- F. Wood screws shall conform to ANSI B18.6.1.
- G. Wire nails shall conform to FEDSPEC FF-N-105.

2.03 PRODUCT DATA

- A. The following information shall be provided in accordance with Section 01300:
 - 1. Shop drawings for fabricated wood trusses and other fabricated structural members indicating materials, details of construction, methods of fastening, and erection details.
 - 2. Inspection report specified in paragraph 1.02 Preservative-Treated Lumber and Plywood.

PART 3 EXECUTION

3.01 INSTALLATION

- A. General:
 - 1. Framing lumber and other rough carpentry shall be fit and set accurately to the required lines and levels and secured in place in a rigid manner. Framing members between bearing points shall not be spliced. Joists, rafters, and purlins shall be set with their crown edge up. Members shall be framed for the passage of pipes, conduits, and ducts; however, cutting or boring of structural members for the passage of ducts or pipes is not permitted. Unless otherwise specified, all members damaged by such cutting or boring shall be reinforced by means of specially formed

and approved sheet metal or bar steel shapes, and spiking and nailing shall be in accordance with the Nailing Schedule contained in UBC. Spikes, nails, and bolts shall be drawn up tight. Timber connections and fastenings shall conform to NFPA-NDS. Slate or steel shims shall be used when leveling joists, beams, and girders on masonry or concrete.

B. Sills:

1. General:

a. Sills shall be set level and square, wedged with steel or slate shims, and grouted with nonshrinking cement mortar to provide continuous and solid bearing. Sills shall be anchored to the foundations as specified. Unless otherwise specified, minimum 5/8-inch diameter bolts shall be provided at all corners and splices and spaced at a maximum of 6 feet o.c. between corner bolts. At least two bolts shall be provided for each sill member. Bolts shall be provided with plate washers and nuts. Bolts in exterior walls shall be zinc-coated.

2. Anchors in Masonry:

a. Unless otherwise specified, anchor bolts shall be embedded not less than 15 inches in masonry unit walls and each provided with a nut and a 2-inch diameter washer at bottom end. Bolts shall be fully grouted with mortar.

3. Anchors in Concrete:

a. Unless otherwise specified, anchor bolts shall be embedded not less than 8 inches in poured concrete walls and each provided with a nut and a 2-inch diameter washer at bottom end. A bent end may be substituted for the nut and washer; bend shall be not less than 90 degrees.

END OF SECTION

SECTION 07540

ADHERED PVC THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL CONDITIONS

1.01 DESCRIPTION

A. Scope

1. Remove the existing roof system and all of its components down to the existing concrete substrate.
2. Prepare and repair existing concrete substrate to receive new layer Sarnavap SA self-adhered vapor barrier. Provide and Install new layer of Sarnavap SA self-adhered vapor barrier per PVC manufacturer's detail and installation requirements.
3. Provide and install one new layer of rigid polyisocyanurate with thickness shown. Stagger all joints and fully adhered with approved low rise polyurethane foam adhesive per approved PVC manufacturer's installation and detail requirements and the following specification and conforming to FM 1-90 attachment requirements.
4. Provide and install new layer of ½" Dens Deck Prime over newly installed rigid insulation and rigid tapered insulation. Stagger all joints and fully adhere new ½" Dens Deck Prime with approved low rise polyurethane foam adhesive per the approved PVC membrane manufacturer's installation and detail requirements and the following specifications and conforming to FM 1-75 wind uplift requirements.
5. Provide and install a new adhered 60 mil Single Ply Thermoplastic (PVC) Roofing Textured Membrane along with flashings and other components to comprise a roofing system per the following specifications. Membrane color to be Gray.
6. Install a new clad metal detail at perimeter edge where required per the following specification and detail requirements. Install per PVC manufacturer's detail and installation requirements.
7. Install new surface mounted counter flashing where required. Install per PVC manufacturer's detail and installation requirements.
8. At all A/C or Mechanical unit access areas, install new PVC Crossgrip walkway. Install per PVC manufacturer's recommended detail and installation requirements.
9. Flash each penetration with a cone flashing membrane per PVC manufacture's standard written and detail requirements. Any and all pitch pans are to be removed and each penetration flashed individually.

B. Related Work

1. The work includes but is not necessarily limited to the installation of:
 - a. Roofing and Insulation Installation
 - b. Substrate Preparation
 - c. Roof Drainage
 - d. Wood Blocking
 - e. Insulation
 - f. Separation Layers
 - g. Roof Membrane
 - h. Fasteners
 - i. Adhesive for Flashings

- j. Roof Membrane Flashings
 - k. Walkways
 - l. Metal Flashings
 - m. Sealants
- C. Upon successful completion of work the following warranties may be obtained:
- 1. Manufacturer Warranty – 20 Year Systems Warranty “No Dollar Limit”
 - 2. Roofing Contractor Warranty – 5 Year

1.02 QUALITY ASSURANCE

- A. This roofing system shall be applied only by a Roofing Contractor authorized by the Manufacturer prior to bid (“Applicator”). The Roofing Contractor shall have at least five (5) years of experience as an applicator with the submitted manufacturer as certified by the manufacturer.
- B. Upon completion of the installation and the delivery to the Manufacturer by the Applicator of a certification that all work has been done in strict accordance with the contract specifications and the Manufacturer’s requirements, an inspection shall be made by a Technical Representative of the Manufacturer to review the installed roof system.
- C. There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner, the Owner’s Representative and the approved PVC Membrane Manufacturer.
- D. All work pertaining to the installation of the membrane and flashings shall only be completed by Applicator personnel trained and authorized by the Manufacturer in those procedures.
- E. Membrane to have no formulation changes in the last fifteen (15) years as certified by the manufacturer. No private labeled membrane products will be accepted or reviewed.
- F. Unreinforced or polyester reinforced membrane base flashings are prohibited.
- G. PVC Membrane Manufacturer’s warranty shall “No Dollar Limit” for the replacement of defective materials and/or labor and shall not contain any exclusion for ponding water.
- H. PVC Membrane Manufacturer shall submit third party test data documenting the proposed equal has a membrane “polymer thickness” with two (2) mils of the specified mil thickness, ASTM (+/-) mil tolerances are not excepted.
- I. PVC Membrane Manufacturer must have an established program for recycling membrane at the end of its useful life. The membrane manufacture must provide three (3) instances in which they have done so.
- J. PVC Membrane Manufacturer to confirm in writing that they directly manufacture the roofing membrane (private labeled membranes are no acceptable)

1.03 SUBMITTALS

All submittals which do not conform to the following requirements will be rejected.

A. Submittals with Bid

1. A list of each primary component to be used in the roof system and the Manufacturer's current literature for each component.
2. Sample copy of Contractor's warranty.
3. Letter from Roofing Manufacturer confirming that the Contractor is an authorized applicator of the specified roof system.

B. Submittals of Equals

1. Submit proposed equals to be considered for use on this project no less than ten (10) days prior to bid date. Proposed roof systems which have been reviewed and accepted will be listed in an addendum prior to bid date; only then will roof systems be accepted at bidding.
2. Submittals shall include the following:
 - a. Copies of Specification including physical properties.
 - b. Samples of each primary component to be used in the roof system and the manufacturer's current literature for each component.
 - c. Written approval by the insulation manufacturer for use and performance of the product in the proposed system.
 - d. Sample copy of Manufacturer's warranty including no exclusion for ponding water and no time limit shall be assigned to any such ponding water.
 - e. Sample copy of Applicator's warranty.
 - f. Certifications by manufacturers of roofing and insulating materials that all materials supplied comply with all requirements of the identified ASTM and industry standards or practices and requirements of this specification as stated in Section 2.01, C & D and Quality Assurance. Copy of the ASTM Certification for the named product showing the Type II Class I fiberglass reinforced roofing membrane.
 - g. Certification from the Applicator that the system specified meets all identified code and insurance requirements as required by the Specification.
 - h. Letter from the proposed manufacturer confirming the number of years it has directly manufactured the proposed roof system under the trade names and/or trademarks as proposed. No private labeled products/membranes will be accepted or reviewed.
 - i. Material Safety Data Sheets (MSDS)
 - j. Written Confirmation from a corporate officer of the roofing system manufacturer that the membrane manufacturer has initiated a post-consumer recycle program.

1.04 CODE REQUIREMENTS

The applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.

- A. Factory Mutual Research Corporation (FM) - Norwood, MA
 - 1. Class 1-90 (attachment requirements only)
- B. Underwriters Laboratories, Inc. - Northbrook, IL
 - 1. Class A assembly
- C. California Title 24 Part 6: Roof Membrane (not post installation applied finish) must comply with current minimum 3 year aged solar reflectance of 0.55 and a minimum thermal emittance of .75.
- D. Field and Flashing membrane shall conform to ASTM D4434 (latest version), Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II Grade I.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.
- D. All adhesives shall be stored at temperatures between 40° F (5° C) and 80° F (27° C).
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- F. All materials which are determined to be damaged by the Owner's Representative or the manufacturer are to be removed from the job site and replaced at no cost to the Owner.

1.06 JOB CONDITIONS

- A. Membrane materials may be installed under certain adverse weather conditions but only after consultation with the Manufacturer and Owner's Representative, as installation time and system integrity may be affected.
- B. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be cleaned and heat welded before leaving the job site that day.
- C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.
- D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.

- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- G. The Applicator is cautioned that certain membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with the membranes. The Applicator shall consult the manufacturer regarding compatibility, precautions and recommendations.
- H. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over Felt or plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.
- I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods.
- J. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.
- K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable City, State and Federal requirements.
- L. All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site by the Applicator and properly transported to a legal dumping area authorized to receive such material.
- M. The Applicator shall take precautions that storage and/or application of materials and/or equipment does not overload the roof deck or building structure.
- N. Installation of the membrane over coal tar pitch or a resaturated roof requires special consideration to protect the membrane from volatile fumes and materials. Consult the manufacturer for precautions prior to bid.
- O. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.
- P. All rooftop contamination that is anticipated or that is occurring shall be reported to the manufacturer to determine the corrective steps to be taken.
- Q. The Applicator shall verify that the roof drainage system is functioning correctly (not clogged or blocked) before starting work. Applicator shall report any such blockages in

writing (letter copy to the manufacturer) to the Owner's Representative for corrective action prior to installation of the roof system.

- R. Applicator shall immediately stop work if any unusual or concealed condition is discovered and shall immediately notify Owner of such condition in writing for correction at the Owner's expense (letter copy to the manufacturer).
- S. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.
- T. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.
- U. The Applicator shall conduct fastener pullout tests in accordance with the latest revision of the SPRI/ANSI Fastener Pullout Standard to help verify condition of deck/substrate and to confirm expected pullout values.
- V. The adhered membrane shall not be installed under the following conditions without consulting the manufacturer's technical department for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.
 - 2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
 - 3. The wall/deck intersection permits air entry into the wall flashing area.
- W. Precautions shall be taken when using adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.
- X. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.

1.07 BIDDING REQUIREMENTS

- A. Pre-Bid Meeting:
 - 1. A pre-bid meeting shall be held with the Owner's Representative and involved trades to discuss all aspects of the project. The Applicator's field representative or roofing foreman for the work shall be in attendance. Procedures to avoid rooftop damage by other trades shall be determined.
- B. Site Visit:
 - 1. Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the contractor. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Owner's Representative.

1.08 WARRANTIES

- A. 20 Year Systems Warranty (only products purchased from the membrane manufacturer are covered under System Warranty)

1. Upon successful completion of the work to the Roofing Manufacturer's and Owner's satisfaction, and receipt of final payment, the twenty (20) Year Systems Warranty shall be issued. The System Warranty shall provide for the roof membrane, all accessories that comprise a roof system, and contractor labor. The Warranty shall be Non-Prorated provide for No Dollar Limit (NDL), and shall not exclude ponding water and no time limited shall be assigned for any such ponding water during the warranty period.
- B. Applicator/Roofing Contractor Warranty
1. The Applicator shall supply the Owner with a separate five-year workmanship warranty. In the event any work related to roofing, flashing, or metal is found to be within the Applicator warranty term, defective or otherwise not in accordance with the Contract Documents, the Applicator shall repair that defect at no cost to the Owner. The Applicator's warranty obligation shall run directly to the Owner, and a copy shall be sent to the manufacturer.
- C. Owner Responsibility
1. Owner shall notify both the manufacturer and the Applicator of any leaks as they occur during the time period when both warranties are in effect.

PART 2 PRODUCTS

2.01 GENERAL

- A. The components of the Adhered roof system are to be products of the membrane manufacturer as indicated on the Detail Drawings and specified in the Contract Documents.
- B. Components to be used that are other than those supplied or manufactured by the membrane manufacturer may be submitted for review and acceptance by the manufacturer. The manufacturer's acceptance of any other product is only for a determination of compatibility with membrane products and not for inclusion in the manufacturer's warranty. The specifications, installation instructions, limitations, and/or restrictions of the respective manufacturers must be reviewed by the Owner's Representative for acceptability for the intended use with the manufacturer's products.
- C. Membrane shall be certified by the manufacturer to be within two (2) mils of the specified membrane thickness as stated in this section. ASTM minimum standards of +/- 10% will not be accepted.

2.02 MEMBRANE

- A. Basis of Design - Sika Sarnafil® G410 textured fiberglass reinforced membrane with a factory-applied integral lacquer coating to repel dirt and sustain reflectivity.
- B. Membrane shall conform to ASTM D4434-96 (or latest revision), "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II, Grade I.
1. Sika Sarnafil G410 textured, 60 mil , thermoplastic membrane with fiberglass reinforcement.
 2. Or Pre-Approved Equal.

C. Color of Membrane

1. Gray, initial reflectivity of 0.83, initial emissivity 0.90, solar reflective index (SRI) of >104.
2. Other standard colors as selected by architect.

D. Typical Physical Properties

Parameters	ASTM Test Method	Minimum ASTM Requirement	Sarnafil Typical Physical Properties
Reinforcing Material	-	-	Fiberglass
Overall Thickness, min., inches (mm)	D751	0.045	[0.048 inches]
Tensile Strength, min., psi (MPa)	D751	1500 (10.4)	1600 (11.1)
Surface, Top	-	-	Textured
Elongation at Break, min. (machine x tranverse)	D751	250% / 230%	270% / 250%
Seam strength*, min. (% of tensile strength)	D751	75	80
Retention of Properties After Heat Aging	D3045	-	-
Breaking Strength (% of original)	D751	90	95
Elongation, min., (% of original)	D751	90	90
Tearing Resistance, min., lbf (N)	D1004	10 (45.0)	14 (63.0)
Low Temperature Bend, -40° F (-40° C)	D2136	Pass	Pass
Accelerated Weathering Test (Xenon Arc)	G154	5,000 Hours	10,000 Hours
Cracking (7x magnification)	-	None	None
Discoloration (by observation)	-	Negligible	Negligible
Crazing (7 x magnification)	-	None	None
Linear Dimensional Change	D1204	0.10 %	0.02%
Weight Change After Immersion in Water	D570	± 3.0%	2.5%
Static Puncture Resistance, 33 lbf (15 kg)	D5602	Pass	Pass
Dynamic Puncture Resistance, 7.3 ft-lbf (10 J)	D5635	Pass	Pass

*Failure occurs through membrane rupture not seam failure.

2.03 FLASHING MATERIALS

A. Wall/Curb Flashing

1. Flashing Membrane
 - a. A fiberglass reinforced membrane adhered to approved substrate using adhesive.
2. Clad
 - a. A PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles. Clad is a 25 gauge, G90 galvanized metal sheet with a 20 mil (1 mm) unsupported membrane laminated on one side.

B. Miscellaneous Flashing

1. Stack – Membrane Prefabricated Pipe Flashing
 - a. A prefabricated vent pipe flashing made from 0.048 inch (48 mil/1.2 mm) thick G410 membrane.
2. Circle-"G"

- a. Circular 0.048 inch (48 mil/1.2 mm) thick G410 membrane patch welded over T-joints formed by overlapping thick membranes.
- 3. Corner
 - a. Prefabricated outside and inside flashing corners made of 0.060 inch (60 mil/1.5 mm) thick membrane that are heat-welded to membrane or Clad base flashings. Corner is available in 2 outside sizes (5 inch and 8½ inch diameter/127 mm and 215 mm) and 1 inside size.
- 4. Multi-Purpose Sealant
 - a. A sealant used at flashing terminations.
- 5. Flashing Adhesive
 - a. A solvent-based reactivating-type adhesive used to attach membrane to flashing substrate.
- 6. Self-Adhered Vapor Barrier
 - a. A 32 mil self-adhesive vapor barrier that can also serve as temporary roof protection. Self-Adhered Vapor Barrier is available in rolls 44.9 inches x 133.8 feet.

2.04 INSULATION & SEPARATION BOARD

- A. Dens-Deck Prime – 1/2” thickness
 - 1. A siliconized gypsum, fire-tested hardboard with glass-mat facers. Dens-Deck is provided in a 4 ft x 8 ft (1.2 m x 2.4 m) board size and in thicknesses of ½ inch.
- B. Rigid Insulation – (if required)
 - 1. Rigid polyisocyanurate foam insulation with black mat facers, 20 psi. Consult product data sheet for additional information.

2.05 ATTACHMENT COMPONENTS

- A. Membrane adhesive
 - 1. Water Based Adhesive: Field Membrane
 - a. A water-based adhesive used to attach the membrane to horizontal or near-horizontal substrates. Application rates are as follows:

APPLICATION RATES FOR FELTBACK MEMBRANE						
	Adhesive Rates - Gallons/ 100 Ft ² (Liters/Meter ²)					Approximate Sq. Ft./Pail (meter ²)
	Substrate		Membrane		Total	
Isocyanurate facer	1.75 (0.71)	+	0	=	1.75 (0.71)	285 (26.48)
Smooth plywood	1.75 (0.71)	+	0	=	1.75 (0.71)	285 (26.48)
Concrete deck	2.00 (0.81)	+	0	=	2.00 (0.81)	250 (23.23)
Cellular concrete	2.00 (0.81)	+	0	=	2.00 (0.81)	250 (23.23)
GP Dens-Deck®	1.75 (0.71)	+	0	=	1.75 (0.71)	285 (26.48)
GP Dens-Deck Prime®	1.50 (0.61)	+	0	=	1.50 (0.61)	333 (30.94)

Notes:

- a) *There is a significant increase in drying time due to an increase in humidity and/or a decrease in temperature. Do not install when outdoor or substrate temperatures during drying period are expected to fall below 40° F (5° C).*
- b) *Do not allow water based adhesive to skin-over or surface-dry prior to installation of membrane.*
- c) *Use a water-filled, foam-covered lawn roller to consistently and evenly press the membrane into the adhesive layer.*

B. Fastener XP

- 1. A #15, heavy duty, corrosion resistant fastener used with peel-stop and bar to attach PVC membrane to steel or wood decks. Fastener XP has a shank diameter of approximately .21 inch (5.3 mm) and the thread diameter is approximately .26 inch (6.6 mm). The driving head has a diameter of approximately .435 inch (11 mm) with #3 Phillips recess to for positive engagement.

C. Peel Stop

- 1. An extruded aluminum, low profile bar used with certain fasteners to attach to the roof deck or to walls/curbs at terminations, penetrations and at incline changes of the substrate. Stop is a 1 inch (25 mm) wide, flat aluminum bar 1/8 inch (3 mm) thick that has predrilled holes every 6 inches (152 mm) on center.

D. Insulation Board Adhesive

- 1. Olybond 500 Adhesive
 - a. A two component (part A and B) low rise polyurethane foam used to attach insulation to approved compatible substrates. Adhesive is applied with a pace cart in bands 12 inches on center. Application rates are typically one gallon per square. Additional adhesive may be required for rougher surfaces.
- 2. Millenium Adhesive:
 - a. A one step low rise polyurethane foam used to attach insulation to approved compatible substrates. Adhesive is applied with a gravity fed applicator or by hand with a dual component caulk gun in bands 12 inches on center. Additional adhesive may be required for rougher surfaces.

2.06 WALKWAY PROTECTION

A. Crossgrip Walkway

- 1. A rolled out reinforced protection mat used to protect PVC roofing membrane from mechanical abuse. Crossgrip Walkway is 9/16 inch thick flexible PVC with a heavily textured surface. The walk way is to be secured with loops of PVC membrane welded to the field sheet.

2.07 MISCELLANEOUS FASTENERS AND ANCHORS

- A. All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1¼ inch (32 mm) and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

PART 3 EXECUTION

3.01 PRE-CONSTRUCTION CONFERENCE

- A. The Applicator, Owner's Representative/Designer and Manufacturer(s) shall attend a pre-construction conference.
- B. The meeting shall discuss all aspects of the project including but not limited to:
 - 1. Safety
 - 2. Set up
 - 3. Construction schedule
 - 4. Contract conditions
 - 5. Coordination of the work

3.02 SUBSTRATE CONDITION

- A. Applicator shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.
- B. Applicator shall verify that the work done under related sections meets the following conditions:
 - 1. Roof drains and/or scuppers have been reconditioned and/or replaced and installed properly.
 - 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
 - 3. All surfaces are smooth and free of dirt, debris and incompatible materials.
 - 4. All roof surfaces shall be free of water, ice and snow.

3.03 SUBSTRATE PREPARATION

The roof deck and construction must be structurally sound to provide support for the new roof system. The Applicator shall load materials on the rooftop in such a manner to eliminate risk of deck overload due to concentrated weight. The Owner's Representative shall ensure that the roof deck is secured to the structural framing according to local building code and in such a manner as to resist all anticipated wind loads in that location.

- A. Re-roof
 - 1. General Criteria
 - a. Only that amount of roofing and flashing which can be made weathertight with new materials during a one-day period or before the onset of inclement weather.
 - 2. Concrete Substrate:
 - a. The surface shall have a smooth and level finish and shall be free of dust, excess moisture, oil-based curing agents and loose debris. Sharp ridges and other projections above the surface shall be removed before roofing.

3.04 SUBSTRATE INSPECTION – INSULATION BOARD INSTALLATION

- A. A dry, clean and smooth substrate shall be prepared to receive the Adhered roof system.

- B. The Applicator shall inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.
- C. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.
- D. All roof surfaces shall be free of water, ice and snow.
- E. The membrane shall be applied over compatible and accepted substrates only.
- F. Insulation Board Installation
 - 1. OM Adhesive
 - a. Apply using a pace cart equipment over properly installed and prepared substrate in bands 12 inches on center. Allow to rise approximately $\frac{1}{2}$ - $\frac{3}{4}$ " inch. Lay separation boards in adhesive and walk into place to ensure full embedment. On roof slopes greater than $\frac{1}{2}$ inch in 12 inches, begin adhering separation boards at low point and work upward to avoid slippage. One person should be designated to walk in, trim/slit and apply weight to all insulation boards to ensure adequate securement. Only areas that can be made completely water tight in the same day's operation shall be coated.
 - 2. AD Adhesive:
 - a. With a utility knife, cut away the plastic plugs from the adhesive mixing head. Attach a mixing tip to the threaded mixing head. Place the cartridge in the applicator. At the beginning of the tube, some the material should be pumped out initially to make sure of a proper mix. Apply using a gravity fed applicator or by hand with a dual component caulk gun over properly installed and prepared substrates in bands of 12 inches on center. Walk insulation boards into wet adhesive to ensure full embedment.

3.05 INSTALLATION OF ROOF MEMBRANE

The surface of the insulation or substrate shall be inspected prior to installation of the roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.

- A. Water Based Adhesive:
 - 1. Over the properly installed and prepared substrate, water based adhesive shall be poured out of the pail and spread using notched $\frac{1}{4}$ inch x $\frac{1}{4}$ inch x $\frac{1}{4}$ inch (6 mm x 6 mm x 6 mm) rubber squeegees. The waterbased adhesive shall be applied at a rate according to the manufacturer's requirements. No adhesive is applied to the back of the PVC membrane. Do not allow adhesive to skin-over or surface-dry prior to installation of PVC membrane.
 - 2. The PVC roof membrane is unrolled immediately into the wet water based adhesive. Adjacent rolls overlap previous rolls by 3 inches (75 mm). This process is repeated throughout the roof area. Immediately after application into adhesive, each roll shall be pressed firmly into place with a water-filled, foam-covered lawn roller by frequent rolling in two directions. Do not allow adhesive to skin-over or surface-dry prior to installation of PVC membrane.

3. Weld PVC coverstrips at all PVC membrane seams that do not have a factory selvage edge.

Notes:

a) Water based adhesive shall not be used if temperatures below 40° F (5° C) are expected during application or subsequent drying time.

b) No adhesive shall be applied in seam areas. All membrane shall be applied in the same manner.

3.06 HOT-AIR WELDING OF SEAM OVERLAPS

A. General

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

B. Hand-Welding

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

C. Machine Welding

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

D. Quality Control of Welded Seams

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

3.07 MEMBRANE FLASHINGS

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and the manufacturer. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces. Use caution to ensure adhesive fumes are not drawn into the building.

- A. Adhesive for Membrane Flashings
 - 1. Over the properly installed and prepared flashing substrate, adhesive shall be applied according to instructions found on the Product Data Sheet. The adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
 - 2. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.
- B. Install Stop according to the Detail Drawings with approved fasteners into the structural deck at the base of parapets, walls and curbs. Stop is required by the manufacturer at the base of all tapered edge strips and at transitions, peaks, and valleys according to the manufacturer's details.
- C. The manufacturer's requirements and recommendations and the specifications shall be followed. All material submittals shall have been accepted by the manufacturer prior to installation.
- D. All flashings shall extend a minimum of 8 inches (0.2 m) above roofing level unless otherwise accepted in writing by the Owner's Representative and the Technical Department.
- E. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the membrane.
- F. All flashing membranes shall be mechanically fastened along the counter-flashed top edge with Stop at 6-8 inches (0.15-0.20 m) on center.
- G. Flashings shall be terminated according to the manufacturer's recommended details.
- H. H. All flashings that exceed 30 inches (0.75 m) in height shall receive additional securement. Consult Technical Department for securement methods.

3.08 CLAD METAL BASE FLASHINGS/EDGE METAL

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and the manufacturer. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.

- A. Clad metal flashings shall be formed and installed per the Detail Drawings.
 - 1. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 inches (100 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 inch (25 mm).
 - 2. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.
- B. Adjacent sheets of Clad shall be spaced ¼ inch (6 mm) apart. The joint shall be covered with 2 inch (50 mm) wide aluminum tape. A 4 inch minimum (100 mm) wide strip of flashing membrane shall be hot-air welded over the joint.

3.09 WALKWAY INSTALLATION

- A. Cross Grip Walkway
 - 1. Roofing membrane to receive the Cross Grip Walkway shall be clean and dry. Crossgrip Walkway is installed loose laid on top of completed PVC roof assemblies. Where design wind speeds exceed 94 mph. the walkway must be secured/welded with PVC membrane loops to newly installed PVC membrane.
 - 2. Unroll and position Crossgrip Walkway within specified areas and cut to desired length. Do not install Crossgrip Walkway directly over securement bars. Securement clips are available for butting tow ends together.

3.10 TEMPORARY CUT-OFF

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary waterstops shall be constructed to provide a 100% watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the waterstop. The waterstop shall be sealed to the deck and/or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant as described in Section 2.10. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of off site. None of these materials shall be used in the new work.
- B. If inclement weather occurs while a temporary waterstop is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

3.11 COMPLETION

- A. Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of the manufacturer shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and the manufacturer prior to demobilization.

- B. All Warranties referenced in this Specification shall have been submitted and have been accepted at time of contract award.

END OF SECTION

SECTION 07710
ROOF DRAINAGE SPECIALTIES

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:

1. Contractor shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish and install all roof drainage specialties Work.
2. The extent of the roof drainage specialties is shown.
3. The types of roof drainage specialties Work required include, but is not necessarily limited to, the following:
 - a. Exposed, surface mounted gutters and downspouts.
 - b. Welded miters, end caps and downspout elbows.
 - c. Complete selection of full-strength, polyvinylidene fluoride finishes and colors with extended life topcoat.
 - d. Miscellaneous accessories, fasteners, cleats and incidental sheet metal flashing and trim system components necessary for a complete installation.

B. Coordination:

1. Review installation procedures under other Sections and coordinate the installation of items that shall be installed with the roof specialties Work.

C. Related Sections:

1. Section 07540, Adhered PVC Thermoplastic Membrane Roofing.

1.02 REFERENCES

A. Standards referenced in this Section are listed below:

1. AAMA 621, Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.
2. FM Global, Loss Prevention Data for Roofing Contractors, 1-49 - Perimeter Flashing.
3. FS H C 494, Coating Compound, Bituminous, Solvent Type, Acid Resistant.
4. FS TT C 494, Federal Specifications, Coating Compound, Bituminous, Solvent Type, Acid Resistant.
5. NRCA, the Roofing Manual.
6. SMACNA: Architectural Sheet Metal Manual.

1.03 QUALITY ASSURANCE

A. Installer Qualifications:

1. Engage a single installer who is a recognized roof drainage specialties installer, skilled and experienced in the type of roof drainage specialties Work required, and equipped to perform workmanship in accordance with recognized standards so that there will be undivided responsibility for the performance of the Work. Submit name

and qualifications to Engineer along with at least three successfully completed Projects including names and telephone numbers of owners, architects and engineers, responsible for the project and the approximate contract price for roof specialties work.

2. The installer of the roof drainage specialties Work shall be franchised or otherwise accepted in writing by the roofing materials manufacturer for installation of fully guaranteed roofing Work in accordance with these Specifications.

B. Design Criteria:

1. Standards: Comply with applicable standards and recommendations of SMACNA, Architectural Sheet Metal Manual, for the fabrication and installation of roof specialties Work, except to the extent more stringent requirements are specified.

- C. Component Supply and Compatibility:** Provide roof specialties as a complete unit produced by a single manufacturer specializing in the production of this type of Work, including hardware, accessories, mounting and installation components.

1.04 SUBMITTALS

A. Action Submittals: Submit the following:

1. Shop Drawings:

- a. Shop Drawings showing the manner of forming, jointing and securing the metal to form roof drainage specialties Work. Show expansion joint details and water-proof connections to adjoining work and at obstructions and penetrations.
- b. Provide detailed Shop Drawings showing large scale details of sections and profiles of all roof drainage specialties to be used in the Work, with all items, including fastener locations, cleats and other miscellaneous accessories necessary to complete the Work, fully dimensioned, properly located, quantified and presented such that sequence of installation is acceptable to each roofing system and adjacent construction material installer.

2. Product Data:

- a. Copies of manufacturer's specifications, recommendations and installation instructions for roof drainage specialties applications. Include manufacturer's certification or other data substantiating that the materials comply with the requirements.

3. Samples:

- a. Each item of roof drainage specialty, demonstrating assembly of system joint components and fasteners, securely mounted to substrate simulating actual installation in the Work.
- b. Polyvinylidene fluoride manufacturer's color samples for final selection by Engineer. After initial selection of colors by Engineer from manufacturer's color charts, submit Engineer's preliminary color choices on actual samples of metal substrate for final color selections by Engineer.
- c. Samples will be reviewed by Engineer for color and texture only. Compliance with other requirements is the responsibility of Contractor.

B. Informational Submittals: Submit the following:

1. Qualifications Statements:

- a. Installer's qualifications

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery of Materials:
 - 1. Deliver, store and handle materials to preclude denting, scratching or otherwise marring the surface and finish of the roof drainage specialties material.
 - 2. Items delivered in broken, damaged, rusted, or unlabeled condition shall immediately be removed from Site and not offered again for approval by Engineer.
- B. Storage of Materials:
 - 1. Store materials in an area undercover and protected from construction traffic.
 - 2. Store materials in same package in which they were shipped, off the ground and on platforms protected from dirt and other contamination.
 - 3. Store in a manner which does not permit water to remain on roof drainage specialties materials and system components.
- C. Handling of Materials:
 - 1. Protect roof drainage specialties from dents, scratches, warps and bends.
 - 2. Remove strippable protective film, immediately preceding installation of each system component.

1.06 JOB CONDITIONS

- A. Scheduling:
 - 1. Coordinate roof drainage specialties Work with roofing, flashing, trim, and the construction of decks and other adjoining work, to provide a permanently watertight, leak proof, secure and non-corrosive installation.
 - 2. Deliver materials to the Site in sufficient quantities to ensure uninterrupted progress of the Work.
 - 3. Schedule the installation of roof drainage specialties to coincide with the installation of roofing, waterproofing, drains, piping, blocking, nailers, reglets, framing at openings and other adjoining and substrate Work.
 - 4. Proceed with and complete the Work only when materials, equipment and knowledgeable tradesmen, required for the installation of roof drainage specialties, are at the Site and are ready to follow, and integrate roof drainage specialties Work with roofing Work, in order to maintain watertight conditions.

1.07 WARRANTY

- A. Provide manufacturer's twenty-year warranty on the specified polyvinylidene fluoride based coating.
- B. Guarantee that the polyvinylidene fluoride based coating meets all criteria specified and will not spall, check, craze, peel or otherwise lose adhesion for a period of twenty years from the date of installation, to the extent that such shall create unsightly conditions or otherwise impair the intended architectural qualities of the building.
- C. In the event that the polyvinylidene fluoride based coating fails to meet the specified standards the manufacturer shall, at their own expense, replace or field paint, at the discretion of Owner, all areas affected by the failure. In the event that repainting is

selected, it shall be done at mutually agreeable intervals throughout the term of the warranty.

- D. The warranty specified shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- E. The warranty does not apply where failure is caused by accidents, or external conditions or forces beyond the control of the manufacturer.

PART 2 PRODUCTS

2.01 SYSTEM PERFORMANCE

- A. Performance Criteria:
 - 1. Comply with fabrication details recommended by SMACNA, Architectural Sheet Metal Manual; The NRCA Roofing Manual, and the requirements of the roof drainage specialties manufacturer, and as shown on approved Shop Drawings.

2.02 MATERIALS

- A. Custom Gutters and Downspouts:
 - 1. Provide aluminum sheet 6063-T6 alloy, with smooth finish; in accordance with SMACNA.
 - 2. Size, Thickness, and Profile:
 - a. Gutters: Size – 6-inch top opening x 5-inch vertical height (elevate back edge at least 1 inch above front edge), Thickness – 0.63-inch thick, Profile - Style D (SMACNA).
 - b. Downspouts: Size 2 ¾ inch x 4 ¼ inch, Thickness – 0.63-inch thick, Profile – Rectangular Corrugated with mitered elbows.
 - c. Gutter Bracket: 3/16 inch x 1 inch to match the profile of the gutter.
 - d. Downspout Hangers: Formed hanger 2 inch wide with concealed fasteners.
 - 3. Products and Manufacturers: Provide one of the following:
 - a. Custom Gutters and Downspouts by Architectural Products Company.
 - b. Custom Gutters and Downspouts by Metal-Era Incorporated.
 - c. Or equal.
 - 4. Miscellaneous Materials:
 - a. Provide the materials and types of fasteners, solder, welding rods, coatings, separators, aluminum wall penetration, sealants, and accessory items as recommended by the sheet metal manufacturer for roof drainage specialties Work, except as otherwise shown.
 - b. Cleats and Straps: Same metal as roof drainage specialties Work being anchored or supported.
 - c. Roofing Cement: Neoprene adhesive, compatible with substrate and adjoining work.
 - d. Bituminous Coating: Cold applied asphaltic coating, FS TT C 494, Type II, compounded for minimum thickness per coat of 15-mils (dry).

2.03 FABRICATION

A. General:

1. The fabrication requirements for roof drainage specialty Work apply to both shop fabricated and onsite fabricated work.
2. Manufacturer's Recommendations: Except as otherwise shown or specified, comply with the recommendations and instructions of the manufacturer of the roof specialty being fabricated.
3. Provide for thermal expansion of exposed items. Maintain a water tight seal at expansion joints. Locate expansion joints at the following maximum spacings:
 - a. Maximum 50-feet between expansion joints at gutters.
4. Fabricate Work with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves and avoidable tool marks, considering the temper and reflectivity of the metal. Provide uniform, neat seams with minimum exposure of solder, welds and sealant. Fold back the sheet metal to form a hem on the concealed side of exposed edges.
5. Support and Anchorage: Fabricate units with adequate provisions for support and anchorage, of the types required for the indicated method of installation.

- B. Downspouts: Fabricate aluminum sheet using double flat lock seams. Rivet joints where necessary for strength. Pop rivets are not acceptable.

2.04 FINISHES

- A. High-Performance Organic Finish (Three-Coat Fluoropolymer): AAMA 2605: manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with AAMA 621 and the coating and resin manufacturers' written instructions.

1. Colors: Provide the following:
 - a. Full selection of manufacturer's standard colors for final selection by Engineer.
2. Products and Manufacturers: Provide one of the following:
 - a. Kynar 500 Fluropon by the Valspar Corporation.
 - b. Kynar 500 Duranar XL by PPG Industries.
 - c. Or equal.

PART 3 EXECUTION

3.01 INSPECTION

- A. Contractor and installer shall examine the supporting structure and other elements of the substrate and conditions under which the roof drainage specialties Work is to be performed and notify Engineer, in writing, of any conditions detrimental to the proper and timely completion of the Work and performance of the gutters and downspouts. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to Engineer.

3.02 PREPARATION

- A. Wherever possible, take field measurements, prior to completion of shop fabrication and finishing of roof drainage specialties Work. Do not delay job progress. Allow for erection tolerances corresponding with specified tolerances where final dimensions cannot be established before fabrication.

3.03 INSTALLATION

- A. Comply with manufacturer's recommendations and installation instructions.
- B. Protection of Aluminum from Dissimilar Materials: Coat all aluminum surfaces in contact with dissimilar materials such as concrete, masonry, steel and other metals.
- C. Conceal fasteners and expansion provisions, wherever possible, in exposed Work, and locate so as to minimize the possibility of leakage. Cover and seal Work, as required, for a tight installation.
- D. Provide concealed cleat type anchorages wherever practical and arrange to relieve stresses in the roof drainage specialties Work which result from building movement and thermal expansion.
- E. Splice and Expansion Units: Use 0.050 inch thick splice plates.
- F. Bed flashing flanges in a bed of roofing cement or other setting compound which is compatible with adjoining work and substrate.
- G. On vertical overlaps, lap sheet metal a minimum of 3 inches.
- H. On sloping overlaps, of slopes of not less than 6 inches in 12 inches, lap unsealed overlaps a minimum of 6 inches.
- I. For embedment of metal flanges in elastic sheet flashing or stripping, extend flanges for a minimum of 4-inches embedment.
- J. Support and anchor each unit of Work in the manner as shown, but in no case in a manner which would be inadequate for thermal expansion stresses and the normal loading of water, wind and similar loadings.
- K. Install units with lines and corners true and accurate in alignment and location.
- L. Gutters: Install level and provide an expansion joint at 50-feet maximum on center. Install brackets 3'-0" on center. Install spacers 3'-0" alternately with the brackets.
- M. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches on center.

3.04 FIELD QUALITY CONTROL

- A. Polyvinylidene Fluoride Based Coatings: Determine conformity of sheet metal flashing and trim Work requiring painted finish to these Specifications as follows:

1. The manufacturer of the roofing drainage specialties Work shall set aside and label samples of each component of the sheet metal flashing and trim Work from each production lot for the Project. Protect samples from weather.
2. Make samples of sheet metal flashing and trim Work available at all times, for comparison with installed sheet metal flashing and trim Work as requested by Owner, for the full time of the warranty.
3. Make color comparison measurements with a Hunter Tristimulus Color Difference Meter employing methods of computation in use at the National Bureau of Standards.

3.05 CLEANING AND PROTECTION

- A. Protect the roof drainage specialties from all damage until Final Completion.
- B. Roof drainage specialties damaged before Final Completion shall be replaced with new material as specified herein, at no additional cost to Owner.
- C. Clean exposed surfaces of every substance which is visible or might cause corrosion of the metal or deterioration of the finish.

END OF SECTION



SCOPE OF WORK

Asbestos Roofing and Mastic Removal
Truckee Meadows Water Reclamation Facility (TMWRF)
Reno, NV

- A. GENERAL:** This project involves asbestos roofing and roofing mastic removal to be conducted by a Nevada licensed Abatement Contractor of the TMWRF Lab Building Roof. The building is a two-story structure containing laboratory rooms and offices. Converse Consultants will provide the Project Monitor for the project. Since this project is located on the exterior of the building (west side of the roof) and the material to be removed is non-friable a regulated area will be established around the perimeter of the project prior to the removal of any ACM but no containment will be constructed. The Project Monitor will inspect the regulated area to ensure compliance with this Scope of Work (SOW). The Project Monitor will conduct in-progress inspections and perimeter air monitoring daily. Once the Asbestos Abatement Contractor (Contractor) has completed work and all detail cleaning, the Project Monitor will conduct the final visual inspection. No final air clearance sampling will be conducted. The contractor performing ACM removal shall be currently licensed by the State of Nevada as an Asbestos Abatement Contractor. The Contractor will correct any deficiencies noted by the Project Monitor as work progresses. This SOW covers only the removal of asbestos roofing materials and roofing mastics located on the west side of the laboratory building roof.
- B. REGULATORY COMPLIANCE:** The Contractor is required to comply with NAC 618.850 to 618.986 – Abatement of Asbestos, NRS 618.750 to 618.850 – Control of Asbestos and this SOW, as well as applicable Washoe County Health District, Air Quality Management Division and US Federal Asbestos Regulations. These federal regulations include, but are not limited to, 40 CFR 61 - Asbestos NESHAP and 29 CFR 1926.1101 - Asbestos Standard for the Construction Industry. The Contractor is to make the required notifications to NV OSHA and The Washoe County Health District. Please note there is a mandatory 10-day wait period once the notifications have been submitted.
- C. ITEMS OF WORK:** Remove and dispose of the following approximate quantities of asbestos and/or asbestos containing materials:
- Asbestos Roofing Materials and Roofing Mastics. **Approximately 2,600 SF**
- 1 *Regulated Area:* All asbestos work shall be conducted within a regulated area. Establish a regulated area on the roof 20' east of roofing removal area using asbestos caution tape. The north, south and west roof edges will serve as the



remaining boundaries for the regulated area on the roof. The regulated area is to extend to the parking lot “storage and staging area” on the north side of the building to accommodate the decon and waste bin. Use asbestos caution tape to establish a perimeter 20” in all directions around the decon and waste bin. **Access to the roof will be by exterior access only.** The interior of the building is not to be accessed by asbestos abatement workers. Post a sufficient number of signs at the asbestos abatement area and at every work area entrance, so the TMWRF employees and contractor personnel have an opportunity to take protective measures before exposing themselves to asbestos. Only authorized, properly protected personal are to enter the regulated area.

- 2 *Isolate Roof Level Air Intake Sources:* Isolate roof level heating and ventilation air intake sources within the regulated area and others that will be affected; or arrange for shut-down of the affected ventilation system during removal operations. Acceptable isolation techniques include the following:
 - a. Installation of HEPA filters over the air intakes
 - b. Erection of horizontal or vertical extensions that relocate the opening of the intake outside or above the regulated area
 - c. Covering the intake with plastic sheeting or another appropriate barrier

- 3 *Abatement Activities:* Licensed workers wearing personal protective equipment (PPE) including Tyvek protective suits and respirators with P-100 asbestos filters will enter the regulated area by exterior access and begin the gross abatement. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the material does not remain substantially intact, comply with NV asbestos regulations for friable asbestos removal. Remove the roofing material in an intact state. Use wet methods to remove materials that are not intact, or that are rendered not intact during removal, except where wet methods will create a safety hazard or are otherwise not feasible. Continuously apply a water mist to the blade of power cutting tools, unless a competent person determines that misting will cause a fall hazard. When removing felts, collect the dust generated by power roof cutters with a HEPA-filtered dust collector; or immediately vacuum using a HEPA-filtered vacuum along the cut line. For smooth surfaces only, gently sweep wet dust generated from cutting operations, and carefully and completely wipe up the still-wet dust and debris. Do not drop or throw to the ground ACM roofing material that has been removed. As soon as practicable, but not later than the end of the work shift, lower debris to the ground in a dust-tight chute, crane or hoist. While on the roof, keep non-intact ACM wet; or seal in impermeable waste bags or wrap in one layer of poly sheeting. Intact ACM is not required to be kept wet, bagged or wrapped while on the roof. Upon being lowered to the ground, transfer



all unwrapped material to a poly lined closed receptacle in a manner that precludes the dispersion of dust.

- 4 *Decontamination Unit:* A remote three-stage personnel decontamination unit will be set up within the storage/staging area. The decontamination unit is to consist of an equipment room, shower area, and clean room which will be used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.
- 5 *Air Monitoring:* Personal air monitoring will be the responsibility of the Contractor. Perimeter air monitoring will be conducted by the Project Monitor. Up to four area air samples are to be collected outside of the regulated area. Personal and area air monitoring will be conducted during all activities requiring respiratory protection. Area air monitoring results will be evaluated before the start of each shift.
- 6 *Visual Inspection:* A final visual inspection will be conducted by Converse while the Contractor is on site to correct any deficiencies, prior to lock down encapsulation. Three-dimensional ACM residue observed during the final inspection will be cause for additional cleaning by the contractor and a subsequent re-inspection.
- 7 *Lock Down Encapsulant:* After the visual inspection is completed the Contractor is to encapsulate the area above the ceiling with a lock-down encapsulant/sealant such as Fiberlock Fiberset PM or comparable substitute.
- 8 *Work Area Acceptance:* A Work Area Acceptance Inspection will be conducted by the Project Monitor following teardown of the regulated area and removal of the Contractor's equipment from the work area. The Contractor will correct any deficiencies prior to final acceptance of the area by TMWRF.
- 9 *Damage to Building or Contents:* Protect adjacent areas, materials and surfaces from damage due to roofing removal operations, including but not necessarily limited to the following: water damage, dirt, dust & debris, abrasion, cuts and scratches, holes from fasteners for temporary barriers. The Contractor will be required to repair any damage to the building or its components caused by their workers other than materials/items being removed and disposed.

D. CONDITIONS OF WORK:

1. The building is occupied by TMWRF personal on a continuous basis. Contractor personnel will endeavor to minimize the disruption that this project will impose upon TMWRF employees.
3. The Contractor's work schedule will be coordinated with the Project Monitor and TMWRF. The abatement is schedule start date is to be determined.



4. Electrical power, water, and a point for decon shower effluent will be provided by TMWRF from nearby available sources. The Contractor will need to provide hoses to connect the decon shower to the building system.
5. Statute-required personal air monitoring will be provided by the Contractor.
6. The Contractor will provide TMWRF with one legible copy and one pdf copy of all related project documents, including, but not limited to, regulatory agency notifications and inspections, Contractor's daily logs and waste disposal manifest(s) signed by the receiving landfill. The Project Monitor will review the documents to ensure completeness. All documents are to be submitted to TMWRF within thirty days following demobilization.

E. SURVEY DOCUMENTS: The quantities of materials in the areas to be removed have been estimated by using information gained from an on-site inspection and are believed to be reasonably accurate. The Contractor should accept these quantities or verify them to their satisfaction in preparing his quote.

F. ABATEMENT CONTRACTOR TO PROVIDE: The Contractor shall provide all labor, equipment, supplies, materials, waste transportation, disposal, regulatory notifications, reports, personal air monitoring, etc., for the stated price for the work described herein. The Contractor shall have determined the difficulties in prosecuting the work by a site visit and shall have taken these factors into consideration in the preparation of his quote or he shall accept the quantities and difficulties as noted in this SOW. The Contractor will be responsible for safeguarding his equipment, supplies and any other items he has brought to the site. The Contractor is to provide the items/services described in Paragraph C, Items of Work, and Paragraph D, Conditions of Work. The following Pre-submittals must be provided to the Project Monitor for review before any work may commence:

- NV OSHA Project Notification and Washoe County Health District AQMD EPA NESHAP
- Worker documentation including: training certs, NV OSHA asbestos certifications, pulmonary evaluation, and respirator fit test
- SDS for all chemicals to be used on site
- Name and cell phone number of onsite supervisor
- Abatement set up plan including provisions for shower water daily shut off to prevent flooding

The Contractor will be responsible for security and safety of his work areas. Close coordination between the Contractor and TMWRF personal must be maintained to ensure that the work areas are clearly demarcated to prevent entry by unauthorized personnel. Converse will provide the initial visual inspection at no cost to the Contractor. The Contractor shall cover the cost of repeat visual inspections required to clear the work area. The Contractor shall provide fire safety including an emergency evacuation route, procedures for evacuating the work areas. The Contractor is



responsible to coordinate parking and location of the waste trailer/roll off with TMWRF. The Contractor is to provide their own Porta-Potty. TMWRF restrooms are not to be used by Contractor personal.

G. TMWRF TO PROVIDE: TMWRF will provide/accomplish the following in a timely manner in support of the project:

1. Access to the work areas.
2. Utilities required for the work from available outlets.
3. Help coordinate shut down of the building HVAC system and any Electrical as needed to accomplish the abatement project.

H. PERFORMANCE PERIOD: Performance Period is five (5) working days.

I. WASTE DISPOSAL: Disposal of all contaminated waste shall be the responsibility of the Contractor. *Disposal of Waste:* Dispose of material in an asbestos accepting Type II landfill. Notify the landfill that the roofing material contains asbestos and provide waste shipment manifests for TMWRF with 30 days of disposal.



Asbestos Abatement Specification For Roofing Removal

TMWRF-Laboratory Building
8500 Clean Water Way
Reno, NV 89502

CONVERSE Project No. 18-23119-01
April 17, 2018

Prepared For:

Mr. Paul Shapiro
EHS Coordinator
8500 Clean Water Way,
Reno, NV 89502

Prepared By:

CONVERSE CONSULTANTS
1020 S. Rock Boulevard, Ste A
Reno, NV, 89502

April 17, 2018

Mr. Paul Shapiro
City of Sparks
EHS Coordinator
Reno, NV 89502

Subject: ASBESTOS ABATEMENT SPECIFICATION
TMWRF – Lab Building Roof Abatement
CONVERSE Project No. 18-23-119-01

Dear Mr. Shapiro:

CONVERSE CONSULTANTS (CONVERSE) is pleased to submit the attached *Asbestos Abatement/Removal Specification* for the above referenced property (Property).

We appreciate the opportunity to be of service. Should you have any questions or comments regarding this *Specification*, please contact Philip Childers at (775) 284-9752.

CONVERSE CONSULTANTS



Philip S. Childers
Senior Environmental Manager
Converse Consultants
Certified Asbestos Consultant, #IMP 1692
Certified Environmental Manager #1952



Dean R. Stanphill, P.E.
Senior Manager
ES Engineering Services, LLC

4-17-18

Dist.: 1/Addressee (PDF)

**SECTION 02 82 13.21
ASBESTOS ROOFING ABATEMENT**

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SECTION

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ASBESTOS ROOFING ABATEMENT SPECIFICATIONS

1. These specifications provide general guidance to personnel given the task of designing and executing a Class II roofing abatement project. Each abatement is a unique situation and therefore must be tailored for that project. This specification incorporates current regulatory requirements and current best abatement practices, procedures and technology.
2. These specifications are to be used in conjunction with Contractor selection criteria; Asbestos Abatement Scope of Work, special instructions package; and general construction provisions.
3. A NESHAP survey of the roofing material to be disturbed during this project has been conducted and may be requested as part of the project documents if requested.

PART 1 - GENERAL

1.1 SUMMARY OF THE WORK

1.1.1 CONTRACT DOCUMENTS AND RELATED REQUIREMENTS

Drawings, general provisions of the contract, including general and supplementary conditions and other Division 01 specifications, shall apply to the work of this section. The contract documents show the work to be done under the contract and related requirements and conditions impacting the project. Related requirements and conditions include applicable codes and regulations, notices and permits, existing site conditions and restrictions on use of the site, requirements for partial owner occupancy during the work, coordination with other work and the phasing of the work. In the event the Asbestos Abatement Contractor discovers a conflict in the contract documents and/or requirements or codes, the conflict must be brought to the immediate attention of the Contracting Officer for resolution. Whenever there is a conflict or overlap in the requirements, the most stringent shall apply. Any actions taken by the Contractor without obtaining guidance from the Contracting Officer shall become the sole risk and responsibility of the Asbestos Abatement Contractor. All costs incurred due to such action are also the responsibility of the Asbestos Abatement Contractor.

1.1.2 EXTENT OF WORK

- A. Below is a brief description of the estimated quantities of asbestos roofing materials to be abated. These quantities are for informational purposes only and are based on the best information available at the time of the specification preparation. The Contractor shall satisfy himself as the actual quantities to be

abated. Nothing in this section may be interpreted as limiting the extent of work otherwise required by this contract and related documents.

- B. Removal, clean-up and disposal of ACM roofing in an appropriate regulated area in the following approximate quantities;

2,600 square feet of roofing material and roofing mastic

1.1.3 RELATED WORK

- A. Section 07 84 00, FIRESTOPPING.
- B. Section 02 41 00, DEMOLITION.
- C. Division 09, FINISHES.

1.1.4 TASKS

The work tasks are summarized briefly as follows:

- A. Pre-abatement activities including pre-abatement meeting(s), inspection(s), notifications, permits, submittal approvals, work-site preparations, emergency procedures arrangements, and standard operating procedures for Class II asbestos abatement work.
- B. Abatement activities including removal, clean-up and disposal of ACM waste, recordkeeping, security, monitoring, and inspections.
- C. Cleaning and decontamination activities including final visual inspection and certification of decontamination.

1.1.5 ABATEMENT CONTRACTOR USE OF PREMISES

- A. The Contractor and Contractor's personnel shall cooperate fully with the TMWRF representative/consultant to facilitate efficient use of buildings and areas within buildings. The Contractor shall perform the work in accordance with the TMWRF specifications, drawings, phasing plan and in compliance with any/all applicable Federal, State and Local regulations and requirements.
- B. The Contractor shall use the existing facilities in the building strictly within the limits indicated in contract documents as well as the approved TMWRF Design and Construction Procedure. TMWRF Design and Construction Procedure drawings of partially occupied buildings will show the limits of regulated areas; the placement of decontamination facilities; the temporary location of bagged waste ACM; the path of transport to outside the building; and the temporary waste storage area for each building/regulated area. Any variation from the arrangements shown on drawings shall be secured in writing from the TMWRF representative through the pre-abatement plan of action. The following limitations of use shall apply to existing facilities shown on drawings:

1.2 VARIATIONS IN QUANTITY

The quantities and locations of ACM as indicated on the drawings and the extent of work included in this section are estimates which are limited by the physical constraints imposed by occupancy of the buildings. Accordingly, minor variations

(+/- 5%) in quantities of ACM within the regulated area are considered as having no impact on contract price and time requirements of this contract. Where additional work is required beyond the above variation, the Contractor shall provide unit prices for additional work that is newly discovered materials and those prices will be used for additional work under the contract.

1.3 STOP ASBESTOS REMOVAL

If the Contracting Officer; their field representative; (the facility Safety Officer/Manager or their designee, or the TMWRF Professional Industrial Hygienist/Certified Industrial Hygienist (PIH/CIH) presents a verbal **Stop Asbestos Removal Order**, the Contractor/Personnel shall immediately stop all asbestos removal and maintain in an adequately wet state any exposed ACM. If a verbal Stop Asbestos Removal Order is issued, TMWRF or the TMWRF representative shall follow-up with a written order to the Contractor as soon as practicable. The Contractor shall not resume any asbestos removal activity until authorized to do so in writing by the TMWRF Contracting Officer. A stop asbestos removal order may be issued at any time the TMWRF Contracting Officer determines abatement conditions/activities are not within TMWRF specification, regulatory requirements or that an imminent hazard exists to human health or the environment. Work stoppage will continue until conditions have been corrected to the satisfaction of the TMWRF. Standby time and costs for corrective actions will be borne by the Contractor, including the PIH/CIH time. The occurrence of any of the following events shall be reported immediately by the Contractor's competent person to the TMWRF Contracting Office or field representative using the most expeditious means (e.g., verbal or telephonic), followed up with written notification to the Contracting Officer as soon as it is practical. The Contractor shall immediately stop asbestos removal/disturbance activities and initiate fiber reduction activities:

- A. Airborne PCM analysis results equal to or greater than 0.01 f/cc outside a regulated area or >0.05 f/cc inside a regulated area;
- D. serious injury/death at the site ;
- E. fire/safety emergency at the site ;
- F. respiratory protection system failure;
- G. power failure or loss of wetting agent; or
- H. any visible emissions observed outside the regulated area.

1.4 DEFINITIONS

1.4.1 GENERAL

Definitions and explanations here are neither complete nor exclusive of all terms used in the contract documents, but are general for the work to the extent they are not stated more explicitly in another element of the contract documents. Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated therein.

1.4.2 GLOSSARY

Abatement - Procedures to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosure, demolition, and renovation activities related to asbestos containing materials (ACM).

Aerosol - Solid or liquid particulate suspended in air.

Adequately wet - Sufficiently mixed or penetrated with liquid to prevent the release of particulates. If visible emissions are observed coming from the ACM, then that material has not been adequately wetted.

Aggressive method - Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact ACM.

Aggressive sampling - EPA AHERA defined clearance sampling method using air moving equipment such as fans and leaf blowers to aggressively disturb and maintain in the air residual fibers after abatement.

AHERA - Asbestos Hazard Emergency Response Act. Asbestos regulations for schools issued in 1987.

Aircell - Pipe or duct insulation made of corrugated cardboard which contains asbestos.

Air monitoring - The process of measuring the fiber content of a known volume of air collected over a specified period of time. The NIOSH 7400 Method, Issue 2 is used to determine the fiber levels in air. For personal samples and clearance air testing using Phase Contrast Microscopy (PCM) analysis. NIOSH Method 7402 can be used when it is necessary to confirm fibers counted by PCM as being asbestos. The AHERA TEM analysis may be used for background, area samples and clearance samples when required by this specification, or at the discretion of the PIH/CIH as appropriate.

Air sample filter - The filter used to collect fibers which are then counted. The filter is made of mixed cellulose ester membrane for PCM (Phase Contrast Microscopy) and polycarbonate for TEM (Transmission Electron Microscopy)

Amended water - Water to which a surfactant (wetting agent) has been added to increase the penetrating ability of the liquid.

Asbestos - Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated or altered. Asbestos also includes PACM, as defined below.

Asbestos Hazard Abatement Plan (AHAP) - Asbestos work procedures required to be submitted by the contractor before work begins.

Asbestos-containing material (ACM) - Any material containing more than one percent of asbestos.

Asbestos contaminated elements (ACE) - Building elements such as ceilings, walls, lights, or ductwork that are contaminated with asbestos.

Asbestos-contaminated soil (ACS) – Soil found in the work area or in adjacent areas such as crawlspaces or pipe tunnels which is contaminated with asbestos-containing material debris and cannot be easily separated from the material.

Asbestos-containing waste (ACW) material - Asbestos-containing material or asbestos contaminated objects requiring disposal.

Asbestos Project Monitor – Some states require that any person conducting asbestos abatement clearance inspections and clearance air sampling be licensed as an asbestos project monitor.

Asbestos waste decontamination facility - A system consisting of drum/bag washing facilities and a temporary storage area for cleaned containers of asbestos waste. Used as the exit for waste and equipment leaving the regulated area. In an emergency, it may be used to evacuate personnel.

Authorized person - Any person authorized by the TMWRF, the Contractor, or government agency and required by work duties to be present in regulated areas.

Authorized visitor - Any person approved by the TMWRF; the contractor; or any government agency representative having jurisdiction over the regulated area (e.g., OSHA, Federal and State EPA0..

Barrier - Any surface that isolates the regulated area and inhibits fiber migration from the regulated area.

Containment Barrier - An airtight barrier consisting of walls, floors, and/or ceilings of sealed plastic sheeting which surrounds and seals the outer perimeter of the regulated area.

Critical Barrier - The barrier responsible for isolating the regulated area from adjacent spaces, typically constructed of plastic sheeting secured in place at openings such as doors, windows, or any other opening into the regulated area.

Primary Barrier – Plastic barriers placed over critical barriers and exposed directly to abatement work.

Secondary Barrier - Any additional plastic barriers used to isolate and provide protection from debris during abatement work.

Breathing zone - The hemisphere forward of the shoulders with a radius of about 150 - 225 mm (6 - 9 inches) from the worker's nose.

Bridging encapsulant - An encapsulant that forms a layer on the surface of the ACM.

Building/facility owner - The legal entity, including a lessee, which exercises control over management and recordkeeping functions relating to a building and/or facility in which asbestos activities take place.

Bulk testing - The collection and analysis of suspect asbestos containing materials.

Certified Industrial Hygienist (CIH) - A person certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.

Class I asbestos work - Activities involving the removal of Thermal System Insulation (TSI) and surfacing ACM and Presumed Asbestos Containing Material (PACM).

Class II asbestos work - Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.

Clean room/Changing room - An uncontaminated room having facilities for the storage of employee's street clothing and uncontaminated materials and equipment.

Clearance sample - The final air sample taken after all asbestos work has been done and visually inspected. Performed by the TMWRF professional industrial hygiene consultant/Certified Industrial Hygienist (PIH/CIH).

Closely resemble - The major workplace conditions which have contributed to the levels of historic asbestos exposure, are no more protective than conditions of the current workplace.

Competent person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor.

Contractor's Professional Industrial Hygienist (CPIH/CIH) - The asbestos abatement contractor's industrial hygienist. The industrial hygienist must meet the qualification requirements of a PIH and may be a certified industrial hygienist (CIH).

Count - Refers to the fiber count or the average number of fibers greater than five microns in length with a length-to-width (aspect) ratio of at least 3 to 1, per cubic centimeter of air.

Crawlspace – An area which can be found either in or adjacent to the work area. This area has limited access and egress and may contain asbestos materials and/or asbestos contaminated soil.

Decontamination area/unit - An enclosed area adjacent to and connected to the regulated area and consisting of an equipment room, shower room, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

Demolition - The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

TMWRF Total – means a building or substantial part of the building is completely removed, torn or knocked down, bulldozed, flattened, or razed, including removal of building debris.

Disposal bag - Typically 6 mil thick sift-proof, dustproof, leak-tight container used to package and transport asbestos waste from regulated areas to the approved landfill. Each bag/container must be labeled/marked in accordance with EPA, OSHA and DOT requirements.

Disturbance - Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or disposal bag which shall not exceed 60 inches in length or width.

Drum - A rigid, impermeable container made of cardboard fiber, plastic, or metal which can be sealed in order to be sift-proof, dustproof, and leak-tight.

Employee exposure - The exposure to airborne asbestos that would occur if the employee were not wearing respiratory protection equipment.

Encapsulant - A material that surrounds or embeds asbestos fibers in an adhesive matrix and prevents the release of fibers.

Encapsulation - Treating ACM with an encapsulant.

Enclosure - The construction of an air tight, impermeable, permanent barrier around ACM to control the release of asbestos fibers from the material and also eliminate access to the material.

Equipment room - A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

Fiber - A particulate form of asbestos, 5 microns or longer, with a length to width (aspect) ratio of at least 3 to 1.

Fibers per cubic centimeter (f/cc) - Abbreviation for fibers per cubic centimeter, used to describe the level of asbestos fibers in air.

Filter - Media used in respirators, vacuums, or other machines to remove particulate from air.

Firestopping - Material used to close the open parts of a structure in order to prevent a fire from spreading.

Friable asbestos containing material - Any material containing more than one (1) percent or asbestos as determined using the method specified in appendix A, Subpart F, 40 CFR 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Glovebag - Not more than a 60 x 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which materials and tools may be handled.

High efficiency particulate air (HEPA) filter - An ASHRAE MERV 17 filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

HEPA vacuum - Vacuum collection equipment equipped with a HEPA filter system capable of collecting and retaining asbestos fibers.

Homogeneous area - An area of surfacing, thermal system insulation or miscellaneous ACM that is uniform in color, texture and date of application.

HVAC - Heating, Ventilation and Air Conditioning

Industrial hygienist (IH) - A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards. Meets definition requirements of the American Industrial Hygiene Association (AIHA).

Industrial hygienist technician (IH Technician) - A person working under the direction of an IH or CIH who has special training, experience, certifications and licenses required for the industrial hygiene work assigned. Some states require that an industrial hygienist technician conducting asbestos abatement clearance inspection and clearance air sampling be licensed as an asbestos project monitor.

Intact - The ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Lockdown - Applying encapsulant, after a final visual inspection, on all abated surfaces at the conclusion of ACM removal prior to removal of critical barriers.

National Emission Standards for Hazardous Air Pollutants (NESHAP) - EPA's rule to control emissions of asbestos to the environment (40 CFR Part 61, Subpart M).

Negative initial exposure assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101 (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PEL's.

Negative pressure - Air pressure which is lower than the surrounding area, created by exhausting air from a sealed regulated area through HEPA equipped filtration units. OSHA requires maintaining -0.02" water column gauge inside the negative pressure enclosure.

Negative pressure respirator - A respirator in which the air pressure inside the facepiece is negative during inhalation relative to the air pressure outside the respirator facepiece.

Non-friable ACM - Material that contains more than 1 percent asbestos but cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Organic vapor cartridge - The type of cartridge used on air purifying respirators to remove organic vapor hazardous air contaminants.

Outside air - The air outside buildings and structures, including, but not limited to, the air under a bridge or in an open ferry dock.

Owner/operator - Any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

Penetrating encapsulant - Encapsulant that is absorbed into the ACM matrix without leaving a surface layer.

Personal protective equipment (PPE) – equipment designed to protect user from injury and/or specific job hazard. Such equipment may include protective clothing, hard hats, safety glasses, and respirators.

Personal sampling/monitoring - Representative air samples obtained in the breathing zone for one or workers within the regulated area using a filter cassette and a calibrated air sampling pump to determine asbestos exposure.

Permissible exposure limit (PEL) - The level of exposure OSHA allows for an 8 hour time weighted average. For asbestos fibers, the eight (8) hour time weighted average PEL is 0.1 fibers per cubic centimeter (0.1 f/cc) of air and the 30-minute Excursion Limit is 1.0 fibers per cubic centimeter (1 f/cc).

Pipe tunnel – An area, typically located adjacent to mechanical spaces or boiler rooms in which the pipes servicing the heating system in the building are routed to allow the pipes to access heating elements. These areas may contain asbestos pipe insulation, asbestos fittings, or asbestos-contaminated soil.

Polarized light microscopy (PLM) - Light microscopy using dispersion staining techniques and refractive indices to identify and quantify the type(s) of asbestos present in a bulk sample.

Polyethylene sheeting - Strong plastic barrier material 4 to 6 mils thick, semi-transparent, flame retardant per NFPA 241.

Positive/negative fit check - A method of verifying the seal of a facepiece respirator by temporarily occluding the filters and breathing in (inhaling) and then temporarily occluding the exhalation valve and breathing out (exhaling) while checking for inward or outward leakage of the respirator respectively.

Presumed ACM (PACM) - Thermal system insulation, surfacing, and flooring material installed in buildings prior to 1981. If the building owner has actual knowledge, or should have known through the exercise of due diligence that other materials are ACM, they too must be treated as PACM. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 (b).

Professional IH - An IH who meets the definition requirements of AIHA; meets the definition requirements of OSHA as a "Competent Person" at 29 CFR 1926.1101 (b); has completed two specialized EPA approved courses on management and supervision of asbestos abatement projects; has formal training in respiratory protection and waste disposal; and has a minimum of four projects of similar complexity with this project of which at least three projects serving as the supervisory IH. The PIH may be either the TMWRF PIH (PIH) or Contractor's PIH (CPIH/CIH).

Project designer - A person who has successfully completed the training requirements for an asbestos abatement project designer as required by 40 CFR 763 Appendix C, Part I; (B)(5).

Assigned Protection factor - A value assigned by OSHA/NIOSH to indicate the expected protection provided by each respirator class, when the respirator is properly selected and worn correctly. The number indicates the reduction of exposure level from outside to inside the respirator facepiece.

Qualitative fit test (QLFT) - A fit test using a challenge material that can be sensed by the wearer if leakage in the respirator occurs.

Quantitative fit test (QNFT) - A fit test using a challenge material which is quantified outside and inside the respirator thus allowing the determination of the actual fit factor.

Regulated area - An area established by the employer to demarcate where Class I, II, III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work may accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the PEL.

Regulated ACM (RACM) - Friable ACM; Category I non-friable ACM that has become friable; Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or; Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of the demolition or renovation operation.

Removal - All operations where ACM, PACM and/or RACM is taken out or stripped from structures or substrates, including demolition operations.

Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of asbestos from a facility component which does not involve demolition activity.

Repair - Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.

Shower room - The portion of the PDF where personnel shower before leaving the regulated area.

Supplied air respirator (SAR) - A respiratory protection system that supplies minimum Grade D respirable air per ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989.

Surfacing ACM - A material containing more than 1 percent asbestos that is sprayed, troweled on or otherwise applied to surfaces for acoustical, fireproofing and other purposes.

Surfactant - A chemical added to water to decrease water's surface tension thus making it more penetrating into ACM.

Thermal system ACM - A material containing more than 1 percent asbestos applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

Transmission electron microscopy (TEM) - A microscopy method that can identify and count asbestos fibers.

TMWRF Professional Industrial Hygienist (PIH/CIH) – Professional Industrial Hygienist must meet the qualifications of a PIH, and may be a Certified Industrial Hygienist (CIH).

TMWRF Representative - The TMWRF official responsible for on-going project work.

Visible emissions - Any emissions, which are visually detectable without the aid of instruments, coming from ACM/PACM/RACM/ACS or ACM waste material.

Waste/Equipment decontamination facility (W/EDF) – The area in which equipment is decontaminated before removal from the regulated area.

Waste generator - Any owner or operator whose act or process produces asbestos-containing waste material.

Waste shipment record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

Wet cleaning - The process of thoroughly eliminating, by wet methods, any asbestos contamination from surfaces or objects.

1.4.3 REFERENCED STANDARDS ORGANIZATIONS

The following acronyms or abbreviations as referenced in contract/ specification documents are defined to mean the associated names. Names and addresses may be subject to change.

- A. AIHA American Industrial Hygiene Association
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031
703-849-8888

- B. ANSI American National Standards Institute
1430 Broadway
New York, NY 10018
212-354-3300

- C. ASTM American Society for Testing and Materials
1916 Race St.
Philadelphia, PA 19103
215-299-5400

- D. CFR Code of Federal Regulations
Government Printing Office
Washington, DC 20420

- E. CS Commercial Standard of the National Institute of Standards and Technology (NIST)
U. S. Department of Commerce
Government Printing Office
Washington, DC 20420

- F. EPA Environmental Protection Agency Region 9
75 Hawthorne St,
San Francisco, CA 94105
415-947-8000

- G. NIST National Institute for Standards and Technology
U. S. Department of Commerce
Gaithersburg, MD 20234
301-921-1000

- H. Nevada Department of Business and Industry
Division of industrial Relations
Occupation Safety and Health Administration
4600 Kietzke Lane
Building F, Suite 153
Reno, NV 89502
Ph: 775-688-3700

- N. NIOSH National Institutes for Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, OH 45226
513-533-8236

- O. OSHA Occupational Safety and Health Administration
U.S. Department of Labor

Government Printing Office
Washington, DC 20402

P. Truckee Meadows Water Reclamation Facility (TMWRF)
8500 Clean Water Way,
Reno, NV 89502

Q. Washoe County Health District
Air Quality Management Division
1001 East Ninth Street #B171,
Reno, NV 89512

1.5 APPLICABLE CODES AND REGULATIONS

1.5.1 GENERAL APPLICABILITY OF CODES, REGULATIONS, AND STANDARDS

- A. All work under this contract shall be done in strict accordance with all applicable Federal, State, and local regulations, standards and codes governing asbestos abatement, and any other trade work done in conjunction with the abatement. All applicable codes, regulations and standards are adopted into this specification and will have the same force and effect as this specification.
- B. The most recent edition of any relevant regulation, standard, document or code shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirement(s) shall be utilized.
- C. Copies of all standards, regulations, codes and other applicable documents, including this specification and those listed in Section 1.5 shall be available at the worksite in the clean change area of the worker decontamination system.

1.5.2 CONTRACTOR RESPONSIBILITY

The Asbestos Abatement Contractor (Contractor) shall assume full responsibility and liability for compliance with all applicable Federal, State and Local regulations related to any and all aspects of the asbestos abatement project. The Contractor is responsible for providing and maintaining training, accreditations, medical exams, medical records, personal protective equipment (PPE) including respiratory protection including respirator fit testing, as required by applicable Federal, State and Local regulations. The Contractor shall hold the TMWRF and PIH/CIH consultants harmless for any Contractor's failure to comply with any applicable work, packaging, transporting, disposal, safety, health, or environmental requirement on the part of himself, his employees, or his subcontractors. The Contractor will incur all costs of the CPIH/CIH, including all sampling/analytical costs to assure compliance with OSHA/EPA/State requirements related to failure to comply with the regulations applicable to the work

1.5.3 FEDERAL REQUIREMENTS

Federal requirements which govern some aspect of asbestos abatement include, but are not limited to, the following regulations.

- A. Occupational Safety and Health Administration (**OSHA**)

1. Title 29 CFR 1926.1101 - Construction Standard for Asbestos
 2. Title 29 CFR 1910.132 - Personal Protective Equipment
 3. Title 29 CFR 1910.134 - Respiratory Protection
 4. Title 29 CFR 1926 - Construction Industry Standards
 5. Title 29 CFR 1910.20 - Access to Employee Exposure and Medical Records
 6. Title 29 CFR 1910.1200 - Hazard Communication
 7. Title 29 CFR 1910.151 - Medical and First Aid
- B. Environmental Protection Agency (EPA)
1. 40 CFR 61 Subpart A and M (Revised Subpart B) - National Emission Standard for Hazardous Air Pollutants - Asbestos.
 2. 40 CFR 763.80 - Asbestos Hazard Emergency Response Act (AHERA)
- C. Department of Transportation (DOT)
- Title 49 CFR 100 - 185 – Transportation

1.5.4 STATE REQUIREMENTS

State requirements that apply to the asbestos abatement work, disposal, clearance, etc., include, but are not limited to, the following: NAC 618.850 to 618.986 – Abatement of Asbestos, NRS 618.750 to 618.850 – Control of Asbestos. Complete Nevada OSHA Asbestos Abatement Project Notification Form and pay required fees.

1.5.5 LOCAL REQUIREMENTS

If local requirements are more stringent than federal or state standards, the local standards are to be followed. Follow Washoe County District Board of Health Regulations Governing Air Quality Management Sec. 030.105 Subpart M. File applicable NESHAP notification and pay required fees for asbestos removal.

1.5.6 STANDARDS

- A. Standards which govern asbestos abatement activities include, but are not limited to, the following:
1. American National Standards Institute (ANSI) Z9.2-79 - Fundamentals Governing the Design and Operation of Local Exhaust Systems and ANSI Z88.2 - Practices for Respiratory Protection.
 2. Underwriters Laboratories (UL)586-90 - UL Standard for Safety of HEPA filter Units, 7th Edition.
- B. Standards which govern encapsulation work include, but are not limited to, the following:
1. American Society for Testing and Materials (ASTM)
- C. Standards which govern the fire and safety concerns in abatement work include, but are not limited to, the following:
1. National Fire Protection Association (NFPA) 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.
 2. NFPA 701 - Standard Methods for Fire Tests for Flame Resistant Textiles and Film.
 3. NFPA 101 - Life Safety Code

1.5.7 EPA GUIDANCE DOCUMENTS

- A. EPA guidance documents which discuss asbestos abatement work activities are listed below. These documents are made part of this section by reference. EPA publications can be ordered from (800) 424-9065.
- B. Guidance for Controlling ACM in Buildings (Purple Book) EPA 560/5-85-024
- C. Asbestos Waste Management Guidance EPA 530-SW-85-007
- D. A Guide to Respiratory Protection for the Asbestos Abatement Industry EPA-560-OPTS-86-001
- E. Guide to Managing Asbestos in Place (Green Book) TS 799 20T July 1990

1.5.8 NOTICES

- A. State and Local agencies: Send written notification as required by state and local regulations prior to beginning any work on ACM as follows:
- B. Copies of notifications shall be submitted to the TMWRF for the facility's records at the same time frame notification is given to EPA, State, and Local authorities.

1.5.9 PERMITS/LICENSES

- A. The contractor shall apply for and have all required permits and licenses to perform asbestos abatement work as required by Federal, State, and Local regulations including a Nevada Certified Abatement Contractor License.

1.5.10 POSTING AND FILING OF REGULATIONS

- A. Maintain two (2) copies of applicable federal, state, and local regulations. Post one copy of each at the regulated area where workers will have daily access to the regulations and keep another copy in the Contractor's office.

1.5.11 TMWRF RESPONSIBILITIES

Prior to commencement of work:

- A. Notify occupants adjacent to regulated areas of project dates and requirements for relocation, if needed. Arrangements must be made prior to starting work for relocation of desks, files, equipment, and personal possessions to avoid unauthorized access into the regulated area. **Note: Notification of adjacent personnel is required by OSHA in 29 CFR 1926.1101 (k) to prevent unnecessary or unauthorized access to the regulated area.**
- B. During abatement, submit to the Contractor, results of bulk material analysis and air sampling data collected during the course of the abatement. This information shall not release the Contractor from any responsibility for OSHA compliance.

1.5.12 SITE SECURITY

- A. Regulated area access is to be restricted only to authorized, trained/accredited and protected personnel. These may include the Contractor's employees, employees of Subcontractors, TMWRF employees and representatives, State and local inspectors, and any other designated individuals. A list of authorized

personnel shall be established prior to commencing the project and be posted in the clean room of the decontamination unit.

- B. Entry into the regulated area by unauthorized individuals shall be reported immediately to the Competent Person by anyone observing the entry. The Competent person shall immediately notify the TMWRF.
- C. A log book shall be maintained onsite of anyone who enters the regulated area must record their name, affiliation, time in, and time out for each entry.
- D. Access to the regulated area shall be through of a critical barrier and then roof access hatch. All other access (doors, windows, hallways, etc.) shall be sealed or locked to prevent entry to or exit from the regulated area. The only exceptions for this requirement are the waste/equipment load-out area which shall be sealed except during the removal of containerized asbestos waste from the regulated area, and emergency exits. Emergency exits shall not be locked from the inside; however, they shall be sealed with poly sheeting and taped until needed.
- E. The Contractor's Competent Person shall control site security during abatement operations in order to isolate work in progress and protect adjacent personnel. A 24 hour security system shall be provided at the entrance to the regulated area to assure that all entrants are logged in/out and that only authorized personnel are allowed entrance.
- F. The Contractor will have the TMWRF assistance in notifying adjacent personnel of the presence, location and quantity of ACM in the regulated area and enforcement of restricted access by the TMWRF employees.
- G. Access to the regulated area shall be locked during non-working hours and secured by TMWRF Representative or Competent Person.

1.5.13 EMERGENCY ACTION PLAN AND ARRANGEMENTS

- A. An Emergency Action Plan shall be developed by prior to commencing abatement activities and shall be agreed to by the Contractor and the TMWRF. The Plan shall meet the requirements of 29 CFR 1910.38 (a);(b). A written fall protection plan must be included as part of the emergency action plan.
- B. Emergency procedures shall be in written form and prominently posted in the clean room and equipment room of the decontamination unit. Everyone, prior to entering the regulated area, must read and sign these procedures to acknowledge understanding of the regulated area layout, location of emergency exits and emergency procedures.
- C. Emergency planning shall include written notification of police, fire, and emergency medical personnel of planned abatement activities; work schedule; layout of regulated area; and access to the regulated area, particularly barriers that may affect response capabilities.
- D. Emergency planning shall include consideration of fire, explosion, hazardous atmospheres, electrical hazards, slips/trips and falls, confined spaces, and heat stress illness. Written procedures for response to emergency situations shall be developed and employee training in procedures shall be provided.
- E. Employees shall be trained in regulated area/site evacuation procedures in the event of workplace emergencies.

1. For non life-threatening situations - employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the regulated area to obtain proper medical treatment.
 2. For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove them from the regulated area, and secure proper medical treatment.
- F. Telephone numbers of any/all emergency response personnel shall be prominently posted in the clean room, along with the location of the nearest telephone.
- G. The Contractor shall provide verification of first aid/CPR training for personnel responsible for providing first aid/CPR. OSHA requires medical assistance within 3-4 minutes of a life-threatening injury/illness. Bloodborne Pathogen training shall also be verified for those personnel required to provide first aid/CPR.
- H. The Emergency Action Plan shall provide for a Contingency Plan in the event that an incident occurs that may require the modification of the standard operating procedures during abatement. Such incidents include, but are not limited to, fire; accident; power failure; negative pressure failure; and supplied air system failure. The Contractor shall detail procedures to be followed in the event of an incident assuring that asbestos abatement work is stopped and wetting is continued until correction of the problem.

1.5.14 PRE-CONSTRUCTION MEETING

Prior to commencing the work, the Contractor shall meet with the VP/CIH to present and review, as appropriate, the items following this paragraph. The Contractor's Competent Person(s) who will be on-site shall participate in the pre-start meeting. The pre-start meeting is to discuss and determine procedures to be used during the project. At this meeting, the Contractor shall provide:

- A. Proof of Contractor licensing.
- B. Proof the Competent Person is trained and accredited and approved for working in this State. Verification of the experience of the Competent Person shall also be presented.
- C. A list of all workers who will participate in the project, including experience and verification of training and accreditation.
- D. A list of and verification of training for all personnel who have current first-aid/CPR training. A minimum of one person per shift must have adequate training.
- E. Current medical written opinions for all personnel working on-site meeting the requirements of 29 CFR 1926.1101(m).
- F. Current fit-tests for all personnel wearing respirators on-site meeting the requirements of 29 CFR 1926.1101(h) and Appendix C.
- G. A copy of the Contractor's Asbestos Hazard Abatement Plan for Class II Asbestos Abatement. In these procedures, the following information must be detailed, specific for this project.
 1. Regulated area preparation procedures;

2. Notification requirements procedure of Contractor as required in 29 CFR 1926.1101(d);
 3. If required, decontamination area set-up/layout and decontamination procedures for employees;
 4. Abatement methods/procedures and equipment to be used; and
 5. Personal protective equipment to be used.
- H. At this meeting the Contractor shall provide all submittals as required.
- I. Procedures for handling, packaging and disposal of asbestos waste.
- J. Emergency Action Plan and Contingency Plan Procedures.
- K. Nevada OSHA Asbestos Abatement Project Notification Form.
- L. Washoe County NESHAP Notification Form.

1.6 PROJECT COORDINATION

The following are the minimum administrative and supervisory personnel necessary for coordination of the work.

1.6.1 PERSONNEL

- A. Administrative and supervisory personnel shall consist of a qualified Competent Person(s) as defined by OSHA in the Construction Standards and the Asbestos Construction Standard; Contractor Professional Industrial Hygienist and Industrial Hygiene Technicians. These employees are the Contractor's representatives responsible for compliance with these specifications and all other applicable requirements.
- B. Non-supervisory personnel shall consist of an adequate number of qualified personnel to meet the schedule requirements of the project. Personnel shall meet required qualifications. Personnel utilized on-site shall be pre-approved by the TMWRF representative.
- C. Minimum qualifications for Contractor and assigned personnel are:
1. The Contractor has conducted within the last three (3) years, three (3) projects of similar complexity and dollar value as this project; has not been cited and penalized for serious violations of federal (and state as applicable) EPA and OSHA asbestos regulations in the past three (3) years; has adequate liability/occurrence insurance for asbestos work as required by the state; is licensed in applicable states; has adequate and qualified personnel available to complete the work; has comprehensive standard operating procedures for asbestos work; and has adequate materials, equipment and supplies to perform the work.
 2. The Competent Person has four (4) years of abatement experience of which two (2) years were as the Competent Person on the project; meets the OSHA definition of a Competent Person; has been the Competent Person on two (2) projects of similar size and complexity as this project within the past three (3) years; has completed EPA AHERA/OSHA/State/Local training requirements/accreditation(s) and refreshers; and has all required OSHA documentation related to medical and respiratory protection.

3. The Abatement Personnel shall have completed the EPA AHERA/OSHA abatement worker course; have training on the standard operating procedures of the Contractor; has one year of asbestos abatement experience within the past three (3) years of similar size and complexity; has applicable medical and respiratory protection documentation; and has certificate of training/current refresher and State accreditation/license.

All personnel should be in compliance with OSHA construction safety training as applicable and submit certification

1.7 RESPIRATORY PROTECTION

1.7.1 GENERAL - RESPIRATORY PROTECTION PROGRAM

The Contractor shall develop and implement a written Respiratory Protection Program (RPP) which is in compliance with the January 8, 1998 OSHA requirements found at 29 CFR 1926.1101 and 29 CFR 1910.Subpart I;134. ANSI Standard Z88.2-1992 provides excellent guidance for developing a respiratory protection program. All respirators used must be NIOSH approved for asbestos abatement activities. The written RPP shall, at a minimum, contain the basic requirements found at 29 CFR 1910.134 (c)(1)(i - ix) - Respiratory Protection Program.

1.7.2 RESPIRATORY PROTECTION PROGRAM COORDINATOR

The Respiratory Protection Program Coordinator (RPPC) must be identified and shall have two (2) years experience coordinating RPP of similar size and complexity. The RPPC must submit a signed statement attesting to the fact that the program meets the above requirements.

1.7.3 SELECTION AND USE OF RESPIRATORS

The procedure for the selection and use of respirators must be submitted to the TMWRF as part of the Contractor's qualifications. The procedure must be written clearly enough for workers to understand. A copy of the Respiratory Protection Program must be available in the clean room of the decontamination unit for reference by employees or authorized visitors.

1.7.4 MINIMUM RESPIRATORY PROTECTION

Minimum respiratory protection shall be a half face, HEPA filtered, air purifying respirator when fiber levels are maintained consistently at or below 0.1 f/cc. A higher level of respiratory protection may be provided or required, depending on fiber levels. Respirator selection shall meet the requirements of 29 CFR 1926.1101 (h); Table 1, except as indicated in this paragraph. Abatement personnel must have a respirator for their exclusive use.

1.7.5 MEDICAL WRITTEN OPINION

No employee shall be allowed to wear a respirator unless a physician or other licensed health care professional has provided a written determination they are medically qualified to wear the class of respirator to be used on the project while wearing whole body impermeable garments and subjected to heat or cold stress

1.7.6 RESPIRATOR FIT TEST

All personnel wearing respirators shall have a current quantitative fit test which was conducted in accordance with 29 CFR 1910.134 (f) and Appendix A. Fit tests shall be done for PAPRs which have been put into a failure mode.

1.7.7 RESPIRATOR FIT CHECK

The Competent Person shall assure that the positive/negative pressure user seal check is done each time the respirator is donned by an employee. Head coverings must cover respirator head straps. Any situation that prevents an effective facepiece to face seal as evidenced by failure of a user seal check shall preclude that person from wearing a respirator inside the regulated area until resolution of the problem.

1.7.8 MAINTENANCE AND CARE OF RESPIRATORS

The Respiratory Protection Program Coordinator shall submit evidence and documentation showing compliance with 29 CFR 1910.134 (h) Maintenance and care of respirators.

1.8 WORKER PROTECTION

1.8.1 TRAINING OF ABATEMENT PERSONNEL

Prior to beginning any abatement activity, all personnel shall be trained in accordance with OSHA 29 CFR 1926.1101 (k)(9) and any additional State/Local requirements. Training must include, at a minimum, the elements listed at 29 CFR 1926.1101 (k)(9)(viii). Training shall have been conducted by a third party, EPA/State approved trainer meeting the requirements of EPA 40 CFR 763 Appendix C (AHERA MAP). Initial training certificates and current refresher and accreditation proof must be submitted for each person working at the site.

1.8.2 MEDICAL EXAMINATIONS

Medical examinations meeting the requirements of 29 CFR 1926.1101 (m) shall be provided for all personnel working in the regulated area, regardless of exposure levels. A current physician's written opinion as required by 29 CFR 1926.1101 (m)(4) shall be provided for each person and shall include in the medical opinion the person has been evaluated for working in a heat and cold stress environment while wearing personal protective equipment (PPE) and is able to perform the work without risk of material health impairment.

1.8.3 PERSONAL PROTECTIVE EQUIPMENT

Provide whole body clothing, head coverings, foot coverings and any other personal protective equipment as determined by conducting the hazard assessment required by OSHA at 29 CFR 1910.132 (d). The Competent Person shall ensure the integrity of personal protective equipment worn for the duration of the project. Duct tape shall be used to secure all suit sleeves to wrists and to secure foot coverings at the ankle. Worker protection shall meet the most stringent requirements.

1.8.4 REGULATED AREA ENTRY PROCEDURE

The Competent Person shall ensure that each time workers enter the regulated area, they remove ALL street clothes in the clean room of the decontamination unit and put on new disposable coveralls, head coverings, a clean respirator, and then proceed through the shower room to the equipment room where they put on non-disposable required personal protective equipment.

1.8.5 DECONTAMINATION PROCEDURE

The Competent Person shall require all personnel to adhere to following decontamination procedures whenever they leave the regulated area.

- A. When exiting the regulated area, remove all disposable PPE and dispose of in a disposal bag provided in the regulated area.
- B. Carefully decontaminate and clean the respirator. Put in a clean container/bag.
- C. Where containment is not required for ACM removal, an adequate washing station will be provided for the employees for removal of disposable PPE and to clean the respirator.

1.8.6 REGULATED AREA REQUIREMENTS

The Competent Person shall meet all requirements of 29 CFR 1926.1101 (o) and assure that all requirements for Class I regulated areas at 29 CFR 1926.1101 (e) are met applicable to Class II work. All personnel in the regulated area shall not be allowed to eat, drink, smoke, chew tobacco or gum, apply cosmetics, or in any way interfere with the fit of their respirator.

PART 2 - PRODUCTS, MATERIALS AND EQUIPMENT

2.1 MATERIALS AND EQUIPMENT

2.1.1 GENERAL REQUIREMENTS (ALL ABATEMENT PROJECTS)

Prior to the start of work, the contractor shall provide and maintain a sufficient quantity of materials and equipment to assure continuous and efficient work throughout the duration of the project. Work shall not start unless the following items have been delivered to the site and the CPIH/CIH has submitted verification to the TMWRF's representative.

- A. All materials shall be delivered in their original package, container or bundle bearing the name of the manufacturer and the brand name (where applicable).

- B. Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Flammable and combustible materials cannot be stored inside buildings. Replacement materials shall be stored outside of the regulated area until abatement is completed.
- C. The Contractor shall not block or hinder use of buildings by staff, and visitors to the TMWRF in partially occupied buildings by placing materials/equipment in any unauthorized location.
- D. The Competent Person shall inspect for damaged, deteriorating or previously used materials. Such materials shall not be used and shall be removed from the worksite and disposed of properly.
- E. Polyethylene sheeting for walls in the regulated area shall be a minimum of 4-mils. For floors and all other uses, sheeting of at least 6-mil shall be used in widths selected to minimize the frequency of joints. Fire retardant poly shall be used throughout.
- F. The method of attaching polyethylene sheeting shall be agreed upon in advance by the Contractor and the TMWRF and selected to minimize damage to equipment and surfaces. Method of attachment may include any combination of moisture resistant duct tape furring strips, spray glue, staples, nails, screws, lumber and plywood for enclosures or other effective procedures capable of sealing polyethylene to dissimilar finished or unfinished surfaces under both wet and dry conditions.
- G. Polyethylene sheeting utilized for the PDF shall be opaque white or black in color, 6 mil fire retardant poly.
- H. Installation and plumbing hardware, showers, hoses, drain pans, sump pumps and waste water filtration system shall be provided by the Contractor.
- I. An adequate number of HEPA vacuums, scrapers, sprayers, nylon brushes, brooms, disposable mops, rags, sponges, staple guns, shovels, ladders and scaffolding of suitable height and length as well as meeting OSHA requirements, fall protection devices, water hose to reach all areas in the regulated area, airless spray equipment, and any other tools, materials or equipment required to conduct the abatement project. All electrically operated hand tools, equipment, electric cords shall be connected to GFCI protection.
- J. Special protection for objects in the regulated area shall be detailed (e.g., plywood over carpeting or hardwood floors to prevent damage from scaffolds, water and falling material).
- K. Disposal bags – 2 layers of 6 mil poly for asbestos waste shall be pre-printed with labels, markings and address as required by OSHA, EPA and DOT regulations.
- L. The TMWRF shall be provided an advance copy of the MSDS as required for all hazardous chemicals under OSHA 29 CFR 1910.1200 - Hazard Communication in the pre-project submittal. Chlorinated compounds shall not be used with any spray adhesive, mastic remover or other product. Appropriate encapsulant(s) shall be provided.
- M. OSHA DANGER demarcation signs, as many and as required by OSHA 29 CFR 1926.1101(k)(7) shall be provided and placed by the Competent Person. All other

posters and notices required by Federal and State regulations shall be posted in the Clean Room.

- N. Adequate and appropriate PPE for the project and number of personnel/shifts shall be provided. All personal protective equipment issued must be based on a written hazard assessment conducted under 29 CFR 1910.132(d).

2.2 CONTAINMENT BARRIERS AND COVERINGS IN THE REGULATED AREA

2.2.1 GENERAL

Using critical barriers, seal off the perimeter to the regulated area to completely isolate the regulated area from adjacent spaces. All horizontal surfaces in the regulated area must be covered with 2 layers of 6 mil fire retardant poly to prevent contamination and to facilitate clean-up. Should adjacent areas become contaminated, immediately stop work and clean up the contamination at no additional cost to the Government. Provide firestopping and identify all fire barrier penetrations due to abatement work as specified in Section 2.2.8; FIRESTOPPING.

2.2.2 PREPARATION PRIOR TO SEALING THE REGULATED AREA

Place all tools, scaffolding, materials and equipment needed for working in the regulated area prior to erecting any plastic sheeting. Remove all uncontaminated removable furniture, equipment and/or supplies from the regulated area before commencing work, or completely cover with 2 layers of 6-mil fire retardant poly sheeting and secure with duct tape. Lock out and tag out any HVAC systems in the regulated area.

2.2.3 CONTROLLING ACCESS TO THE REGULATED AREA

Access to the regulated area is allowed only through the personnel decontamination facility (PDF), if required. All other means of access shall be eliminated and OSHA Danger demarcation signs posted as required by OSHA. If the regulated area is adjacent to or within view of an occupied area, provide a visual barrier of 6 mil opaque fire retardant poly sheeting to prevent building occupant observation. If the adjacent area is accessible to the public, the barrier must be solid.

2.2.4 CRITICAL BARRIERS

Completely separate any openings into the regulated area from adjacent areas using fire retardant poly at least 6 mils thick and duct tape. Individually seal with two layers of 6 mil poly and duct tape all HVAC openings into the regulated area. Individually seal all lighting fixtures, clocks, doors, windows, convectors, speakers, or any other objects in the regulated area. Heat must be shut off any objects covered with poly.

2.2.5 SECONDARY BARRIERS:

A loose layer of 6 mil fire retardant poly shall be used as a drop cloth to protect the floor/horizontal surfaces from debris generated during the Class II work, except for floor tile abatement. This layer shall be replaced as needed during the work.

2.2.6 EXTENSION OF THE REGULATED AREA

If the enclosure of the regulated area is breached in any way that could allow contamination to occur, the affected area shall be included in the regulated area and constructed as per this section. If the affected area cannot be added to the regulated area, decontamination measures must be started immediately and continue until air monitoring indicates background levels are met.

2.2.7 FIRESTOPPING:

- A. Through penetrations caused by cables, cable trays, pipes, sleeves must be firestopped with a fire-rated firestop system providing an air tight seal.
- B. Firestop materials that are not equal to the wall or ceiling penetrated shall be brought to the attention of the TMWRF Representative. The Contractor shall list all areas of penetration, the type of sealant used, and whether or not the location is fire rated. Any discovery of penetrations during abatement shall be brought to the attention of the TMWRF Representative immediately. All walls, floors and ceilings are considered fire rated unless otherwise determined by the TMWRF Representative or Fire Marshall.
- C. Any visible openings whether or not caused by a penetration shall be reported by the Contractor to the TMWRF Representative for a sealant system determination. Firestops shall meet ASTM E814 and UL 1479 requirements for the opening size, penetrant, and fire rating needed.

2.3 MONITORING, INSPECTION AND TESTING

2.3.1 GENERAL

- A. Perform throughout abatement work monitoring, inspection and testing inside and around the regulated area in accordance with the OSHA requirements and these specifications. OSHA requires that the Employee exposure to asbestos must not exceed 0.1 fiber per cubic centimeter (f/cc) of air, averaged over an 8-hour work shift. The CPIH/CIH is responsible for and shall inspect and oversee the performance of the Contractor IH Technician. The IH Technician shall continuously inspect and monitor conditions inside the regulated area to ensure compliance with these specifications. In addition, the CPIH/CIH shall personally manage air sample collection, analysis, and evaluation for personnel, regulated area, and adjacent area samples to satisfy OSHA requirements. Additional inspection and testing requirements are also indicated in other parts of this specification.
- B. The TMWRF will employ an independent industrial hygienist (PIH/CIH) consultant to perform various services on behalf of the TMWRF. The PIH/CIH will perform the necessary monitoring, inspection, testing, and other support services to ensure that TMWRF employees, and visitors will not be adversely affected by the abatement work, and that the abatement work proceeds in accordance with these

specifications, that the abated areas or abated buildings have been successfully decontaminated. The work of the PIH/CIH consultant in no way relieves the Contractor from their responsibility to perform the work in accordance with contract/specification requirements, to perform continuous inspection, monitoring and testing for the safety of their employees, and to perform other such services as specified. The cost of the PIH/CIH and their services will be borne by the TMWRF except for any repeat of final inspection and testing that may be required due to unsatisfactory initial results. Any repeated final inspections and/or testing, if required, will be paid for by the Contractor.

- C. If fibers counted by the PIH/CIH during abatement work, either inside or outside the regulated area, utilizing the NIOSH 7400 air monitoring method, exceed the specified respective limits, the Contractor shall stop work. The Contractor may request confirmation of the results by analysis of the samples by TEM. Request must be in writing and submitted to the TMWRF representative. Cost for the confirmation of results will be borne by the Contractor for both the collection and analysis of samples and for the time delay that may/does result for this confirmation. Confirmation sampling and analysis will be the responsibility of the CPIH/CIH with review and approval of the PIH/CIH. An agreement between the CPIH/CIH and the PIH/CIH shall be reached on the exact details of the confirmation effort, in writing, including such things as the number of samples, location, collection, quality control on-site, analytical laboratory, interpretation of results and any follow-up actions. This written agreement shall be co-signed by the IH's and delivered to the TMWRF representative..

2.3.2 SCOPE OF SERVICES OF THE PIH/CIH CONSULTANT

- A. The purpose of the work of the PIH/CIH is to: assure quality; resolve problems; and prevent the spread of contamination beyond the regulated area. In addition, their work includes performing the final inspection and testing to determine whether the regulated area or building has been adequately decontaminated. All air monitoring is to be done utilizing PCM/TEM. The PIH/CIH will perform the following tasks:
1. Task 1: Perform continuous air monitoring, inspection, and testing outside the regulated area during actual abatement work to detect any faults in the regulated area isolation and any adverse impact on the surroundings from regulated area activities.
 2. Task 2: Perform unannounced visits to spot check overall compliance of work with contract/specifications. These visits may include any inspection, monitoring, and testing inside and outside the regulated area and all aspects of the operation except personnel monitoring.
 3. Task 3: Provide support to the TMWRF representative such as evaluation of submittals from the Contractor, resolution of unforeseen developments, etc.
 4. Task 4: Perform, in the presence of the TMWRF representative, final inspection and testing of a decontaminated regulated area or building at the conclusion of the abatement and clean-up work to certify compliance with all regulations and the TMWRF requirements/specifications.

5. Task 5: Issue certificate of decontamination for each regulated area or building and project report.
- B. All documentation, inspection results and testing results generated by the PIH/CIH will be available to the Contractor for information and consideration. The Contractor shall cooperate with and support the PIH/CIH for efficient and smooth performance of their work.
 - C. The monitoring and inspection results of the PIH/CIH will be used by the TWWRF to issue any Stop Removal orders to the Contractor during abatement work and to accept or reject a regulated area or building as decontaminated.

2.3.3 MONITORING, INSPECTION AND TESTING BY CONTRACTOR CPIH

The Contractor's CPIH/CIH is responsible for managing all monitoring, inspections, and testing required by these specifications, as well as any and all regulatory requirements adopted by these specifications. The CPIH/CIH is responsible for the continuous monitoring of all subsystems and procedures which could affect the health and safety of the Contractor's personnel. Safety and health conditions and the provision of those conditions inside the regulated area for all persons entering the regulated area is the exclusive responsibility of the Contractor/Competent Person. The person performing the personnel and area air monitoring inside the regulated area shall be an IH Technician, who shall be trained and shall have specialized field experience in sampling and analysis. The IH Technician shall have successfully completed a NIOSH 582 Course or equivalent and provide documentation. The IH Technician shall participate in the AIHA Asbestos Analysis Registry or participate in the Proficiency Analytic Testing program of AIHA for fiber counting quality control assurance. The IH Technician shall also be an accredited EPA AHERA/State Contractor/Supervisor, Abatement Worker and Building Inspector. The IH Technician shall have participated in five abatement projects collecting personal and area samples as well as responsibility for documentation on substantially similar projects in size and scope. The analytic laboratory used by the Contractor to analyze the samples shall be AIHA accredited for asbestos PAT and approved by the TMWRF prior to start of the project. A daily log, shall be maintained by the CPIH/CIH or IH Technician, documenting all OSHA requirements for air personal monitoring for asbestos in 29 CFR 1926.1101(f), (g) and Appendix A. This log shall be made available to the TMWRF representative and the PIH/CIH upon request. The log will contain, at a minimum, information on personnel or area samples, other persons represented by the sample, the date of sample collection, start and stop times for sampling, sample volume, flow rate, and fibers/cc. The CPIH/CIH shall collect and analyze samples for each representative job being done in the regulated area, i.e., removal, wetting, clean-up, and load-out. No fewer than two personal samples per shift shall be collected and one area sample per 1,000 square feet of regulated area where abatement is taking place and one sample per shift in the clean room area shall be collected. In addition to the continuous monitoring required, the CPIH/CIH will perform inspection and testing at the final stages of abatement for each regulated area as specified in the CPIH/CIH responsibilities. Additionally, the CPIH/CIH will monitor and record

pressure readings within the containment daily with a minimum of two readings at the beginning and at the end of a shift, and submit the data in the daily report.

2.4 ASBESTOS HAZARD ABATEMENT PLAN

The Contractor shall have established Asbestos Hazard Abatement Plan (AHAP) in printed form and loose leaf folder consisting of simplified text, diagrams, sketches, and pictures that establish and explain clearly the ways and procedures to be followed during all phases of the work by the Contractor's personnel. The AHAP must be modified as needed to address specific requirements of the project. The AHAP shall be submitted for review and approval prior to the start of any abatement work. The minimum topics and areas to be covered by the AHAP(s) are:

- A. Minimum Personnel Qualifications
- B. Contingency Plans and Arrangements
- C. Security and Safety Procedures
- D. Fall Protection Plan
- E. Respiratory Protection/Personal Protective Equipment Program and Training
- F. Medical Surveillance Program and Recordkeeping
- G. Regulated Area Requirements for Abatement
- H. Decontamination Facilities and Entry/Exit Procedures (PDF and W/EDF)
- I. Monitoring, Inspections, and Testing
- J. Disposal of ACM waste
- K. Regulated Area Decontamination/Clean-up
- L. Regulated Area Visual and Air Clearance
- M. Project Completion/Closeout

2.5 SUBMITTALS

2.5.1 PRE-START MEETING SUBMITTALS

Submit to the TMRF a minimum of 14 days prior to the pre-start meeting the following for review and approval. Meeting this requirement is a prerequisite for the pre-start meeting for this project:

- A. Submit a detailed work schedule for the entire project reflecting contract documents and the phasing/schedule requirement.
- B. Submit a staff organization chart showing all personnel who will be working on the project and their capacity/function. Provide their qualifications, training, accreditations, and licenses, as appropriate. Provide a copy of the "Certificate of Worker's Acknowledgment" and the "Affidavit of Medical Surveillance and Respiratory Protection" for each person.
- C. Submit Asbestos Hazard Abatement Plan developed specifically for this project, incorporating the requirements of the specifications, prepared, signed and dated by the CPIH/CIH.
- D. Submit the specifics of the materials and equipment to be used for this project with manufacturer names, model numbers, performance characteristics, pictures/diagrams, and number available for the following:

1. Supplied air system, negative air machines, HEPA vacuums, air monitoring pumps, calibration devices, pressure differential monitoring device and emergency power generating system.
 2. Waste water filtration system, shower system, containment barriers.
 3. Encapsulants, surfactants, hand held sprayers, airless sprayers, and fire extinguishers.
 4. Respirators, protective clothing, personal protective equipment.
 5. Fire safety equipment to be used in the regulated area.
- E. Submit the name, location, and phone number of the approved landfill; proof/verification the landfill is approved for ACM disposal; the landfill's requirements for ACM waste; the type of vehicle to be used for transportation; and name, address, and phone number of subcontractor, if used. Proof of asbestos training for transportation personnel shall be provided.
- F. Submit required notifications and arrangements made with regulatory agencies having regulatory jurisdiction and the specific contingency/emergency arrangements made with local health, fire, ambulance, hospital authorities and any other notifications/arrangements.
- G. Submit the name, location and verification of the laboratory and/or personnel to be used for analysis of air and/or bulk samples. Personal air monitoring must be done in accordance with OSHA 29 CFR 1926.1101 (f) and Appendix A. And area or clearance air monitoring in accordance with EPA AHERA protocols.
- H. Submit qualifications verification: Submit the following evidence of qualifications. Make sure that all references are current and verifiable by providing current phone numbers and documentation.
1. Asbestos Abatement Company: Project experience within the past 3 years; listing projects first most similar to this project: Project Name; Type of Abatement; Duration; Cost; Reference Name/Phone Number; Final Clearance; and Completion Date
 2. List of project(s) halted by owner, A/E, IH, regulatory agency in the last 3 years: Project Name; Reason; Date; Reference Name/Number; Resolution
 3. List asbestos regulatory citations (e.g., OSHA), notices of violations (e.g., Federal and state EPA), penalties, and legal actions taken against the company including and of the company's officers (including damages paid) in the last 3 years. Provide copies and all information needed for verification.
- I. Submit information on personnel: Provide a resume; address each item completely; copies of certificates, accreditations, and licenses. Submit an affidavit signed by the CPIH/CIH stating that all personnel submitted below have medical records in accordance with OSHA 29 CFR 1926.1101(m) and 29 CFR 1910.20 and that the company has implemented a medical surveillance program and written respiratory protection program, and maintains recordkeeping in accordance with the above regulations. Submit the phone number and doctor/clinic/hospital used for medical evaluations.
1. CPIH/CIH and IH Technician: Name; years of abatement experience; list of projects similar to this one; certificates, licenses, accreditations for proof of AHERA/OSHA specialized asbestos training; professional affiliations; number

- of workers trained; samples of training materials; samples of AHAP(s) developed; medical opinion; and current respirator fit test.
2. Competent Person(s)/Supervisor(s): Number; names; social security numbers; years of abatement experience as Competent Person/Supervisor; list of similar projects in size/complexity as Competent Person/Supervisor; as a worker; certificates, licenses, accreditations; proof of AHERA/OSHA specialized asbestos training; maximum number of personnel supervised on a project; medical opinion (asbestos surveillance and respirator use); and current respirator fit test.
 3. Workers: Numbers; names; social security numbers; years of abatement experience; certificates, licenses, accreditations; training courses in asbestos abatement and respiratory protection; medical opinion (asbestos surveillance and respirator use); and current respirator fit test.
- J. Submit copies of State license for asbestos abatement; copy of insurance policy, including exclusions with a letter from agent stating in plain language the coverage provided and the fact that asbestos abatement activities are covered by the policy; copy of AHAP(s) incorporating the requirements of this specification; information on who provides your training, how often; who provides medical surveillance, how often; who performs and how is personal air monitoring of abatement workers conducted; a list of references of independent laboratories/IH's familiar with your air monitoring and standard operating procedures; and copies of monitoring results of the five referenced projects listed and analytical method(s) used.
- K. Rented equipment must be decontaminated prior to returning to the rental agency.
- L. Submit, before the start of work, the manufacturer's technical data for all types of encapsulants, all SDS, and application instructions.

2.5.2 SUBMITTALS DURING ABATEMENT

- A. The Competent Person shall maintain and submit a daily log at the regulated area documenting the dates and times of the following: purpose, attendees and summary of meetings; all personnel entering/exiting the regulated area; document and discuss the resolution of unusual events such as barrier breeching, equipment failures, emergencies, and any cause for stopping work; representative air monitoring and results/TWAs/ELs. Submit this information daily to the PIH/CIH.
- B. The CPIH/CIH shall document and maintain the inspection and approval of the regulated area preparation prior to start of work and daily during work.
1. Removal of any poly barriers.
 2. Visual inspection/testing by the CPIH/CIH or IH Technician prior to application of lockdown encapsulant.
 3. Packaging and removal of ACM waste from regulated area.
 4. Disposal of ACM waste materials; copies of Waste Shipment Records/landfill receipts to the TMWRF's representative on a weekly basis.

2.5.3 SUBMITTALS AT COMPLETION OF ABATEMENT

The CPIH/CIH shall submit a project report consisting of the daily log book requirements and documentation of events during the abatement project including Waste Shipment Records signed by the landfill's agent. It will also include

information on the containment and transportation of waste from the containment with applicable Chain of Custody forms. The report shall include a certificate of completion, signed and dated by the CPH/CIH, in accordance with Attachment #1. All clearance and perimeter area samples must be submitted. The TMWRF Representative will retain the abatement report after completion of the project and provide copies of the abatement report internally as required.

PART 3 - EXECUTION

3.1 PRE-ABATEMENT ACTIVITIES

3.1.1 PRE-ABATEMENT MEETING

The TMWRF representative, upon receipt, review, and substantial approval of all pre-abatement submittals and verification by the CPH/CIH that all materials and equipment required for the project are on the site, will arrange for a pre-abatement meeting between the Contractor, the CPH/CIH, Competent Person(s), the TMWRF representative(s), and the PIH/CIH. The purpose of the meeting is to discuss any aspect of the submittals needing clarification or amplification and to discuss any aspect of the project execution and the sequence of the operation. The Contractor shall be prepared to provide any supplemental information/documentation to the TMWRF's representative regarding any submittals, documentation, materials or equipment. Upon satisfactory resolution of any outstanding issues, the TMWRF's representative will issue a written order to proceed to the Contractor. No abatement work of any kind described in the following provisions shall be initiated prior to the TMWRF's written order to proceed.

3.1.2 PRE-ABATEMENT INSPECTIONS AND PREPARATIONS

Before any work begins on the construction of the regulated area, the Contractor will:

- A. Conduct a space-by-space inspection with an authorized TMWRF's representative and prepare a written inventory of all existing damage in those spaces where asbestos abatement will occur. Still or video photography may be used to supplement the written damage inventory. Document will be signed and certified as accurate by both parties.
- B. The TMWRF Representative, the Contractor, and the PIH/CIH must be aware of the failure to identify asbestos in the areas listed as well as common issues when preparing specifications and contract documents. This is especially critical when demolition is planned, because AHERA surveys are non-destructive, and ACM may remain undetected. A NESHAPS (destructive) ACM inspection should be conducted on all building structures that will be demolished. Ensure the following areas are inspected on the project: Lay-in ceilings concealing ACM; ACM behind walls/windows from previous renovations; inside utility chases/walls; transite piping/ductwork/sheets; behind radiators; lab fume hoods; transite lab countertops; roofing materials; below window sills; water/sewer lines; electrical conduit coverings; crawl spaces(previous abatement contamination); flooring/mastic

covered by carpeting/new flooring; exterior insulated wall panels; on underground fuel tanks; steam line trench coverings.

- C. Ensure that all furniture, machinery, equipment, curtains, drapes, blinds, and other movable objects required to be removed from the regulated area have been cleaned and removed or properly protected from contamination.
- D. If present and required, remove and dispose of carpeting from floors in the regulated area.
- E. Inspect existing firestopping in the regulated area. Correct as needed.

3.1.3 PRE-ABATEMENT CONSTRUCTION AND OPERATIONS

- A. Perform all preparatory work for the first regulated area in accordance with the approved work schedule and with this specification.
- B. Upon completion of all preparatory work, the CPIH/CIH will inspect the work and systems and will notify the TMWRF's representative when the work is completed in accordance with this specification. The TMWRF representative may inspect the regulated area and the systems with the PIH/CIH and may require that upon satisfactory inspection, the Contractor's employees perform all major aspects of the approved SOP's, especially worker protection, respiratory systems, contingency plans, decontamination procedures, and monitoring to demonstrate satisfactory operation.
- C. The CPIH/CIH shall document the pre-abatement activities described above and deliver a copy to the TMWRF representative.
- D. Upon satisfactory inspection of the installation of and operation of systems the TMWRF representative will notify the Contractor in writing to proceed with the asbestos abatement work in accordance with this specification.

3.2 REGULATED AREA PREPARATIONS

3.2.1 OSHA DANGER SIGNS

Post OSHA DANGER signs meeting the specifications of OSHA 29 CFR 1926.1101 at any location and approaches to the regulated area where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the regulated area to permit any personnel to read the sign and take the necessary measures to avoid exposure. Additional signs will be posted following construction of the regulated area enclosure.

3.2.2 SHUT DOWN - LOCK OUT ELECTRICAL

Shut down and lock out/tag out electric power to the regulated area. Provide temporary power and lighting (if needed). Insure safe installation including GFCI of temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. Electricity shall be provided by the TMWRF.

3.2.3 SHUT DOWN - LOCK OUT HVAC

Shut down and lock out/tag out heating, cooling, and air conditioning system (HVAC) components that are in, supply or pass through the regulated area. Investigate the regulated area and agree on pre-abatement condition with the TMWRF representative. Seal all intake and exhaust vents in the regulated area with duct tape and 2 layers of 6-mil poly. Also, seal any seams in system components that pass through the regulated area. Remove all contaminated HVAC system filters and place in labeled 6-mil poly disposal bags for disposal as asbestos waste.

3.2.4 SANITARY FACILITIES

The Contractor shall provide sanitary facilities for abatement personnel and maintain them in a clean and sanitary condition throughout the abatement project.

3.2.5 WATER FOR ABATEMENT

The TMWRF will provide water for abatement purposes. The Contractor shall connect to the existing TMWRF system. The service to the shower(s) shall be supplied with backflow prevention.

3.2.6 PRE-CLEANING MOVABLE OBJECTS

Pre-cleaning of ACM contaminated items shall be performed after the enclosure has been erected and negative pressure has been established in the work area. After items have been pre-cleaned and decontaminated, they may be removed from the work area for storage until the completion of abatement in the work area.

Pre-clean all movable objects within the regulated area using a HEPA filtered vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects shall be removed from the regulated area and carefully stored in an uncontaminated location.

3.2.7 PRE-CLEANING FIXED OBJECTS

Pre-cleaning of ACM contaminated items shall be performed after the enclosure has been erected and negative pressure has been established in the work area

Pre-clean all fixed objects in the regulated area using HEPA filtered vacuums and/or wet cleaning techniques as appropriate. Careful attention must be paid to machinery behind grills or gratings where access may be difficult but contamination may be significant. Also, pay particular attention to wall, floor and ceiling penetration behind fixed items. After pre-cleaning, enclose fixed objects with 2 layers of 6-mil poly and seal securely in place with duct tape. Objects (e.g., permanent fixtures, shelves, electronic equipment, laboratory tables, sprinklers, alarm systems, closed circuit TV equipment and computer cables) which must remain in the regulated area and that require special ventilation or enclosure requirements should be designated here along with specified means of protection. Contact the manufacturer for special protection requirements.

3.2.8 PRE-CLEANING SURFACES IN THE REGULATED AREA

Pre-cleaning of ACM contaminated items shall be performed after the enclosure has been erected and negative pressure has been established in the work area. PPE must be donned during all pre-cleaning activities.

Pre-clean all surfaces in the regulated area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not disturb asbestos-containing materials during this pre-cleaning phase.

3.3 CONTAINMENT BARRIERS AND COVERINGS FOR THE REGULATED AREA

3.3.1 GENERAL

Using critical barriers, seal off the perimeter to the regulated area to completely isolate the regulated area from adjacent spaces. All horizontal surfaces in the regulated area must be covered with 2 layers of 6 mil fire retardant poly to prevent contamination and to facilitate clean-up. Should adjacent areas become contaminated, immediately stop work and clean up the contamination at no additional cost.

3.3.2 PREPARATION PRIOR TO SEALING OFF

Place all tools, scaffolding, materials and equipment needed for working in the regulated area prior to erecting any plastic sheeting. Remove all uncontaminated removable furniture, equipment and/or supplies from the regulated area before commencing work, or completely cover with 2 layers of 6-mil fire retardant poly sheeting and secure with duct tape. Lock out and tag out any HVAC systems in the regulated area.

3.3.3 CONTROLLING ACCESS TO THE REGULATED AREA

Access to the regulated area is allowed only through the personnel decontamination facility (PDF), if required. All other means of access shall be eliminated, and OSHA Danger demarcation signs posted as required by OSHA. If the regulated area is adjacent to or within view of an occupied area, provide a visual barrier of 6 mil opaque fire retardant poly sheeting to prevent building occupant observation. If the adjacent area is accessible to the public, the barrier must be solid.

3.3.4 CRITICAL BARRIERS

Completely separate any openings into the regulated area from adjacent areas using fire retardant poly at least 6 mils thick and duct tape. Individually seal with 2 layers of 6 mil poly and duct tape all HVAC openings into the regulated area. Individually seal all lighting fixtures, clocks, doors, windows, convectors, speakers,

or any other objects in the regulated area. Heat must be shut off any objects covered with poly.

3.3.5 EXTENSION OF THE REGULATED AREA

If the enclosure of the regulated area is breached in any way that could allow contamination to occur, the affected area shall be included in the regulated area and constructed as per this section. If the affected area cannot be added to the regulated area, decontamination measures must be started immediately and continue until air monitoring indicates background levels are met.

3.4 REMOVAL OF CLASS II ROOFING

3.4.1 GENERAL

TMWRF must be notified at least 24 hours in advance of any waste removed from the containment. All applicable requirements of OSHA, EPA, and DOT shall be followed during Class II work. Keep materials intact; do not disturb; wet while working with it; wrap as soon as possible with 2 layers of 6 mil plastic for disposal.

3.4.2 OUTDOOR WORK AREAS

On some projects, work must be performed on exterior areas of the building. If outdoor work is to be performed, all applicable OSHA, state and local regulations must be followed to ensure that outdoor work areas are in compliance so that workers, the general public and the environment are protected.

3.4.3 SCAFFOLD FALL PROTECTION

Each employee more than 6 feet above a lower level shall be protected from falls by guardrails or a fall arrest system. Fall arrest system includes harnesses, components of the harness/belt such as Dee-rings, and snap hooks, lifelines, and anchorage points. Lifelines must be independent of supports lines and suspension ropes and not attached to the same anchorage point as the support or suspension rope. OSHA's scaffolding standard defines a competent person as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous to employees, and who has authorization to take prompt corrective measures to eliminate them." The competent person will determine if it is safe for employees to work on or from a scaffold or roof during storms or high winds and to ensure that a personal fall arrest system will protect the employees. The competent person will also inspect the scaffold and scaffold components for visible defects before each work shift and after any occurrence which could affect the structural integrity and to authorize prompt corrective measures.

3.4.4 ROOF FALL PROTECTION

The competent person shall determine if the walking/working surfaces on which the employees are to work have the strength and structural integrity to support the employees safely. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest system.

3.4.5 REMOVAL OF ROOFING

- A. Roofing material shall be removed in an intact state to the extent that it is feasible.
- B. Wet methods shall be used to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards
- C. Cutting machines shall be continuously misted during use, unless a competent person determines that misting substantially decreases worker safe
- D. When removing built-up roofs with asbestos-containing roofing felts and an aggregate surface using a power roof cutter, all dust resulting from the cutting operation shall be collected by a HEPA dust collector, or shall be HEPA vacuumed by vacuuming along the cut line. When removing built-up roofs with asbestos-containing roofing felts and a smooth surface using a power roof cutter, the dust resulting from the cutting operation shall be collected either by a HEPA dust collector or HEPA vacuuming along the cut line, or by gently sweeping and then carefully and completely wiping up the still-wet dust and debris left along the cut line.
- E. Asbestos-containing material that has been removed from a roof shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane or hoist
- F. Any ACM that is not intact shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift. While the material remains on the roof it shall either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting
- G. Intact ACM shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift
- H. Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such manner so as to preclude the dispersion of dust
- I. Roof level heating and ventilation air intake sources shall be isolated or the ventilation system shall be shut down. The sealing of air intake sources shall be coordinated with TMWRF Personnel and occupant location to ensure acceptable IAQ is maintained within the facility as per ASHRAE Standard 1955.
- J. Notwithstanding any other provision of this section, removal or repair of sections of intact roofing less than 25 square feet in area does not require use of wet methods or HEPA vacuuming as long as manual methods which do not render the material non-intact are used to remove the material and no visible dust is created by the removal method used. In determining whether a job involves less than 25 square feet, the employer shall include all removal and repair work performed on the same roof on the same day.

All waste must be wrapped in two layers of 6 mil poly and lowered carefully to the ground. Roofing may be lowered by way of a dust-tight chute.

3.5 DISPOSAL OF CLASS II WASTE MATERIAL

3.5.1 GENERAL

Dispose of waste ACM and debris which is packaged in accordance with these specifications, OSHA, EPA and DOT. The landfill requirements for packaging must also be met. Transport will be in compliance with 49 CFR 100–185 regulations. Disposal shall be done at an approved landfill. Disposal of non-friable ACM shall be done in accordance with applicable regulations.

3.6 PROJECT DECONTAMINATION

3.6.1 GENERAL

- A. The entire work related to project decontamination shall be performed under the close supervision and monitoring of the CPIH/CIH.
- B. If the asbestos abatement work is in an area which was contaminated prior to the start of abatement, the decontamination will be done by cleaning the primary barrier poly prior to its removal and cleanings of the surfaces of the regulated area after the primary barrier removal.
- C. If the asbestos abatement work is in an area which was uncontaminated prior to the start of abatement, the decontamination will be done by cleaning the primary barrier poly prior to its removal, thus preventing contamination of the building when the regulated area critical barriers are removed.

3.6.2 REGULATED AREA CLEARANCE

Air testing and other requirements which must be met before release of the Contractor and re-occupancy of the regulated area space are specified in Final Testing Procedures.

3.6.3 WORK DESCRIPTION

Decontamination includes the cleaning and clearance of the air in the regulated area and the decontamination and removal of the enclosures/facilities installed prior to the abatement work including primary/critical barriers.

3.6.4 PRE-DECONTAMINATION CONDITIONS

- A. Before decontamination starts, all ACM waste from the regulated area shall be removed, all waste collected and removed, and the secondary barrier of poly removal and disposed of along with any gross debris generated by the work.
- B. At the start of decontamination, the following shall be in place:
 - 1. Critical barriers over all openings consisting of two layers of 6 mil poly which is the sole barrier between the regulated area and the rest of the building or outside.

2. Decontamination facilities, if required for personnel and equipment in operating condition.

3.6.5. CLEANING

Carry out a first cleaning of all surfaces of the regulated area including items of remaining poly sheeting, tools, scaffolding, ladders/staging by wet methods and/or HEPA vacuuming. Do not use dry dusting/sweeping/air blowing methods. Use each surface of a wetted cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible residue from abated surfaces or poly or other surfaces. Remove all filters in the air handling system and dispose of as ACM waste in accordance with these specifications. The negative pressure system shall remain in operation during this time. Additional cleaning(s) may be needed as determined by the CPIH/PIH/CIH.

3.7 VISUAL INSPECTION

3.7.1 GENERAL

Notify the TMWRF representative 24 hours in advance for the performance of the final visual inspection. The final visual inspection will be performed by the PIH/CIH after the cleaning.

3.7.2 VISUAL INSPECTION

Final visual inspection will include the entire regulated area, all poly sheeting, seals over HVAC openings, doorways, windows, and any other openings. If any debris, residue, dust or any other suspect material is detected, the cleaning shall be repeated at no cost to the TMWRF. Dust/ material samples may be collected and analyzed at no cost to the TMWRF at the discretion of the PIH/CIH to confirm visual findings. When the regulated area is visually clean the final testing can be done.

3.8 ABATEMENT CLOSEOUT AND CERTIFICATE OF COMPLIANCE

3.8.1 COMPLETION OF ABATEMENT WORK

- A. After thorough decontamination, complete asbestos abatement work upon meeting the regulated area clearance criteria and fulfilling the following:
 1. Remove all equipment, materials, and debris from the project area.
 2. Package and dispose of all asbestos waste as required.
 3. Repair or replace all interior finishes damaged during the abatement work.
 4. Fulfill other project closeout requirements as specified elsewhere in this specification.

3.8.2 CERTIFICATE OF COMPLETION BY CONTRACTOR

The CPIH shall complete and sign the "Certificate of Completion" in accordance with Attachment 1 at the completion of the abatement and decontamination of the regulated area.

3.8.3 WORK SHIFTS

All work shall be done during administrative hours (7:00 AM to 4:00 PM) Monday - Friday excluding Federal Holidays. Any change in the work schedule must be approved in writing by the TMWRF Representative.

**ATTACHMENT #1
CERTIFICATE OF COMPLETION**

DATE: _____ Project #: _____

PROJECT NAME: _____ Abatement Contractor: _____

ADDRESS: _____

1. I certify that I have personally inspected, monitored and supervised the abatement work of (specify regulated area or Building):
which took place from / / to / /
2. That throughout the work all applicable requirements/regulations and the TMWRF specifications were met.
3. That any person who entered the regulated area was protected with the appropriate personal protective equipment and respirator and that they followed the proper entry and exit procedures and the proper operating procedures for the duration of the work.
4. That all employees of the Abatement Contractor engaged in this work were trained in respiratory protection, were experienced with abatement work, had proper medical surveillance documentation, were fit-tested for their respirator, and were not exposed at any time during the work to asbestos without the benefit of appropriate respiratory protection.
5. That I performed and supervised all inspection and testing specified and required by applicable regulations and TMWRF specifications.
6. That the conditions inside the regulated area were always maintained in a safe and healthy condition and the maximum fiber count never exceeded 0.5 f/cc, except as described below.
7. That all abatement work was done in accordance with OSHA requirements and the manufacturer's recommendations.

CPIH/CIH Signature/Date: _____

CPIH/CIH Print Name: _____

Abatement Contractor Signature/Date: _____

Abatement Contractor Print Name: _____

ATTACHMENT #2**CERTIFICATE OF WORKER'S ACKNOWLEDGMENT**

PROJECT NAME: _____ DATE: _____

PROJECT ADDRESS: _____

ABATEMENT CONTRACTOR'S NAME: _____

WORKING WITH ASBESTOS CAN BE HAZARDOUS TO YOUR HEALTH. INHALING ASBESTOS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCERS. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, YOUR CHANCES OF DEVELOPING LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You must be supplied with the proper personal protective equipment including an adequate respirator and be trained in its use. You must be trained in safe and healthy work practices and in the use of the equipment found at an asbestos abatement project. You must receive/have a current medical examination for working with asbestos. These things shall be provided at no cost to you. By signing this certificate you are indicating to the owner that your employer has met these obligations.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators and have been informed of the type of respirator to be used on the above indicated project. I have a copy of the written Respiratory Protection Program issued by my employer. I have been provided for my exclusive use, at no cost, with a respirator to be used on the above indicated project.

TRAINING COURSE: I have been trained by a third party, State/EPA accredited trainer in the requirements for an AHERA/OSHA Asbestos Abatement Worker training course, 32 hours minimum duration. I currently have a valid State accreditation certificate. The topics covered in the course include, as a minimum, the following:

- Physical Characteristics and Background Information on Asbestos
- Potential Health Effects Related to Exposure to Asbestos
- Employee Personal Protective Equipment
- Establishment of a Respiratory Protection Program
- State of the Art Work Practices
- Personal Hygiene
- Additional Safety Hazards
- Medical Monitoring
- Air Monitoring
- Relevant Federal, State and Local Regulatory Requirements, Procedures, and Standards
- Asbestos Waste Disposal

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, occupational

history, pulmonary function test, and may have included a chest x-ray evaluation. The physician issued a positive written opinion after the examination.

Signature: _____

Printed Name: _____

Social Security Number: _____

Witness: _____

ATTACHMENT #3

AFFIDAVIT OF MEDICAL SURVEILLANCE, RESPIRATORY PROTECTION AND TRAINING/ACCREDITATION

TMWRF PROJECT NAME AND NUMBER: _____

FACILITY: _____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS: _____

1. I verify that the following individual

Name: _____ Social Security Number: _____

who is proposed to be employed in asbestos abatement work associated with the above project by the named Abatement Contractor, is included in a medical surveillance program in accordance with 29 CFR 1926.1101(m), and that complete records of the medical surveillance program as required by 29 CFR 1926.1101 (m)(n) and 29 CFR 1910.20 are kept at the offices of the Abatement Contractor at the following address.

Address: _____

2. I verify that this individual has been trained, fit-tested and instructed in the use of all appropriate respiratory protection systems and that the person is capable of working in safe and healthy manner as expected and required in the expected work environment of this project.
3. I verify that this individual has been trained as required by 29 CFR 1926.1101(k). This individual has also obtained a valid State accreditation certificate. Documentation will be kept on-site.
4. I verify that I meet the minimum qualifications criteria of the TMWRF specifications for a CPIH.

Signature of CPIH/CIH: _____ Date: _____

Printed Name of CPIH/CIH: _____

Signature of Contractor: _____ Date: _____

Printed Name of Contractor: _____

ATTACHMENT #4**ABATEMENT CONTRACTOR/COMPETENT PERSON(S) REVIEW AND ACCEPTANCE OF THE TMWRF ASBESTOS SPECIFICATIONS**

TWMRF Project Location: _____

TWMRF Project #: _____

TWMRF Project Description: _____

This form shall be signed by the Asbestos Abatement Contractor Owner and the Asbestos Abatement Contractor's Competent Person(s) prior to any start of work related to this Specification. If the Asbestos Abatement Contractor's/Competent Person(s) has not signed this form, they shall not be allowed to work on-site.

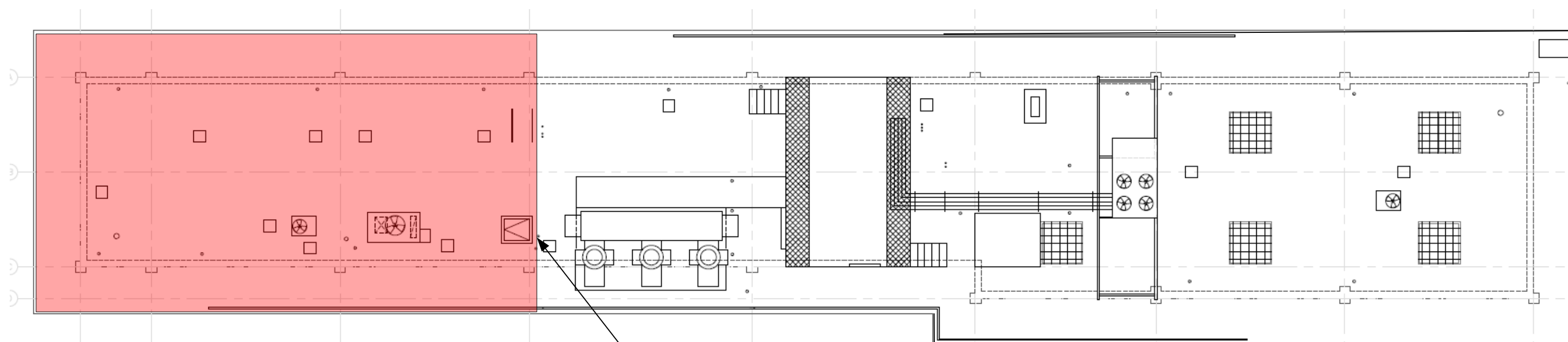
I, the undersigned, have read TMWRF's Asbestos Specification regarding the asbestos abatement requirements. I understand the requirements of the TMWRF's Asbestos Specification and agree to follow these requirements as well as all required rules and regulations of OSHA/EPA/DOT and State/Local requirements. I have been given ample opportunity to read the TMWRF's Asbestos Specification and have been given an opportunity to ask any questions regarding the content and have received a response related to those questions. I do not have any further questions regarding the content, intent and requirements of the TMWRF's Asbestos Specification.

At the conclusion of the asbestos abatement, I will certify that all asbestos abatement work was done in accordance with the TMWRF's Asbestos Specification and all ACM was removed properly, and no fibrous residue remains on any abated surfaces.

Abatement Contractor Owner's Signature _____ Date _____

Abatement Contractor Competent Person(s) _____ Date _____

-- END- - - -



Roof Transition Approximately 12" From East Edge of Roof Access Hatch

Note: Asbestos Locations and Quantities are approximations. Contractor must verify quantities



Converse Consultants
 Geotechnical Engineering
 Environmental & Groundwater Science
 Inspection & Testing Services

LEGEND



Asbestos Roofing Material and Penetration Mastic
 Approximately -2,600 SF

ASBESTOS LOCATION DRAWING

TMWRF – ROOFING ABATEMENT PROJECT
 LABORATORY BUILDING
 8500 CLEAN WATER WAY
 RENO, NEVADA
 CONVERSE PROJECT NO. 18-23119-01

By: PSC

Figure No. 1





Staging And Storage Area



- Note:
1. Contractor May Close Road Within Staging and Storage Area To Vehicle Access During Construction.
 2. Maintain Protected Pedestrian Access To All Sidewalks And All Building Entrances At All Times.



LEGEND

-  Regulated Area
-  Remote Decon
-  Covered Waste Chute
-  Covered Dumpster

Regulated Area Abatement Site Plan

TMWRF – ROOFING ABATEMENT PROJECT
 LABORATORY BUILDING
 8500 CLEAN WATER WAY
 RENO, NEVADA
 CONVERSE PROJECT NO. 18-23119-01

By: PSC



Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

February 10, 2017

Mr. Roy Carroll
Applied Mechanical Inc.
2010 Kleppe Lane
Sparks, Nevada 89431

RE: Task: Limited Asbestos Evaluation
Project: TMWRF – Mechanical Roofing Project
Location: Truckee Meadows Water Reclamation Facility
Laboratory Building and Electrical Building
8500 Clean Water Way
Reno, Nevada
Converse Project No.: 17-23113-01

Dear Mr. Carroll:

Converse Consultants (Converse) is pleased to submit the results of our Limited Asbestos evaluation conducted at the above subject site on February 6, 2017. Our scope of services consisted of a visual inspection, bulk sample collection of suspect asbestos-containing roofing materials (ARCMs), laboratory analysis and the generation of this report. The project, as described by the client, is the disturbance of roofing material on the two buildings designated Laboratory Building and Electrical Equipment Building of the Truckee Meadows Water Reclamation Facility (TMWRF) located at 8500 Clean Water Way in Reno, Nevada. The project was performed in accordance with our proposal dated February 3, 2017.

The suspect ACMs sampled during the visit included:

- Roof Penetration Mastic
- Roofing Material

During the site visit, it was observed that there are two different roofing material types on the Laboratory Building. The transition between the roofs is just east of the roof access hatch and are being designated east and west roofs. The roofing material on the Electrical Equipment Building was determined to be all of the same type material.

A total of six bulk samples were collected from areas representing the homogenous use of suspected materials. Bulk analysis of the samples collected was conducted utilizing Polarized Light Microscopy (PLM) and identified the following materials to contain greater than one percent (>1%) asbestos by weight:

Summary of ACMs

Sample ID#	Suspect Material	Sample Locations	Location of Material	Asbestos Content (%)	EPA Category	OSHA Class
R-03 R-04	Roofing Material	Laboratory Building West Side	Appears typical to the west portion of the roof on the Laboratory Building.	40% - 65% Chrysotile	Category I Non-Friable	Class II

- Approximately 2,600 square feet of roofing material on the west portion of the Laboratory Building or the undetermined amount of roofing material in the areas where the work will be conducted.

It is the opinion of Converse, based on our understanding of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations, any intended removal disturbing the materials would be considered a regulated project. This process would be considered a Class II removal and all regulatory protocol would be required. These ARCMs will require abatement by a certified Nevada licensed asbestos abatement contractor or a certified Nevada licensed roofing contractor trained in single component removal of ARCM's under Class II removal protocols. This protocol would consist of, but not limited to, the following:

- Establishment of a 'Regulated Area'
- Intact removal if possible
- Wet Methods if feasible
- Cutting machine misting
- HEPA vacuuming of debris
- Lowering of removed material no later that day's end
- Dust control of removed materials
- Prevent intake of airborne asbestos through roof vent system
- Proper PPE for employees
- Air monitoring during the removal process.

It is also recommended that third party perimeter air quality sampling be performed during the removal activities to comply with Nevada ASHES and Washoe County District Health Department – Air Quality Management Division (WCDHD-AQMD) regulations and the protect the interests of the TMWRF.

Information regarding the materials identified/samples is included in the attached laboratory report.

Converse is not responsible for any claims or damages associated with the interpretation of available information. This assessment should not be regarded as a guarantee that no further asbestos beyond that which was suspected to be present (and sampled) during our investigation, is present at the property. In addition, asbestos is

usually not distributed uniformly throughout a material, and Converse cannot guarantee that all areas sampled are exactly as represented throughout the entire facility. Other suspect materials may be uncovered that were previously hidden during renovation or demolition. Additional samples of these materials should be collected and analyzed for asbestos if this occurs. Information regarding the materials sampled is identified in the attached laboratory report.

Thank you for the opportunity to be of service. Should you have any questions or comments regarding this report, or if you require further assistance, please do not hesitate to call.

Respectfully submitted,

CONVERSE CONSULTANTS



Frank M. Reynolds III
Inspector
NV Asbestos Consultant: IJM-1248

Reviewed and Approved by:



Philip Childers
Senior. Environmental Manager
NV Asbestos License No.: IJPM-1692

Enclosures: Laboratory Report
Survey Data Sheet
Sample Location Diagram

Distribution: Addressee, via e-mail PDF format



POLARIZED LIGHT MICROSCOPY ANALYSIS REPORT

Client:	CONVERSE CONSULTANTS	Date Received:	2/6/2017
	4840 MILL STREET, SUITE #5	Date Analyzed:	2/6/2017
	RENO, NV 89502	Date Reported:	2/7/2017
Contact:	FRANK REYNOLDS III	Reported To:	FRANK REYNOLDS III
Account:	NA	Submitted By:	Hand
Project Number:	17-23113-01	Report No.:	71-238130

TMURF-Mechanical Roofing Project
Lab & Electrical Buildings, 8500 Clean Water Way

I certify that these results are accurate for the samples obtained and comply with accepted methods of analysis.

Lab Manager, Dan R. Dolk

Analyst, Dan R. Dolk

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238130A Black Penetration Mastic	R-01A	None Detected	25 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	60 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 15 Mineral Cleavages Paint Perlite Vermiculite	I F # Of Layers
238130B Black Mastic	R-01B	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	90 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint Perlite Vermiculite	I F # Of Layers
238130C Black Roofing	R-01C	None Detected	45 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	25 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 30 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238130D Black Roofing	R-01D	None Detected	10 Cellulose 45 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 25 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 20 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238130E Black Roofing	R-01E	None Detected	20 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 60 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 20 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238130F Black Roofing	R-01F	None Detected	45 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 45 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238130G Black Mastic	R-01G	None Detected	5 Cellulose 5 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 80 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238130H Black Felt	R-01H	None Detected	70 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 30 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-HOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238130I Yellow Foam	R-01I	None Detected	<1 Cellulose <1 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 99 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica <1 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238130J Black Mastic	R-01J	None Detected	20 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 70 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238131A Black Roofing	R-02A	None Detected	35 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 40 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 25 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238131B Black Roofing	R-02B	None Detected	45 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 30 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 25 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238131C Black Roofing	R-02C	None Detected	40 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 30 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 30 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238131D Black Roofing	R-02D	None Detected	<1 Cellulose 40 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 30 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 30 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238131E Black Mastic	R-02E	None Detected	20 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 60 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 20 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238131F Black Roofing	R-02F	None Detected	15 Cellulose 15 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 50 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 20 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238131G Yellow Foam	R-02G	None Detected	Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 95 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I NF # Of Layers
238131H Brown Insulation	R-02H	None Detected	50 Cellulose 10 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink 35 Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238132A Black Penetration Mastic	R-03A	None Detected	20 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 60 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 20 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132B Black Mastic	R-03B	None Detected	5 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 80 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 15 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132C Black Roofing	R-03C	50-60 Chrysotile	7 Cellulose 3 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 25 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132D Black Mastic	R-03D	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 95 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132E Black Roofing	R-03E	55-65 Chrysotile	4 Cellulose 1 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 25 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238132F Black Mastic	R-03F	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	95 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132G Black Roofing	R-03G	40-50 Chrysotile	15 Cellulose 5 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	20 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132H Black Mastic	R-03H	None Detected	10 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	90 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132I Black Roofing	R-03I	50-60 Chrysotile	10 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	20 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238132J Brown Insulation	R-03J	None Detected	60 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	40 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238133A Black Roofing	R-04A	40-50 Chrysotile	15 Cellulose 5 Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 25 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238133B Black Roofing	R-04B	45-55 Chrysotile	10 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 30 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238133C Black Mastic	R-04C	3-5 Chrysotile	5 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 85 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238133D Black Roofing	R-04D	50-60 Chrysotile	10 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 20 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 10 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238133E Black Mastic	R-04E	None Detected	15 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 70 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 15 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238133F Brown Insulation	R-04F	None Detected	75 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica Mineral Cleavages Paint / Ink 25 Perlite Vermiculite	I F # Of Layers
238134A Grey Coating	R-05A	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders 30 Carbonate Binders 40 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 30 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238134B Yellow Foam	R-05B	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 100 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica <1 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238134C Black Mastic	R-05C	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders Carbonate Binders 85 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 15 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers
238135A Grey Coating	R-06A	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	Binders 30 Carbonate Binders 40 Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 30 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

RESULTS LAB SAMPLE # LAB DESCRIPTION	CLIENT SAMPLE #	PERCENTAGE AND TYPE OF ASBESTOS	PERCENTAGE FIBROUS NON-ASBESTOS	PERCENTAGE NON-FIBROUS MATERIAL	I-INHOMOGENEOUS H-HOMOGENEOUS F-FIBROUS NF-NONE FIBROUS
238135B Yellow Foam	R-06B	None Detected	Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	100 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica Mineral Cleavages Paint / Ink Perlite Vermiculite	I NF # Of Layers
238135C Black Mastic	R-06C	None Detected	<1 Cellulose Glass Fibers Animal Fibers Mineral Wool Processed Paper Synthetic Fiber Talc Wollastonite Wood Fibers Cork	95 Binders Carbonate Binders Organic Binders Sulfate Binders Aggregate Diatoms Gypsum Mica 5 Mineral Cleavages Paint / Ink Perlite Vermiculite	I F # Of Layers

Attached are the results of analysis of bulk samples submitted for asbestos identification. Converse Consultants follows EPA Method EPA/600/R-93/116, July 1993 and EPA/600/M4-82-020, December 1982.

Each sample was initially examined under a stereoscopic microscopic at a magnification of 10x to 60x. Fibrous material was examined for morphology and content. Portions of each sample were immersed in a fluid with a known refractive index. The sample was examined under polarized light using a Olympus BHT PLM microscope with a McCrone Dispersion Staining objective under 100X magnification. Optical characteristics of the fibrous material were examined to determine the mineralogy of the fiber. The observed optical characteristics include angles of extinction, signs of elongation and dispersion staining colors. Asbestos fiber content is estimated by optically comparing the quantity of asbestos material and non-asbestos material to establish estimated percentages. Per the method, samples with distinct layers or inhomogenous character have each layer analyzed separately and reported as individual layers. (I – Inhomogeneous, H – Homogeneous, F – Fibrous, NF – Non-Fibrous)

Bulk sampling may not have been performed by Converse Consultants personnel. No warranty is made as to the acceptability of sampling strategies.

Converse Consultants is National Voluntary Laboratory Accreditation Program accredited. Our NVLAP Lab Code: 102091-0. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. This report must not be reproduced except in full without the approval of the laboratory. This report relates only to the items tested.

Converse Consultants

4840 Mill Street, Suite 5, Reno, Nevada 89502

SURVEY DATA

Page 1 of 1
 (775) 856-3833 FAX (775) 856-3513

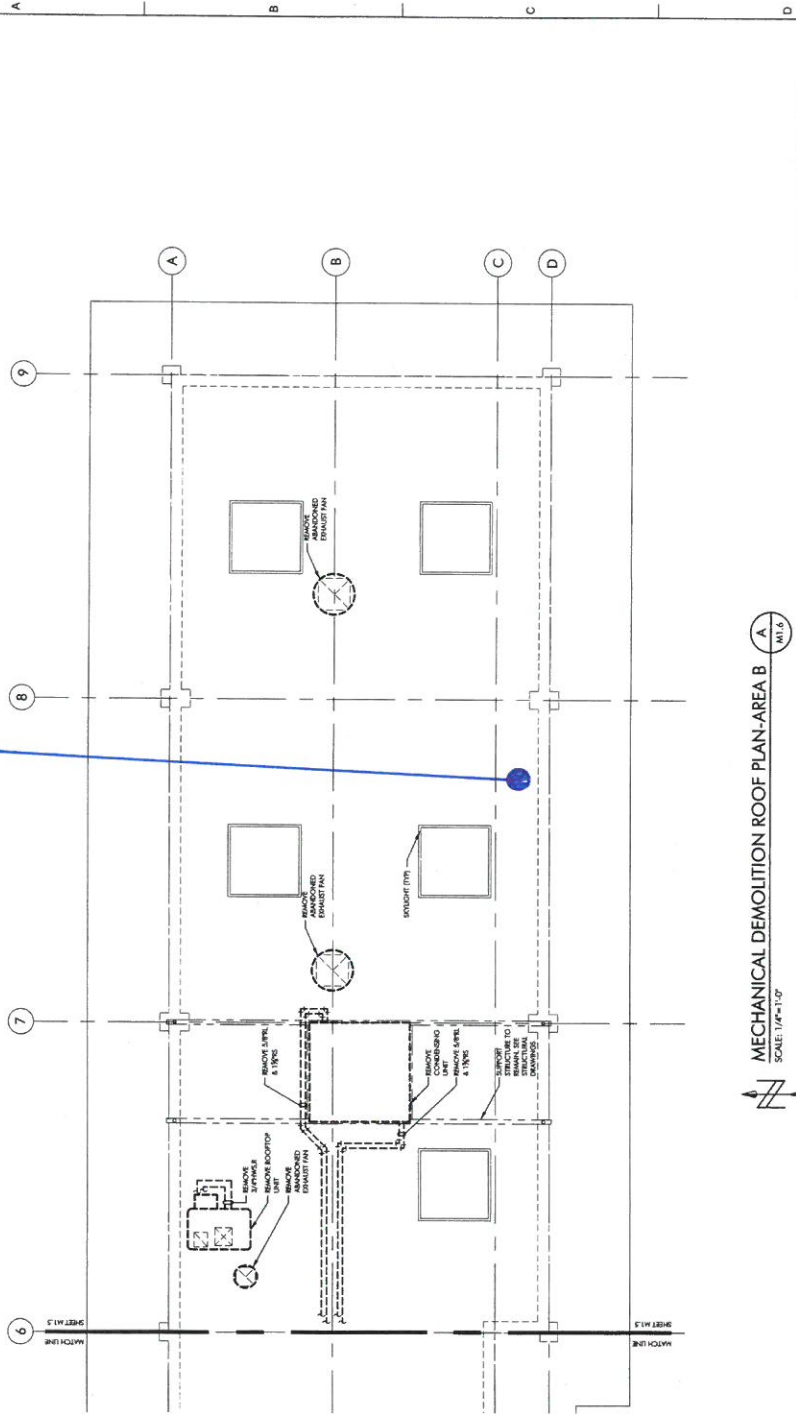
Inspectors: FRANK M. REYNOLDS III		Project Name: THURSE - MECHANICAL ROOFING PROJECT		Project Number: 17-23117-01		Date Sampled: 2/6/17	
Contact: SAME		Project Location: LAB & ELECTRICAL BUILDING		Analysis Type: <input checked="" type="radio"/> Asbestos <input type="radio"/> Lead <input type="radio"/> Other		Instructions: Bulk <input checked="" type="radio"/> Bulk <input type="radio"/>	
Phone #: (775) 856-3833		Client/Contact: MR. ROY CARROLL		Verbal: _____		Test to First Positive: Yes _____ No _____	
Turn-A-Round Time: (Circle) RUSH		24 Hours _____ 2 Days _____		Requested: _____		Fax _____	

LAB #	SAMPLE #	MATERIAL DESCRIPTION	SAMPLE LOCATION	LOCATIONS OF MATERIAL	QNTY	COND	FRIABLE YES/NO	COMMENTS (DEBRIS, EXTENT OF DAMAGE)	ASBESTOS %
238130	R-01	PENETRATION MASTIC	LAB BUILDING - EAST ROOF SOUTH EAST AREA	TYPICAL TO THIS ROOF (EAST SIDE)	~ 5,200 SF	G	N		N.D.
238131	R-02	ROOFING MATERIAL	LAB BUILDING - EAST ROOF NORTHWEST AREA			G	N		N.D.
238132	R-03	PENETRATION MASTIC	LAB BUILDING - WEST ROOF WEST SIDE	TYPICAL TO THIS ROOF (WEST SIDE)	~ 2,600 SF	G	N		40-65 Chy Roofing
238133	R-04	ROOFING MATERIAL	LAB BUILDING - WEST ROOF NORTHWEST AREA			G	N		40-60 Chy Roofing
238134	R-05	ROOFING MATERIAL	ELECTRICAL BUILDING NORTHWEST AREA	TYPICAL TO THIS ROOF	~ 2,300 SF	G	N		N.D.
238135	R-06	ROOFING MATERIAL	ELECTRICAL BUILDING EAST SIDE NORTH			G	N		N.D.
8									
9									
10									

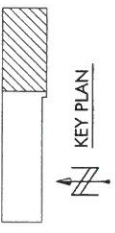
MATERIAL	CONDITION	UNITS	ASBESTOS %
VT - Vinyl Tile M - Mastic CBM - Cove Base Mastic AT - Acoustic Tile SA - Spray Acoustic W - Wall P - Plaster	G - Good (No Maintenance is required currently) D - Damaged (Some repair needed) SD - Significantly Damaged (Repair or replace ASAP)	LF - Linear Feet SF - Square Feet CF - Cubic Feet	A - Amosite Asbestos C - Chrysotile Asbestos NDA - No Asbestos Detected Assumed ACM - No Samples Taken

Relinquished By: _____	Relinquished By: _____
Date/Time: _____	Date/Time: _____
Received By: _____	Received By: _____

R-01



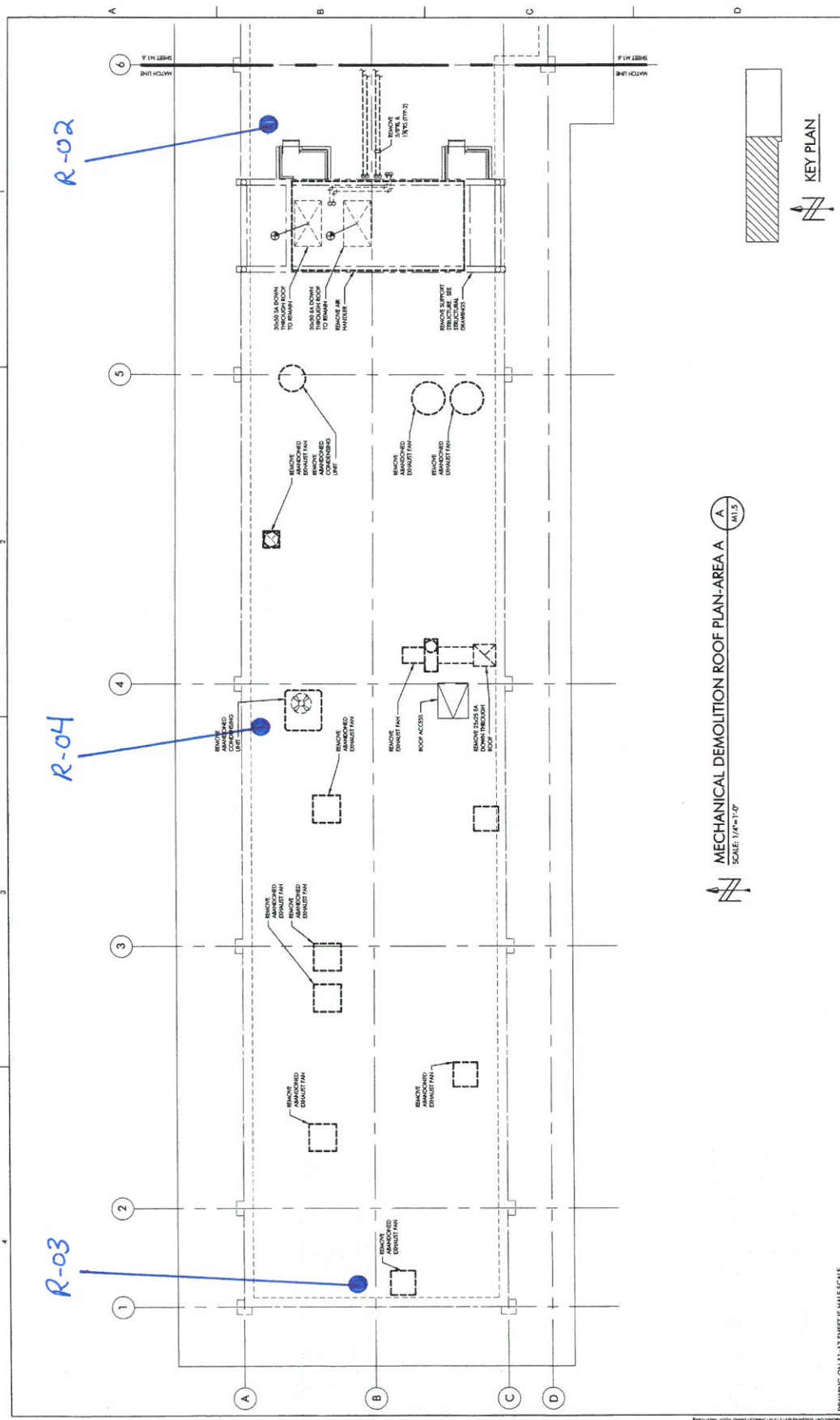
MECHANICAL DEMOLITION ROOF PLAN-AREA B
SCALE: 1/8"=1'-0"



DRAWING ON 11x17 SHEET IS HALF SCALE

PERMIT AND BID
SUBMITTAL

DESIGNED: _____ DRAWN: CMC CHECKED: _____ DATE: _____		APPROVED: _____ DATE: 5/20/2016		DESCRIPTION: _____ BY: _____ DATE: _____ BY: _____ DATE: _____	
CITY OF RENO PUBLIC WORKS DEPARTMENT TIAWRF LABORATORY HVAC REPLACEMENT MECHANICAL DEMOLITION ROOF AREA B PLAN		TRUCKEE MEADOWS WATER REPLENISHMENT FACILITY		RENO SULLY CREEK PLANE PHONE: (775) 864-1819 FAX: (775) 864-1819 WEBSITE: CDRSOL.COM	
VERIFY SCALES HAS ONE BEYOND ORIGINAL DRAWING 0		CITY NO. 097215		DRAWING NO. M1.6	
IF FACT ONE NOT ON THIS SHEET, VERIFY SCALES ACCORDINGLY		SHEET NO. 12 OF 47		PROJECT NO. 10/3	



MECHANICAL DEMOLITION ROOF PLAN-AREA A
 SCALE: 1/4"=1'-0"
 A 1/3

KEY PLAN

PROJECT NO.	097215
DRAWING NO.	M1.5
SHEET NO.	11 OF 47

VERIFY SCALES
 AS SHOWN ON ORIGINAL DRAWING
 0 1" = 10'-0"

CITY OF RENO PUBLIC WORKS DEPARTMENT
 TMRRE LABORATORY HVAC REPLACEMENT
 MECHANICAL DEMOLITION ROOF AREA A PLAN

TRUCKEE MEADOWS
 WATER RETENTION FACILITY

RENO

564 LONGST LANE
 RENO, NV 89505
 PHONE: (775) 834-1919
 FAX: (775) 834-1918
 WEB: CIPRO.COM

REGISTERED PROFESSIONAL ENGINEER
 STATE OF NEVADA
 LICENSE NO. 13347
 EXPIRES 12-31-17
 BRUCE W. HARRIS

REV	DATE	BY	DESCRIPTION

PERMIT AND BID SUBMITTAL

DRAWING ON 11x17 SHEET (5/8" SCALE)

2 of 3

BY _____ DATE _____

CLIENT APPLIED MECHANICAL INC

SHEET NO. 3 OF 3

CHKD. BY _____ DATE _____

PROJECT NO. _____

PROJECT TMWRF - MECHANICAL ROOFING PROJECT

8500 CUBAN WATER WAY



ELECTRICAL EQUIPMENT BUILDING



THIS DRAWING IS FOR
SAMPLE LOCATION ONLY.
NOT TO SCALE.

Forms

(to be used following award of bid)

- 1) Contract Form**
- 2) Performance Bond**
- 3) Payment Bond**



PROJECT TITLE

BID #

PWP#

THIS CONTRACT made and entered into on this ____ day of MONTH, 20____, by and between the City of Sparks, Nevada, a municipal corporation, existing under and by virtue of the laws of the State of Nevada, hereinafter called "City", and **CONTRACTOR**, a qualified Contractor in the class of work required, hereinafter called "Contractor".

W I T N E S E T H

WHEREAS, the City has awarded a contract to Contractor for providing material and/or performing the work hereinafter mentioned in accordance with the proposal of said Contractor;

WHEREAS, the Contractor will provide the material and/or perform the work for the compensation stated in said proposal, an amount which has been arrived at between the parties;

WHEREAS, each party is willing to and does assume joint liability for the contents of this Contract, and each party accordingly agrees that it shall not be construed against any party as a drafting party;

NOW, THEREFORE, IT IS AGREED as follows:

1. Scope of Work:

The scope of work for this contract is generally defined as **TITLE**. The City's Contract Documents and Contractor's Entire Proposal are on file with the City of Sparks. All terms, conditions and requirements contained within these Documents, including any and all bid documents, addenda and specifications issued by the City, are hereby incorporated by reference into this Contract.

The Contractor shall perform within the time stipulated, the Contract as herein defined and shall provide and furnish any and all of the labor, materials, methods or processes, equipment implements, tools, machinery and equipment, and all utility, transportation and other services required to construct, install and put in complete order for use in a good and workmanlike manner all of the work covered by the Contract in connection with strict accordance with the plans and specifications therein, which were approved by said City and are on file with the City, including any and all addenda issued by the City, and with the other contract documents hereinafter enumerated.

2. Payment for Project Services

As full consideration for the Services to be performed by Contractor, City agrees to pay Contractor as set forth in accordance with the bid and not to exceed fee of **COST** for the project.

A monthly progress payment in the amount of ninety-five percent (95%) of the value of the work completed may be made every thirty (30) days upon application by the Contractor and certification by the Project Manager that such work has been completed.



Partial payments will be made once each month as the work satisfactorily progresses and after acceptance by the authorized City representative. The progress estimates shall be based upon materials in place, or on the job site and invoiced, and labor expended thereon. From the total of the amount ascertained will be deducted an amount equivalent to five percent (5%) of the whole, which five percent (5%) will be retained by the City until after completion of the entire Contract in an acceptable manner. Any time after fifty percent (50%) of the value of the work has been completed, the City will make any of the remaining partial payments in full.

No such estimates or payments shall be required to be made, when, in the judgment of the City Project Manager, the work is not proceeding in accordance with the provision of the Contract, or when in his judgment the total value of the work done since last estimate amounts to less than Five Hundred Dollars (\$500.00).

The cost of materials conforming to the plans and specifications (materials being those which are required to be contained and incorporated in a finished contract bid item) delivered to the project and not at the time incorporated in the work, may also be included in the estimate for payment. No such estimate or payment shall be construed to be an acceptance of any defective work or improper material. The Contractor shall be responsible for, and shall not remove from the project any material that has been included in the estimate for payment.

Final payment shall be made upon the Project Manager certifying that the Contractor has satisfactorily completed the work in conformity with the Contract Documents.

3. Time for Completion:

The Contractor shall deliver the material and/or services called for in the specifications/proposal and within the delivery time specified and in accordance with the terms of the contract. Work shall be completed within _____ days from the Notice to Proceed issued by the City of Sparks Purchasing Division. The Contractor shall not alter or vary any terms or conditions contained or incorporated herein, including but not limited to, the quantity, price, delivery date or date designated as After Receipt of Order (ARO) or date for commencement or completion of services as mutually agreed upon, unless such alteration or variation is consented to in writing by a duly authorized representative of the City.

The City reserves the right to cancel resultant Contract upon ten days written notice in the event the type and quality of the product or work performance is unsatisfactory or in default, subject to Contractor's right to cure as outlined in termination clause.

This is a non-exclusive Contract and the City reserves the right to acquire the material and/or services at its discretion, from other sources during the term of this Contract.

4. No Unlawful Discrimination:

In connection with the performance of work under this Agreement, Contractor agrees not to discriminate against any employee or applicant because of race, creed, color, national origin, disability, sex, sexual orientation or age. Such agreement shall include, but not be limited to, the following: recruitment or recruitment advertising, rates or pay or other forms of compensation, and selection. Any violation of these provisions by Contractor shall constitute a material breach of contract.



In all cases where persons are employed in the construction of public works, preference must be given when the qualifications of the applicants are equal:

- A) First: To honorably discharged soldiers, sailors and marines of the United States who are citizens of the State of Nevada.
- B) Second: To other citizens of the State of Nevada

If the provisions of this section are not complied with by the contractor engaged on the public work, the contract is void, and any failure or refusal to comply with any of the provisions of this section renders any such contract void and subject to the exceptions contained in this section, no money may be paid out of the State Treasury or out of the treasury of any political subdivision of the State to any person employed on any work mentioned in this section unless there has been compliance with the provisions of this section. Any contractor engaged on a public work or any other person who violates any of the provisions of this section is guilty of a misdemeanor. The penalties provided for in this section do not apply where violations thereof are due to misrepresentations made by the employee or employees.

5. No Illegal Harassment:

Violation of the City's harassment policy, which is incorporated by reference and available from the Human Resource Division, by the Contractor, its officers, employees, agents, vendors, consultants, subcontractors and anyone from whom it is legally liable, while performing or failing to perform Contractor's duties under this Contract shall be considered a material breach of contract.

6. 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.

7. Preferences (This Section IS IS NOT Applicable to this contract):

To the extent Contractor has sought and qualified for a bidding preference and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, Contractor acknowledges and agrees that the following requirements will be adhered to, documented and attained for the duration of the Project:

- 1. At least 50 percent of the workers employed on the Project (including subcontractors) hold a valid driver's license or identification card issued by the Nevada Department of Motor Vehicles;
- 2. All vehicles used primarily for the public work will be (a) registered and (where applicable) partially apportioned to Nevada; or (b) registered in Nevada; and
- 3. The Contractor shall maintain and make available for inspection within Nevada all payroll records related to the Project.

Contractor recognizes and accepts that failure to comply with any requirements herein shall be a material breach of the contract and entitle the City of Sparks to liquidated damages in the amount set by statute. In addition, the Contractor recognizes and accepts that failure to comply with any



requirements herein may lose its certification for a preference in bidding and/or its ability to bid on any contracts for public works pursuant to NRS Chapter 338.

To the extent Contractor has sought and qualified for a bidding preference and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, each contract between the contractor, applicant or design-build team and a subcontractor must provide for the apportionment of liquidated damages assessed pursuant to this section if a person other than the Contractor was responsible for the breach of a contract for a public work caused by a failure to comply with a requirement of Items 1-5 within this section. The apportionment of liquidated damages must be in proportion to the responsibility of each party for the breach.

8. Prevailing Wages:

The Contractor and subcontractors shall be bound by and comply with all federal, state and local laws with regard to minimum wages, overtime work, hiring and discrimination, including Chapter 338 of the NRS, which is entitled, "Public Works Projects."

The Contractor shall ensure that all employees on the work site are paid in accordance with the **CURRENT PREVAILING WAGE RATES AS APPROVED BY THE STATE LABOR COMMISSIONER**, whenever the actual value of the Contract totals Two Hundred Fifty Thousand Dollars (\$250,000) or more, or when required by the Supplementary Conditions. If a Change Order causes a Contract to exceed Two Hundred Fifty Thousand Dollars (\$250,000), the State Labor Commissioner may audit the entire Contract period.

Questions involving the Prevailing Wage Rates for the City of Sparks should be referred to the Labor Commissioner, State of Nevada, at (775) 687-4850.

When federal money is associated with the project making the Contract subject to both state and federal wage rates, the Contractor shall not pay less than the higher rate when the two rates differ for similar kinds of labor.

The Remainder of this Section (Section 8) IS IS NOT Applicable to this contract):

- A. Posting of Minimum Wage Rates - In accordance with NRS, Chapter 338, Section 338.020, the Contractor shall post the hourly and daily rate of wages to be paid to each of the classes of mechanics and workers on the site of Work of this Contract in a place generally visible to the workers.
- B. Pursuant to NRS 338.060 and 338.070, the Contractor hereby agrees to forfeit, as a penalty to the City of Sparks, not less than Twenty Dollars (\$20) nor more than Fifty Dollars (\$50) for each calendar day or portion thereof that each worker employed on the Contract is paid less than the designated rate for any work done under the Contract, by the Contractor or any subcontractor under him, or is not reported to the City of Sparks as required by NRS 338.070.
- C. The contractor and each subcontractor shall keep or cause to be kept an accurate record showing, for each worker employed by the contractor or subcontractor:



-
- (1) The name of the worker;
 - (2) The occupation of the worker;
 - (3) If the worker has a driver's license or identification card, an indication of the state or other jurisdiction that issued the license or card; and
 - (4) The actual per diem, wages and benefits paid to the worker.

In addition, the contractor and each subcontractor shall keep or cause to be kept an accurate record showing, for each worker employed by the contractor or subcontractor who has a driver's license or identification card:

- (1) The name of the worker;
- (2) The driver's license number or identification card number of the worker; and
- (3) The state or other jurisdiction that issued the license or card.

D. The records in Section C above must be open at all reasonable hours to the inspection of the City of Sparks, and its officers and agents. A copy of the each record for each calendar Month for the General Contractor and all Sub-Contractors must be submitted to the City of Sparks no later than 15 days after the end of each month for the previous months' wages.

9. Acceptance by the City:

It is expressly understood and agreed that all materials provided and/or work done by the Contractor shall be subject to inspection and acceptance by the City at its discretion, and that any progress inspections and approval by the City of any item or work shall not forfeit the right of the City to require the correction of faulty workmanship or material at any time during the course of the work, although previously approved by oversight. Nothing herein contained shall relieve the Contractor of the responsibility for proper construction and maintenance of the work, materials and equipment required under the terms of this Contract until all work has been completed and accepted by the City.

10. Waiver:

No waiver of any term, provision or condition of this Contract, whether by conduct or otherwise, in any one or more instances, shall be deemed to be nor shall it be construed as a further or continuing waiver of any such term, provision or condition of this Contract. No waiver shall be effective unless it is in writing and signed by the party making it.

11. Notices:

All notices required to be given in writing by this Contract shall be deemed to be received (i) upon delivery if personally delivered, or (ii) when receipt is signed for if mailed by certified or registered mail, postage prepaid, or by express delivery service or courier, when addressed as follows (or sent to such other address as a Party may specify in a notice to the others):

PURCHASING MANAGER
CITY OF SPARKS
431 PRATER WAY
PO BOX 857
SPARKS, NV 89432-0857

CONTRACTOR:



12. Arbitration:

Any and all disputes, controversies or claims arising under or in connection with this Contract, including without limitation, fraud in the inducement of this Contract, or the general validity or enforceability of this Contract, shall be governed by the laws of the State of Nevada without giving effect to conflicts of law principles, may be submitted to binding arbitration before one arbitrator, and shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association in a private manner in Washoe County, Nevada. This award shall be final and judgment may be entered upon it in any court having jurisdiction thereof. In reaching this final award, the arbitrator shall have no authority to change or modify any provision of this Contract. All other expenses of arbitration shall be borne equally by the parties. All fees, including legal fees, shall be borne by the party who incurred them. All costs of enforcement shall be borne by the losing party. Each party shall have the right to discovery in accordance with the Nevada Rules of Civil Procedure.

13. Jurisdiction and Venue:

In the event the arbitration award is challenged, any action or proceeding seeking to do so must be brought in the courts of the State of Nevada, County of Washoe, or if the party can acquire subject-matter jurisdiction, in the United States District Court for the District of Nevada in the City of Reno. Each of the parties consents to the personal jurisdiction of such courts (and of the appropriate appellate courts) in any such action or proceeding and waives any objection to venue laid therein. Process in any action or proceeding referred to in the preceding sentence may be served on either party by sending it certified mail to the respective addresses designated for notice.

14. Indemnification:

To the fullest extent permitted by law, upon award, Contractor shall hold harmless, indemnify, defend and protect City, its affiliates, officers, agents, employees, volunteers, successors and assigns (“Indemnified Parties”), and each of them from and against any and all claims, demands, causes of action, damages, costs, expenses, actual attorney’s fees, losses or liabilities, in law or in equity, of every kind and nature whatsoever (“Claims”) arising out of or related to any act or omission of Contractor, its employees, agents, representatives, or Subcontractors in any way related to the performance of work under this Agreement by Contractor, or to work performed by others under the direction or supervision of Contractor, including but not limited to:

1. Personal injury, including but not limited to bodily injury, emotional injury, sickness or disease, or death to persons;
2. Damage to property of anyone, including loss of use thereof;
3. Penalties from violation of any law or regulation caused by Contractor’s action or inaction;
4. Failure of Contractor to comply with the Insurance requirements established under this Agreement;
5. Any violation by Contractor of any law or regulation in any way related to the occupational safety and health of employees.

In determining the nature of the claim against City, the incident underlying the claim shall determine the nature of the claim, notwithstanding the form of the allegations against City.

If City’s personnel are involved in defending such actions, Contractor shall reimburse City for the time



and costs spent by such personnel at the rate charged City for such services by private professionals.

In cases of professional service agreements, requiring professional liability coverage:

If the insurer by which a Consultant is insured against professional liability does not so defend the City and applicable agents and/or staff, and the Consultant is adjudicated to be liable by a trier of fact, the City shall be entitled to reasonable attorney's fees and costs to be paid to the City by the Consultant in an amount which is proportionate to the liability of the of the Consultant.

Nothing in this contract shall be interpreted to waive nor does the City, by entering into this contract, waive any of the provisions found in Chapter 41 of the Nevada Revised Statutes.

15. Licenses and Permits:

The Contractor shall procure at his own expense all necessary licenses and permits and shall adhere to all the laws, regulations and ordinances applicable to the performance of this Contract.

All Contractors, Sub-Contractors and Suppliers doing business within the City of Sparks are required to obtain a current business license from the City of Sparks prior to commencement of this contract. Per Sparks Municipal Code Section 5.08.020A: "It is unlawful for any person to transact business in the City without first having obtained a license from the City to do so and without complying with all applicable provisions of this title and paying the fee therefore."

16. Insurance:

BIDDERS' ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT BIDDERS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF THE APPARENT LOW BIDDER FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT BIDDER MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Should work be required on City premises or within the public right-of-way, upon award of the contract, the bidder shall provide proof of insurance for the types of coverage, limits of insurance and other terms specified herein, prior to initiation of any services under City, Bid, Proposal or Contract. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks and shall meet the following minimum specifications:

Contractor shall at its own expense carry and maintain at all times the following insurance coverage and limits of insurance no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater. Contractor shall also cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified herein. All insurers must have AM Best rating not less than A-VII, and be acceptable to the City. Contractor shall furnish copies of certificates of insurance evidencing coverage for itself and for each subcontractor. Failure to maintain the required insurance may result in termination of this contract at City's option. If Contractor fails to maintain the insurance as set forth herein, City shall have the right, but not the obligation, to purchase said insurance



at Contractor’s expense.

Contractor shall provide proof of insurance for the lines of coverage, limits of insurance and other terms specified below prior to initiation of any services. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks. Contractor and any of its subcontractors shall carry and maintain coverage and limits no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater.

Applicable to this Contract	Insurance Type	Minimum Limit	Insurance Certificate	Additional Insured	Waiver of Subrogation
Yes	General Liability/Umbrella (Excess) Liability	\$2,000,000	✓	✓	✓
Yes	Automobile Liability	\$1,000,000	✓	✓	
Yes	Workers’ Compensation	Statutory	✓	N/A	✓
Yes	Employer’s Liability	\$1,000,000	✓	N/A	
No	Professional Liability	\$1,000,000	✓	N/A	N/A
No	Pollution Legal Liability	\$1,000,000	✓	N/A	N/A

Commercial General Liability

Contractor shall carry and maintain Commercial General Liability (CGL) and, if necessary to meet required limits of insurance, commercial umbrella/excess liability insurance with a total limit of not less than the limits specified herein.

For contracts that are for the construction or improvement of public facilities, the Contractor shall obtain and maintain products and completed operations liability coverage through the statute of repose after completion of the project.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, underground property damage, employment-related practices, or damage to the named insured’s work unless Subcontractor carries and maintains separate policies providing such coverage and provides Contractor evidence of insurance confirming the coverage.

Minimum Limits of Insurance

- \$2,000,000** Each Occurrence Limit for bodily injury and property damage
- \$2,000,000** General Aggregate Limit
- \$2,000,000** Products and Completed Operations Aggregate Limit
- \$10,000** Medical Expense Limit

If Commercial General Liability Insurance or other form with a general aggregate limit is used, it shall be



revised to apply separately to this PROJECT or LOCATION.

Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Commercial General Liability (CGL) "Occurrence" form CG 00 01 04/13 or substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds using the applicable ISO additional insured endorsement(s) or substitute forms providing equivalent coverage, in respects to damages and defense arising from: activities performed by or on behalf of Contractor, including the insured's general supervision of Contractor; products and completed operations of Contractor; premises owned, occupied, or used by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Any failure by the Contractor to comply with reporting provisions of the policies shall not affect its obligations to the additional insureds.

Primary and Non-Contributory

Contractor's insurance coverage shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to City, its officers, agents, employees, and volunteers. There shall be no endorsement or modification of the CGL to make it excess over other available insurance; alternatively, if the CGL states that it is excess or pro rata, the policy shall be endorsed to be primary with respect to the additional insured. Any insurance or self-insurance maintained by City, its officers, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it in any way.

Separation of Insureds

Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

Waiver of Subrogation

Contractor waives all rights against City and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. Insurer shall endorse CGL policy as required to waive subrogation against the City with respect to any loss paid under the policy.

Endorsements

A policy form or endorsement is required confirming coverage for all required additional insureds. The endorsement for CGL shall be at least as broad as the unmodified ISO additional insured endorsement CG 20 10 11/85 or substitute forms providing additional insured coverage for products and completed operations.



A waiver of subrogation in favor of City shall be endorsed to the policy using an unmodified Waiver of Transfer of Rights of Recovery of Others to Us ISO CG 24 04 05 09, or a substitute form providing equivalent coverage.

If any underground work will be performed, Contractor shall maintain electronic data liability insurance applicable to the Project and insuring against liability arising out of the loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate electronic data. This coverage shall be maintained with a limit of liability of not less than \$1,000,000 and provide coverage at least as broad as electronic data liability coverage form CG 04 37 (or substitute form providing equivalent coverage).

Business Automobile Liability

Minimum Limits of Insurance

\$1,000,000 Combined Single Limit per accident for bodily injury and property damage or the limit customarily carried by Contractor, whichever is greater. No aggregate limit may apply. Coverage may be combined with Excess/Umbrella Liability coverage to meet the required limit.

Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Business Automobile Coverage form CA 00 01 10/13, CA 00 25 10/13, CA 00 20 10/13 or substitute form providing equivalent coverage. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Pollution liability coverage at least as broad as that provided under the ISO pollution liability—broadened coverage for covered autos endorsement (CA 99 48) shall be provided, and the Motor Carrier Act endorsement (MCS 90) shall be attached for all contracts involving transportation of “hazardous material” as this term is defined by applicable law, including, but not limited to, waste, asbestos, fungi, bacteria and mold.

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds with respect to damages and defense arising from the ownership, maintenance or use of automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Endorsements

A policy endorsement is required listing all required additional insureds. The endorsement for Business Automobile Liability shall be at least as broad as the unmodified ISO CA 20 48 10/13 or a substitute form confirming City’s insured status for Liability Coverage under the Who Is An Insured Provision contained in Section II of the coverage form ISO CA 00 01 10/13.

Workers’ Compensation and Employer’s Liability

Contractor shall carry and maintain workers’ compensation and employer’s liability insurance as required



by NRS 616B.627 or provide proof that compliance with the provisions of Nevada Revised Statutes Chapters 616A-D and all other related chapters is not required. It is understood and agreed that there shall be no coverage provided for Contractor or any Subcontractor of the Contractor by the City. Contractor agrees, as a precondition to the performance of any work under this Agreement and as a precondition to any obligation of the City to make any payment under this Agreement to provide City with a certificate issued by an insurer in accordance with NRS 616B.627 and with a certificate of an insurer showing coverage pursuant to NRS 617.210.

It is further understood and agreed by and between City and Contractor that Contractor shall procure, pay for and maintain the above mentioned coverage at Contractor's sole cost and expense.

Should Contractor be self-funded for workers' compensation and employer's liability insurance, Contractor shall so notify City in writing prior to the signing of this Contract. City reserves the right to approve said retentions, and may request additional documentation, financial or otherwise, for review prior to the signing of this Contract.

Nevada law allows the following to reject workers' compensation coverage if they do not use employees or subcontractors in the performance of work under the contract:

- Sole proprietors (NRS 616B.627 and NRS 617.210)
- Unpaid officers of quasi-public, private or nonprofit corporations (NRS 616B.624 and NRS 617.207)
- Unpaid managers of limited liability companies (NRS 616B.624 and NRS 617.207)
- An officer or manager of a corporation or limited liability company who owns the corporation or company (NRS 616B.624 and NRS 617.207)

If a contractor has rejected workers' compensation coverage under applicable Nevada law, the contractor must indicate the basis for the rejection of coverage and complete, sign and have notarized an Affidavit of Rejection of Coverage. The Affidavit must be completed, signed and notarized prior to performance of any work.

Minimum Limits of Insurance

Workers' Compensation:	Statutory Limits
Employer's Liability:	\$1,000,000 Bodily Injury by Accident – Each Accident
	\$1,000,000 Bodily Injury by Disease – Each Employee
	\$1,000,000 Bodily Injury by Disease – Policy Limit

Coverage Form

Coverage shall be at least as broad as the unmodified National Council on Compensation Insurance (NCCI) Workers Compensation and Employer's Liability coverage form WC 00 00 07/11 or substitute form providing equivalent coverage.

OTHER INSURANCE COVERAGES (IF APPLICABLE)

Professional Liability Insurance (if Applicable) \$1,000,000 per occurrence limits of liability or whatever limit is customarily carried by the Contractor, whichever is greater, for design, design-build



or any type of professional services with a minimum of three (3) years reporting of claims following completion of the project.

Contractors Pollution Liability Insurance (If Applicable)- \$1,000,000 per occurrence and \$2,000,000 aggregate or whatever amount is acceptable to the City for any exposure to “hazardous materials” as this term is defined in applicable law, including but not limited to waste, asbestos, fungi, bacterial or mold.

Lower tier sub-subcontractors, Truckers, Suppliers: Evidence confirming lower tier subcontractors, truckers and suppliers are maintaining valid insurance prior to beginning work on the project to meet the requirements set forth herein on Subcontractor, including but not limited to all additional insured requirements of Subcontractor.

ALL COVERAGES

Coverage shall not be suspended, voided, canceled, or non-renewed by either CONTRACTOR or by the insurer, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to CITY except for ten (10) days' notice for nonpayment of premium.

OTHER INSURANCE PROVISIONS

Should City and Contractor agree that higher coverage limits are needed warranting a project policy, project coverage shall be purchased and the premium for limits exceeding the above amount may be borne by City. City retains the option to purchase project insurance through Contractor's insurer or its own source.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, agents, employees, or volunteers.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with a Best's rating of no less than A-VII and acceptable to the City. City, with the approval of the Risk Manager, may accept coverage with carriers having lower Best's ratings upon review of financial information concerning Contractor and insurance carrier. City reserves the right to require that Contractor's insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted list.

VERIFICATION OF COVERAGE

Contractor shall furnish City with certificates of insurance and with original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

Prior to the start of any Work, Contractor must provide the following documents to City of Sparks, Attention: Purchasing Division, P.O. Box 857, Sparks, NV 89432-0857:

- A. Certificate of Insurance.** Contractor must provide a Certificate of Insurance form to the City of Sparks to evidence the insurance policies and coverage required of Contractor.



B. Additional Insured Endorsements. An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to the City of Sparks, by attachment to the Certificate of Insurance, to evidence the endorsement of the City of Sparks as additional insured.

C. Policy Cancellation Endorsement. Except for ten (10) days' notice for non-payment of premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to the City of Sparks, the policy shall not be suspended, voided, cancelled or non-renewed, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance.

D. Bonds (as Applicable). Bonds as required and/or defined in the original bid documents.

All certificates and endorsements are to be addressed to the City of Sparks, Purchasing Division and be received and approved by City before work commences. The City reserves the right to require complete certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Contractor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all of the requirements stated herein.

MISCELLANEOUS CONDITIONS

1. Contractor shall be responsible for and remedy all damage or loss to any property, including property of City, caused in whole or in part by Contractor, any Subcontractor, or anyone employed, directed, or supervised by Contractor.
2. Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any Subcontractors under it.
3. In addition to any other remedies City may have if Contractor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option:
 - a. Purchase such insurance to cover any risk for which City may be liable through the operations of Contractor under this Agreement and deduct or retain the amount of the premiums for such insurance from any sums due under the Agreement;
 - b. Order Contractor to stop work under this Agreement and/or withhold any payments which become due Contractor here under until Contractor demonstrates compliance with the requirements hereof; or,
 - c. Terminate the Agreement.

17. Liquidated Damages:

If the Product is not delivered/Project is not completed within the time stipulated in the bid, the Contractor shall pay to the City of Sparks as fixed, agreed and liquidated damages for delay and not as a penalty (it



being impossible to determine the actual damages occasioned by the delay) \$_____ for each _____ day of delay until delivery is completed; the Contractor shall be liable to the City of Sparks for the amount herein. This amount may be deducted from money due or to become due to the Contractor as compensation under this proposal in the event the Contractor fails to meet delivery schedules or product specifications.

18. Material Breach of Contract:

In the event Contractor fails to deliver the product and services as contracted for herein, to the satisfaction of the City of Sparks or otherwise fails to perform any provisions of this Contract, the City, after providing five (5) days written notice and Contractor's failure to cure such breach within the time specified in the notice, may without waiving any other remedy, make good the deficiencies and deduct the actual cost of providing alternative products and/or services from payment due the Contractor. Non-performance after the first notice of non-performance shall be considered a material breach of contract.

19. Force Majeure:

Neither party to the Contract shall be held responsible for delay or default caused by fire, riot, acts of God, and/or war which is beyond that party's reasonable control. City may terminate the Contract upon written notice after determining such delay or default will reasonably prevent successful performance of the Contract.

20. Termination:

The City may terminate the Contract for material breach of contract upon ten (10) days written notice and recover all damages, deducting any amount still due the Contractor from damages owed to the City, or seek other remedy including action against all bonds. The Contractor may terminate the Contract for material breach of contract upon thirty (30) days written notice to the City.

21. Assignment:

All of the terms, conditions and provisions of this Contract, and any amendments thereto, shall inure to the benefit of and be binding upon the parties hereto, and their respective successors and assigns. The Contractor shall not assign this Contract without the written consent of the City which will not be unreasonably withheld.

22. Entire Contract:

This Contract constitutes the entire agreement of the parties and shall supersede all prior offers, negotiations, agreements and contracts whether written or oral. Any modifications to the terms and conditions of this Contract must be in writing and signed by both parties.

23. Severability:

If any part of this Contract is found to be void it will not affect the validity of the remaining terms of this Contract which will remain in full force and effect.

24. Headings:

Paragraph titles or captions contained in this Contract are inserted only as a matter of convenience and for reference only, and in no way define, limit, extend, or describe the scope of this Contract or the intent of any provision herein.



25. Singular Includes the Plural; Gender; Title Reference:

Whenever the singular number is used in this Contract and when required by the context, the same shall include the plural, and the use of any gender, be it masculine, feminine or neuter, shall include all of the genders, and the word “person” or “entity” shall include corporation, firm, partnership, or any other combination or association.

The use of the title “Bidder”, “Vendor”, “Contractor” or “Consultant” within this contract or associated bid documents shall be deemed interchangeable and shall refer to the person or entity with whom the City of Sparks is contracting for the service or product referenced within this contract.

26. Execution:

The parties agree to execute such additional documents and to take such additional actions as are reasonably necessary or desirable to carry out the purposes hereof. They also agree, acknowledge and represent that all corporate authorizations have been obtained for the execution of this Contract and for the compliance with each and every term hereof. Each undersigned officer, representative or employee represents that he or she has the authority to execute this Contract on behalf of the party for whom he or she is signing.

IN WITNESS WHEREOF, the City of Sparks has caused this Contract to be executed by its officers thereunto duly authorized and the Consultant has subscribed same, all on the day and year first above written.

(Vendor)

CITY OF SPARKS, NEVADA
A Municipal Corporation

By: _____

By: _____
Geno R. Martini, Mayor

(Title)

APPROVED AS TO FORM

ATTEST:

City Attorney

Teresa Gardner, City Clerk

CITY OF SPARKS, NEVADA - BOND OF FAITHFUL PERFORMANCE

Bid #: _____

Bond #: _____

Surety Rating: _____

NV License #: _____

Appt. Agent Countersigning - List below with address

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the City of Sparks in the State of Nevada has awarded to **(CONTRACTOR NAME)** hereinafter designated as the "Principal" a contract for Bid # **BID NUMBER**, PWP # **PWP NUMBER**, for the **PROJECT TITLE** and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful 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;

NOW, THEREFORE, we the Principal and _____ as Surety, are held and firmly bound unto the City of Sparks in the State of Nevada, in the penal sum of **(WRITTEN COST)** dollars (\$_____), lawful money of the United States, being not less than one hundred percent (100%) of the estimated contract cost of the work, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bound Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions and agreements in the said contract and any alterations made as therein provided on his or their part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City of Sparks in the State of Nevada, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said contract, the above obligation shall hold good for a period of one (1) year after the completion and acceptance of the said work, during which time, if the above bounden principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the said City of Sparks in the State of Nevada from loss or damage made evident during said period of one (1) year from the date of acceptance of said works, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the obligation in the said sum of **(WRITTEN COST)** dollars (\$_____) shall remain in full force and virtue; otherwise the above obligation shall be void.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in anyway effect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract, to the work or to the specifications.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this ____ day of _____, 20__, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

By _____

Surety
By _____

CITY OF SPARKS, NEVADA – Payment Bond – Labor & Materials

Bid #: _____

Bond #: _____

Surety Rating: _____

NV License #: _____

Appt. Agent Countersigning - List below with address

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the City of Sparks in the State of Nevada, has awarded to **CONTRACTOR**, hereinafter designated as the "Principal" a Contract for Bid # **BID NUMBER**, PWP # **PWP NUMBER**, for the **PROJECT TITLE** and

WHEREAS, said Principal is required under the terms of said contract to furnish a Bond for the faithful 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;

NOW, THEREFORE, we, the Principal, and _____ as Surety, are held and firmly bound unto the City of Sparks in the State of Nevada, in the penal sum of **WRITTEN AMOUNT** dollars (\$_____), lawful money of the United States, being not less than one hundred percent (100%) of the estimated contract cost of the work for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally firmly by these presents.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounden principal, his or its heirs, executors, administrators, successors, or assigns, shall fail to pay for any materials, provisions, provender or other supplies, implements, or machinery used in, upon, for, or about the performance of the work contracted to be done or for any work or labor thereon of any kind, or for amounts due under the Unemployment Compensation Law with respect to such work or labor as required by the provisions of NRS 612, and provided that the claimant shall have complied with the provisions of said law, the Surety hereon will pay for the same within thirty (30) calendar days an amount not exceeding the sum specified in this bond, then the above obligation shall be null and void; otherwise to remain in full force and account. In case suit is brought upon this bond, the said Surety agrees to pay a reasonable attorney's fees to be fixed by the Court.

The Bond shall insure to the benefit of any and all persons, companies and corporations entitled to file claims under NRS 339 as to give a right of action to them or their assigns in any suit brought upon this Bond.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this ____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

By _____

Surety

By _____