Washoe County School District

Project Title:
Mechanical Upgrades at Jerry Whitehead Elementary School

Bid #:
25-111-B-05-DA

Date:
May 21, 2025

Prepared By:
Purchasing Department
14101 Old Virginia Road, Room 0
Reno, NV 89521
Phone: (775) 850-8025
Fax: (775) 857-3175
E-Mail: solicitations@washoeschools.net

SECTION 00090 - NOTICE TO CONTRACTORS

Sealed bids for the **Mechanical Upgrades at Jerry Whitehead Elementary School** will be received by the Washoe County School District's (WCSD) Purchasing Department located at the Brown Center 14101 Old Virginia Road, Room #0, Reno, NV 89521, **until 2:00 p.m., (Local Time) on June 20, 2025**. The bids will be opened publicly via a TEAMS Meeting at **2:30 pm (local time).**

Join the meeting now
Meeting ID: 296 400 096 691 2
Passcode: Ed7Pb6Ud

Scope of Work: New air-conditioning system school-wide including new mechanical building and equipment enclosure.

New equipment includes but is not limited to: Chiller, pumps, plumbing, unit ventilators, package units, electrical and other associated work.

Additional work includes demolition and building repairs of existing systems including but not limited to: Classroom unit ventilators, roof top evaporative coolers, evaporative cooler penthouses, roof top package units, curbs, selective roof demolition, associated ductwork, plumbing, and electrical, and other associated work.

Contractors desiring to bid on this work shall be contractors presently licensed by the Nevada State Contractors Board and shall maintain a valid Contractor's License for the duration of the construction project. In addition, any and all Subcontractors that will be utilized by the Contractor shall also be presently licensed by the Nevada State Contractors Board and shall maintain a valid license for the duration of the construction project. All licensing requirements as specified in Nevada Revised Statutes (NRS) Chapter 624 shall also be strictly adhered to. Contractors shall also carry and provide evidence of required insurance liability coverage as specified in the Liability Insurance Specifications, as identified in Section 00800 – SUPPLEMENTARY GENERAL CONDITIONS.

***NOTE:* The Facilitating Buyer for this solicitation is named below. Interested parties may NOT contact anyone else regarding this solicitation. Any interested Bidder contacting any other individual including, but not limited to, WCSD staff, officials, evaluation committee members, or Board of Trustees may have their Bid submission rejected from evaluation and award consideration.**

Plans and specifications are available to view and download at WCSD's Purchasing Department website at http://solicitations.washoeschools.net/.

There will be a MANDATORY Pre-Bid Meeting held at 3:00 p.m. on June 4, 2025, at Jerry Whitehead Elementary School (Meet In Front Of The Office) 3570 Waterfall Drive. Due to access and coordination involved in this project we highly recommend that contractors walk the project site that we are making available.

The physical work is to be commenced as phased in the Special Notifications. Work shall be completed on or before August 1, 2026.

Bid #: 25-111-B-05-DA
PWP #: WA-2024-378

Facilitating Buyer: Dawn Allshouse
Email: solicitations@washoeschools.net

To be published in the Reno Gazette Journal on May 21, 2025.

Washoe County School District
Purchasing Department
14101 Old Virginia Road, Room #0
Reno, NV 89521

Phone: 775-850-8025
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Email: solicitations@washoeschools.net

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SECTION 00100 - INSTRUCTION TO BIDDERS

Bids must be submitted in accordance with the following instructions to be considered for review and award.

Bids shall be submitted on the provided Bid Form (PUR-F523) only, and all of the blank spaces shall be completed; numbers shall be stated both in writing and in figures, the signature shall be in longhand; and the completed form shall be without interlineation, alteration or erasure. **Any bid submission will be disqualified and rejected if the bid submission is not signed.**

Washoe County School District only accepts signatures done manually (also known as a wet signature) or electronic digital signatures that are certified. Non-certified electronic digital signatures will NOT be accepted. A typed signature, even in cursive font, DOES NOT meet the requirements of an official digital signature. A digital signature must be accompanied by a certified digital stamp issued through programs like Adobe Acrobat, Docu-Sign or other similar programs that produce a digital stamp certifying the electronic digital signature. Any signatures on required forms that do not meet these requirements will not be accepted and the Contractor's submission will be deemed "Non-Responsive" and will be rejected. If you have any questions about this requirement, please submit your question by the question deadline, so that it can be answered prior to the bid submission deadline.

In the event of a discrepancy on the Bid Form, NRS 104.3114 Contradictory terms of instrument states that, "If an instrument contains contradictory terms, typewritten terms prevail over printed terms, handwritten terms prevail over both, and words prevail over numbers." No additional pages containing inclusions, exclusions or clarifications will be accepted as part of the bid. Any clarifications, additions or exclusions made by the Washoe County School District (WCSD – OWNER) will be considered incorporated into the specifications.

The Contractor is responsible for ensuring he/she has received and reviewed the entire bid package, including all specifications, plans and any/all issued Addendums.

Bids shall be addressed to the WCSD and delivered to the office of the Purchasing Department, located at the Brown Center, 14101 Old Virginia Road, Room #0, Reno, Nevada 89521**, until 2:00 p.m., (Local Time) on June 20, 2025**. Bids shall be delivered sealed in an opaque envelope. The outside of the envelope shall be clearly marked to indicate the bid for the proposed work and directed to the Purchasing Department. The bids will be opened publicly via a TEAMS Meeting at 2:30 pm.

Each individual bid shall be accompanied by a surety company issued Bid Bond or by a Certified or Cashier's Check made payable to the *Washoe County School District*, in the amount of not less than five percent (5%) of the bid, said amount to be forfeited to WCSD, should the Contractor to whom the Contract is awarded fail to enter into the Contract in accordance with the Contractor's bid and any other contract documents and furnish the required bonds within ten (10) days after the delivery of notice of such award. Bid Bonds, upon request, or deposits of the unsuccessful bidders will be returned upon signing of Contract, or within forty-five (45) days from bid date, whichever is earlier.

Contractors desiring to bid on this work shall be Contractors presently licensed by the Nevada State Contractors Board and shall maintain a valid Contractor's license for the duration of the construction project. In addition, any and all Subcontractors that will be utilized by the Contractor shall also be presently licensed by the Nevada State Contractors Board and shall maintain a valid license for the duration of the construction project. All licensing requirements as specified in NRS Chapter 624 shall also be strictly adhered to.

WCSD requires that all Contractors who work on construction projects have in place a Drug and Alcohol Policy and this shall be acknowledged by signature on the Bid Form (PUR-F523).

The physical work is to be commenced as phased in the Special Notifications. Work shall be completed on or before August 1, 2026.

Contractor must agree that Owner may retain from the monies due the Contractor Two Thousand Five Hundred Dollars ($2,500) per day (Liquidated Damages) as a direct result of the Contractor's delay or for not completing the project in the required time allowance plus approved time extensions.

The right is reserved by WCSD to reject any and all bids or accept the bid, which is deemed by WCSD to be in the best interest of the school district. WCSD also reserves the right to waive any irregularities and/or informalities in the submitted bids.

Should a Contractor find discrepancies in, or omissions from, the drawings or documents, or should he/she be in doubt as to the meanings of said documents, he/she should immediately notify the Owner in writing via Email to solicitations@washoeschools.net, whereas the Owner will send written instruction via Addendum to all Contractors. The Owner, Architect/Engineer, Project Manager, Assistant Project Manager, or any other WCSD staff member will not be held responsible for any oral instructions provided during the bid submission process.

Before submitting a bid, Contractors shall carefully examine the scope of work outlined in the bid package and the proposed drawings, specifications, and forms and shall be thoroughly familiar with all existing conditions and expectations of a successful project completion.

No increase in cost or extension in performance time will be considered for failure to know the conditions to be encountered as to the character, quality, and quantity of the work to be performed, and materials to be furnished, and as to the requirements of the specifications.

No increase in cost or extension in performance time will be considered for material escalation. Section 01027 – Applications for Payment, Part 1, Subpart 1.3, Schedule of Values; B,5 of the contract documents provides a provision for the storage of materials, off-site if necessary, to help in managing the project costs and to hedge against potential future material price increases.

A 5% list showing all Subcontractors to be used on the project shall be submitted with the bid followed by a 1% list within 2 hours from the completion of the bid opening, as required

by Nevada Revised Statutes. WCSD also requires a Comprehensive Contractor/Subcontractor list showing all remaining subcontractors to be utilized on the project. All subcontractors shall be licensed as required by Nevada Revised Statutes.

Any Addendums issued during the bid solicitation process shall be acknowledged on the Bid Form (PUR-F523) and in the execution of a contract, Addendums will become a part thereof.

All questions shall be submitted in writing directly to WCSD's Solicitations website at http://solicitations.washoeschools.net/ or via e-mail to solicitations@washoeschools.net by **4:30 p.m. (Local Time) on June 11, 2025.** During this active solicitation there shall be no personal contact with any WCSD employees or other parties associated with this project directly. All inquiries shall be done in writing as stated above.

Addendums will be distributed by WCSD accordingly and can also be accessed via the WCSD Public Works website at: **http://solicitations.washoeschools.net/**

Modifications to bids may only be considered if submitted bids by delivery as previously noted have already been received and said modifications are completed prior to the due date and time for the bid submission.

Bids may be withdrawn in a written request received from a Contractor prior to the time fixed for opening of bids.

In cases where the award of the project has not been made, bids submitted and opened may not be withdrawn for a period of forty-five (45) calendar days from the due date and time of the bid.

A person who bids on this work may file a notice of protest regarding the awarding of the contract with the WCSD's Purchasing Department's Director of Procurement and Contracts within five (5) business days after the date the recommendation to award a contract is issued. The notice of protest must be submitted in accordance with NRS Chapter 338.142. Detailed specifications can be found in Section 00820 – Special Conditions, subsection 14.0 – Appeal by Unsuccessful Bidder.

A person filing a notice of protest in accordance with NRS Chapter 338.142 will be required to post a bond or other security in the amount of twenty-five (25%) percent of the value of the total bid or two hundred fifty thousand ($250,000) dollars, whichever is less. If the protest cannot be resolved by the WCSD's Director of Procurement and Contracts, it will be presented to the WCSD Board of Trustees at a regular meeting.

Contractors to be considered as a Preferential Bidder must submit the Certificate of Eligibility for Preferential Status issued by State of Nevada Contractors Board with their bid submission and the Preferential Bidder Status Affidavit must be provided within two (2) hours after the bid opening, although WCSD prefers the affidavit to also be submitted with the bid at the time of opening.

SPECIAL NOTIFICATIONS

Signature Requirements

Any bid submission will be disqualified and rejected if the bid submission is not signed.

Washoe County School District only accepts signatures done manually (also known as a wet signature) or electronic digital signatures that are certified. Non-certified electronic digital signatures will NOT be accepted. A typed signature, even in cursive font, DOES NOT meet the requirements of an official digital signature. A digital signature must be accompanied by a certified digital stamp issued through programs like Adobe Acrobat, Docu-Sign or other similar programs that produce a digital stamp certifying the electronic digital signature. Any signatures on required forms that do not meet these requirements will not be accepted and the Contractor's submission will be deemed "Non-Responsive" and will be rejected. If you have any questions about this requirement, please submit your question by the question deadline, so that it can be answered prior to the bid submission deadline.

Preferential Bidders

Contractors to be considered as a Preferential Bidder must submit the Certificate of Eligibility for Preferential Status issued by State of Nevada Contractors Board with their bid submission and the Preferential Bidder Status Affidavit must be provided within two (2) hours after the bid opening, although WCSD prefers the affidavit to also be submitted with the bid at the time of opening. Preferential Bidder Status shall be considered if the amount of the apparent low bid is $250,000 or greater per NRS Chapter 338.1389.

Specifications/Addendums

Contractor is responsible to ensure that he/she has received and reviewed the entire bid package, including specifications, plans and any/all issued Addendums. Contractors shall acknowledge by signing any issued Addendum(s) and returning the signed Addendums with his/her bid submission.

Technical Specifications

Any conflicts between the Architect and WCSD specification, it will be the responsibility of the Contractor to seek clarification for any conflicts or be responsible for all the requirements. Clarifications and questions must be submitted in writing via email to: solicitations@washoeschools.net

Washoe County School District Structured Cabling Standard – WCSD-SCS-015

The Washoe County School District Structured Cabling Standard – WCSD-SCS-015 dated March 13, 2023 is located on our website. The link to view it is https://www.washoeschools.net/cms/lib/NV01912265/Centricity//Domain/70/ITPC%20Images/WCSD-SCS-015%203-10-23.pdf

Project Completion

The construction contract time allowed for this project is based on a reasonable expectation of how long it will take to do a project of this scope. WCSD recognizes that Contractors often try to finish projects in significantly less time than the construction contract time and, in such cases, develop schedules which are based on everything going smoothly with no delays. While WCSD allows Contractors to submit such accelerated

construction schedules, WCSD reserves the right to deny the Contractor's submission. Acceptance of a submittal with a shortened schedule is not an official agreement between WCSD and the Contractor that the project can be done in less time than the construction contract time specified.

Roof Penetrations

All roof-mounted equipment or penetrations associated with this project are to be flashed by a licensed roofing Contractor. The roofing Contractor shall have experience with the existing roofing membrane. New flashing materials shall be installed to comply with the membrane manufacturer's specifications or details published by the National Roofing Contractors Association Waterproofing Manual. In acceptance of the work, the Owner will make no allowance for lack of skill on the part of the Contractor. The Contractor shall coordinate all aspects of roof work including any penetrations to maintain the building in a totally watertight condition, no exceptions.

Hours

There is a potential that Summer School, Extended School Year (ESY), Intercession School, After School Care, Parent nights, etc. may be held at the project sites. The Contractor will be required to flex schedule and/or work areas to accommodate school needs during this time frame. In addition, the Contractor may have to alter their normal schedule in order to perform any lead and asbestos attachments and penetrations.

Pre-Bid Meeting Attendance

All Pre-Bid Meetings, whether mandatory or not, will require that all attendees sign in on the sign-in sheet provided. It is the Contractor's responsibility to ensure that he/she documents his/her attendance by signing the Pre-Bid Sign-In Sheet. Failure to do so could result in the Contractor's bid not being accepted by the WCSD, especially in the event of a Mandatory Pre-Bid Meeting.

Mandatory Pre-Bid Meetings require attendees, who intend to bid on the project and act as the Prime Contractor, to participate in the entire meeting including site walk. Attendance will be recorded at the beginning and at the conclusion of the site walk on the Pre-Bid Sign-In Sheet and then posted on the Solicitations website. Leaving prior to the conclusion of the site walk risks contractor's attendance being disqualified and struck from the sign-in sheet.

In addition, if a Pre-Bid Meeting is held on-site, especially a school site, it is the Contractor's responsibility to sign in/register presence on grounds with the site's Front Office. A signature on a school's office sign-in sheet will not take the place of signature on the Pre-Bid Sign-In Sheet, which will only be present at the actual meeting and distributed by the staff of the Purchasing Department and Capital Projects Department.

Questions

All questions shall be submitted in writing directly to WCSD's Solicitations website at http://solicitations.washoeschools.net/ or via e-mail to solicitations@washoeschools.net by 4:30 p.m. (Local Time) June 11, 2025.

Force Accounts

When applicable, the force account amount listed on the Bid Form (PUR-F523) shall be used for changes in the work at the Owner's discretion. Any changes shall be approved

by change order and the force account balance shall be reduced to reflect said change. Any remaining force account balance at the completion of the project shall be returned to the Owner by a deductive change order.

Working Hours

When School is **Not in Session**: From 7:00 a.m. until 3:30 p.m. Monday through Friday the project site will be available to the Contractor.

When School is **In Session**: From 3:30 p.m. until 11:00 p.m. Monday through Friday the project site will be available to the Contractor.

Schedule

Work may progress on playground space for pump house and pad during school hours of 7:00 a.m. until 3:30 p.m. Monday through Friday. The Awarded Contractor shall install temporary 6' chain link fence enclosing all of the work area during school hours. There shall be no deliveries, or vehicle traffic on the playground, parking or other areas during school recess, lunch, thirty (30) minutes before or after school. All vehicle traffic on the playground area shall be accompanied by spotters, as necessary. At no time shall the work progress so that it impacts the HVAC operations in the classrooms and the Awarded Contractor shall plan for the onsite work within the existing building to begin approximately June 10, 2026 and utilizing a 7:00 a.m. until 7:00 p.m. schedule Monday through Friday with availability within the school building during summer and break periods.

WCSD's Project Management Software (Procore)

The Awarded Contractor will be required to utilize WCSD's Project Management Software (Procore) for workflow of project documents. This will include, but not limited to submissions of RFIs, submittals, schedule and schedule updates, change documents, payment requests, and close out documents. The Awarded Contractor will be required to work with WCSD Project Manager and WCSD Consultants to manage process to meet project schedule needs. See Section 01041 – Project Management Software for details.

SECTION 00400 – SAMPLE BID BOND (PUR-F525)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____, as Principal, and _____ as Surety, are hereby held and firmly bound unto the Board of Trustees, Washoe County School District, as Owner, in the sum of _____ _____Dollars ($_____) for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____day of_____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to the Board of Trustees, Washoe County School District, a certain bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing for: _____.

NOW, THEREFORE, if said bid shall be rejected, or in the alternative, if said bid shall be accepted and the Principal shall execute and deliver a Contract in the form of Contract attached hereto (properly completed in accordance with said bid) and shall furnish a Bond for its Faithful Performance of said Contract, and a Bond for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the contract created by the acceptance of said bid, then this obligation shall be void.

Otherwise, the same shall remain in force and effect, and the sum herein specified paid over to the Owner; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Owner may accept such bid; said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their officers, the day and year first set forth above.

_____

_____

Principal

(Seal)

By: _____

_____

Surety

By: _____

Address:

(Seal)

_____

_____

_____

Phone: _____

SECTION 00500 – SAMPLE CONTRACT (PUR-F532)

THIS CONTRACT, made by and between _____ hereinafter called the Contractor, and **WASHOE COUNTY SCHOOL DISTRICT**, hereinafter called the Owner,

WITNESSETH, that the Contractor and the Owner, for the consideration hereinafter named, agree as follows:

Article 1 – Scope of Work. The Contractor shall furnish all of the materials and perform all of the work in conformance with the Contract Documents entitled **_____(Bid #_____).**

Article 2 – Time of Completion. The work to be performed under this Contract shall be commenced on the date set forth in the Notice to Proceed and shall be completed on or before **_____ or in _____ calendar days**. The Contractor agrees that Owner may retain from the monies due the Contractor the actual value of the damages to the Owner as a direct result of the Contractor's delay or for not completing the project in the required time allowance plus approved time extensions.

Article 3 – The Contract Sum. The Owner shall pay the Contractor for the performance of the Contract, subject to additions and deductions provided therein, in current funds the following stipulated sum:
_____($_____).

Article 4 – Progress Payments. The Owner shall make payments and pay interest to the Contractor in accordance with Nevada Revised Statutes, Chapter 338. No monies payable under this Contract shall be assigned by Power of Attorney, or otherwise, except upon written consent of Owner.

Article 5 – Acceptance and Final Payment. Upon written notice to the Owner that the work is one hundred percent (100%) complete, the Owner shall inspect the project. When the project is one hundred percent (100%) acceptable and complete to the Owner, the Contractor shall submit evidence satisfactory to the Owner that all payrolls, material bills, interest on retention, and other indebtedness connected with the work have been paid. Once all requirements have been satisfied, the Owner shall issue a fully executed Certificate of Completion which shall constitute the Owner's acceptance of the work in accordance with NRS Chapter 338.

Article 6 – The Contract Documents. The entire bidding documents, including but not limited to the: Notice to Contractors, Instructions to Bidders, Contractor's Bid, General Conditions, Supplementary Conditions, Special Conditions, Technical Specifications, Addenda, and the Drawings (if any), and this document form the Contract, and they are as fully a part of the Contract as if hereto attached.

Article 7 – Lead and Asbestos Certification. The Contractor hereby certifies that no lead/asbestos containing building material will be used for the construction of the project. If a lead/asbestos containing building material is subsequently found to have been included in the construction of the project, the Contractor shall be responsible for and indemnify the Owner against all costs for the proper removal of the lead/asbestos containing building material and the replacement of said material with a non-lead/asbestos containing material substitute. The removal method shall be specifically approved by the Owner and any and all authorities having jurisdiction over such removal.

IN WITNESS WHEREOF, the parties hereto have executed this Contract the day and year written below.

Bid #_____ - _____

WASHOE COUNTY SCHOOL DISTRICT	CONTRACTOR
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Date	Date

SECTION 00600 – SAMPLE LABOR AND MATERIALS BOND (PUR-F526)

KNOW ALL PERSONS BY THESE PRESENTS: That WHEREAS, the Board of Trustees of Washoe County School District in the State of Nevada has awarded to _____, hereinafter designated as "Principal", a contract dated _____, for _____ _____ _____ a copy of which contract is attached hereto and by reference made a part hereof, and hereinafter referred to as the "Contract."

And WHEREAS, said Principal is required under the terms of said Contract and by law under the provisions of NRS Chapter 339 to furnish a Bond for the Labor and Materials used in said Contract;

NOW, THEREFORE, we, the Principal, and _____, as Surety, are held and firmly bound unto the Board of Trustees of Washoe County School District in the State of Nevada in the sum of _____ 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 will 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-bounden Principal, or its heirs, executors, administrators, successors or assigns shall fail to pay for any materials, provisions, 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 Chapter 339, the Surety hereon will pay for the same within thirty (30) calendar days an amount not exceeding the sum specified in this bond, and the above obligation shall then be null and void. Otherwise, it shall remain in full force and virtue.

THE 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 to the specifications accompanying the same, shall in any way affect 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 or to the work, or to the specifications.

And the said Surety, for value received, further stipulates and agrees that should the Board of Trustees of Washoe County School District, or other obligees, incur attorney's fees or other expenses for the enforcement of the Contract or this bond, the same shall

be paid by the Surety to the contracting body, subcontractors, workmen laborers, mechanics and furnishers of material as their interests may appear.

IN WITNESS WHEREOF, the above-bounded 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

(Seal) By: _____

_____
Surety

By: _____

Address:

(Seal)

_____

_____

_____

Phone: _____

SECTION 00610 – SAMPLE PERFORMANCE BOND (PUR-F527)

KNOW ALL PERSONS BY THESE PRESENTS: That WHEREAS, the Board of Trustees of Washoe County School District in the State of Nevada has awarded to_____, hereinafter designated as "Principal": a contract dated _____, for _____
_____
a copy of which contract is attached hereto and by reference made a part hereof, and hereinafter referred to as the "Contract".

And WHEREAS, said Principal is required under the terms of said Contract and by law under the provisions of NRS Chapter 339 to furnish a Bond for the faithful Performance of said Contract;

NOW, THEREFORE, we, the Principal, and _____, as Surety, are held and firmly bound unto the Board of Trustees of Washoe County School District in the State of Nevada in the sum of _____Dollars ($_____), lawful money of the United States, being no less than one hundred per cent (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 bounden Principal, or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by and well and truly keep the faithfully perform the covenants, conditions, and agreements in the Contract and any alterations made as therein provided, on his or its part to be kept and performed at the respects according to their true intent and meaning; and shall indemnify and save harmless the Board of Trustees of Washoe County School District 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 Contract, the above obligation shall hold good for a period of one (1) year after completion and acceptance of the work done, 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 Board of Trustees of Washoe County School District 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 work, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the

work done, the above obligation in the said sum of _____Dollars ($_____) shall remain in full force and virtue; otherwise, the above obligation shall be void.

THE 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 to the specifications accompanying the same, shall in anyway affect 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, or to the work, or to the specifications.

And the said Surety, for value received, further stipulates and agrees that should the Board of Trustees, Washoe County School District, incur attorney's fees or other expenses for the enforcement of the Contract or his/her bond, the same shall be paid by the Surety to the Board of Trustees, Washoe County School District.

IN WITNESS WHEREOF, the above-bounden 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

(Seal) By: _____

_____
Surety

By: _____

Address:

(Seal)

_____

_____

_____

Phone: _____

SECTION 00700 – GENERAL CONDITIONS

The General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition, Articles 1 through 15, are hereby incorporated by reference as the “General Conditions of this Project.” Copies of General Conditions may be examined or obtained through formal request to the WCSD’s Purchasing Department located at the Brown Center, 14101 Old Virginia Road, Room 0, Reno, Nevada, 89521 or by phone at (775) 850-8025.

The information contained in the Supplementary General Conditions (Section 00800), Special Conditions (Section 00820), Instructions to Bidders (Section 00100), and the Bid Form (PUR-F523) shall become a part of the Contract and shall apply to all Contractors and Subcontractors. The information contained in Supplementary General Conditions (Section 00800) may amend, modify, supersede, void or supplement the Articles of the “General Conditions of the Project.” Where any part of an Article of the “General Conditions of the Project” is amended, modified, superseded or voided by a provision of the Supplementary General Conditions (Section 00800) or other Contract documents, all other provisions of such Article shall remain in effect, and the provisions of the Supplementary General Conditions (Section 00800) or other Contract documents shall be considered as added.

SECTION 00800 – SUPPLEMENTARY GENERAL CONDITIONS

The General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition, Articles 1 through 15, are hereby incorporated by reference as the “General Conditions of this Project.” Copies of General Conditions may be examined or obtained through formal request to the WCSD’s Purchasing Department located at The Brown Center, 14101 Old Virginia Road, Room 0, Reno, Nevada, 89521 or by phone at (775) 850-8025.

The information contained in the Supplementary General Conditions (Section 00800), Special Conditions (Section 00820), Instructions to Bidders (Section 00100), and the Bid Form (PUR-F523) shall become a part of the Contract and shall apply to all Contractors and Subcontractors.

In any instance where no Architect is involved in the project, any and all references contained in this or any other documents to "Architect" shall be deemed to refer to the consulting Engineer, if any, the special project consultant, if any, or, in the event no such individuals are involved, to the Owner.

The following supplements modify, delete and/or add to the “General Conditions of the Project.” Where any Article, Paragraph or Subparagraph in the “General Conditions of the Project” is supplemented by one of the following Paragraphs, the provisions of such Article, Paragraph, or Subparagraph shall remain in effect and the supplemental provisions shall be considered as added. Where any Article, Paragraph, or Subparagraph in the “General Conditions of the Project” is amended, voided or superseded by any of the following paragraphs, the remaining provisions of such Article, Paragraph or Subparagraph not amended, voided, or superseded shall remain in effect.

1. LIABILITY INSURANCE SPECIFICATIONS

A. INTRODUCTION

The Owner has established specific indemnification and insurance requirements for its construction contracts to help assure that reasonable insurance coverage is purchased and maintained. Insurance, indemnification and hold harmless clauses are intended to assure that a Contractor accepts and is able to pay for the loss or liability related to its activities.

Contractor’s attention is directed to the insurance requirements below. It is recommended that Contractors confer with their respective insurance carriers or brokers to determine **in advance of Bid submission** the availability of insurance certificates and endorsements as described and provided herein.

B. INDEMNIFICATION AGREEMENT

The Contractor agrees to hold harmless, indemnify and defend the Owner, its officers, agents, employees and volunteers from any loss or liability, financial or otherwise resulting from any claim, demand, suit, action, or cause of action based on bodily injury, including death, or property damage, including damage to the

Contractor's property or injury to the Contractor's employees, caused by any action, either direct or passive, the omission, failure to act or negligence on the part of the Contractor, employees, agents, representatives or Subcontractors arising out of the performance of work under this Contract by the Contractor, or by others under the direction or supervision of the Contractor.

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

In the event of a lawsuit against the Owner, its officers, agents, employees and volunteers, the Contractor shall reimburse the Owner for costs of the Owner's attorneys' fees and costs, as well as personnel in defending such actions. Reimbursement for the time spent by such personnel shall be at the rate charged for such services by private counsel. The Owner shall not be held liable for any accident, loss or damage to the work prior to its completion and acceptance.

C. GENERAL REQUIREMENTS

The Contractor shall purchase Workers Compensation Insurance, General Liability and Automobile Liability as described below. The cost of such insurance shall be included in the Contractor's bid price.

D. WORKERS COMPENSATION INSURANCE

It is understood and agreed that there shall be no Workers Compensation Insurance coverage provided for the Contractor or any Subcontractor by the Owner. Contractor agrees, as a precondition to the performance of any work under this Contract and a precondition to any obligation of the Owner to make any payment under this Contract, to provide Owner with certificates issued by an insurer that shows compliance with NRS Chapters 616A, 616B, 616C and 616D, inclusive, and Chapter 617.

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

Should Contractor be self-funded for Workers Compensation Insurance, Contractor shall notify Owner in writing prior to the acceptance of this Contract. Owner reserves the right to approve said retentions and may request additional documentation, financial or otherwise, for review prior to the acceptance of this Contract as provisioned under NRS Chapter 616B.627.

E. MINIMUM SCOPE OF LIABILITY INSURANCE

Coverage shall be at least as broad as:

1. Insurance Services Office (ISO) Commercial General Liability Coverage "Occurrence" form CG 0001 12 04 or substitute form

providing coverage as broad as CG 0001 12 04. The Commercial General Liability Coverage shall include, but is not limited to,
Liability Coverage arising from Operations, Premises, Blanket Contractual Liability, Broad Form Property Damage Liability, Products and Completed Operations, Personal Injury and Advertising Liability, and Stop Gap or Employers Liability. In addition, explosion, collapse, and underground coverage must be included unless Owner waives this requirement in writing prior to execution of Contract.

2. Business Auto Coverage form number ISO CA 0001, CA 00 055, CA00 12, CA 00 20 or an equivalent form covering Automobile Liability Symbol 1 "Any Auto."

F. MINIMUM LIMITS OF INSURANCE

The Contractor shall maintain limits no less than:

1. General Liability: **$2,000,000** minimum or the amount customarily carried by the Contractor, whichever is greater, combined single limit per occurrence (with $4,000,000 Aggregate Limit) for bodily injury, personal injury, and property damage. General Liability coverage shall specifically apply to the acts and/or omissions of Contractor and his/her Subcontractors. The above General Liability coverage shall be maintained in full force and effect for five (5) years from the date of completion of the project. The required limits may be met through a combination of primary and excess liability coverage. Any excess liability coverage shall provide coverage at least as broad as the primary coverage and be subject to all of the requirements herein.

2. Automobile Liability: $1,000,000 minimum or the amount customarily carried by the Contractor, whichever is greater, combined single limit per accident for bodily injury and property damage. No Aggregate Limits may apply. Non-owned and hired automobile liability must be included.

3. Workers Compensation Insurance: $1,000,000 minimum in limits (Employers Liability) and obtain Statutory Limits of Workers Compensation Insurance for employees engaged on or at the site of the project in accordance with NRS Chapters 616A, 616B, 616C and 616D, inclusive, and Chapter 617. If an excess policy is utilized, the policy will provide excess coverage for Employers' Liability.

4. Asbestos Environmental Risk Liability Insurance: $5,000,000 minimum, per occurrence (with $5,000,000 Aggregate Limit). Refer to Section 00820 – Technical Specifications for important information).

G. ASBESTOS COVERAGE

In the event that asbestos abatement is required on this project, Asbestos Liability Insurance is required. To that end, the Contractor will be required to provide written proof by way of an insurance certificate of a minimum of Five Million Dollars ($5,000,000) occurrence-based Asbestos Environmental Risk Liability Insurance from a domestic Insurance company that has an A, A+ or A++ rating in Best's Insurance Guide, OAE. The Asbestos Abatement Contractor shall name the WCSD additionally insured on a primary and non-contributory basis for the contract term as well as any asbestos consultants the District may hire for job design and/or supervision and shall provide an insurance certificate specifically naming them as additionally insured, primary and stating that the policy cannot be cancelled in less than 30 days for any reason including non-payment.

H. PROPERTY COVERAGES

Not Required For This Project.

I. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retention must be declared to and approved by the Owner. The Owner reserves the right to request additional documentation, financial or otherwise, prior to giving its approval of the deductibles and self-insured retention's and prior to executing the Contract. Any changes to the deductibles or self-insured retentions made during the term of this Contract or during the term of any policy, must be approved by the Owner prior to the change taking effect. It is also understood that the Contractor is responsible for and shall assume payment of all deductibles and/or self-insured retentions.

J. OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages

   a. The Owner, its agents, officers, employees and volunteers are to be included as Additional Insureds for damages and defense arising from: activities performed by or on behalf of the Contractor, including the insured's general supervision of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, employees or volunteers.

   b. The Contractor's insurance coverage shall be primary insurance with respect to the Owner, its officers, employees and volunteers. Any insurance or self-insurance maintained by the Owner, its officers, employees or volunteers shall be in excess

of the Contractor's insurance and shall not contribute to the Contractor's insurance coverage in any way.

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

d. The insurance companies issuing the policy or policies shall have no recourse against the Owner payment of any premiums, costs or assessments under any form of policy.

e. Failure of the Contractor to take out and/or maintain any required insurance shall not relieve the Contractor from any liabilities under this Contract, nor shall the insurance requirements be construed to conflict with or otherwise limit the obligations of the Contractor concerning indemnification.

2. All Coverages

a. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled or non-renewed by either the Contractor or by the insurer, reduced in coverage or in limits except after thirty (30) days prior written notice has been given to the Owner, which must be approved, if acceptable, by the Owner in writing.

Furthermore, Contractor shall provide the Owner thirty (30) days prior notice, in writing when the Contractor elects to change carriers, not to renew the policy, or reduce coverage, which must be approved, if acceptable, by the Owner also in writing.

b. The Contractor's insurers shall have no right of recovery or subrogation against the Owner or the design professionals which provide work on the project.

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

d. The insurance companies issuing the policy or policies shall have no recourse against the Owner for payment of any premiums, costs or assessments under any form of policy.

K. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with an A.M. Best's rating of no less than A:X. The Owner may accept coverage with carriers that have lower A.M. Best's ratings upon review of financial information concerning Contractor and insurance carrier. The Owner reserves the right to require that the Contractor's insurer(s) be a

licensed and admitted insurer(s) in the State of Nevada, or on the Insurance Commissioner's approved, but not admitted, list.

L. VERIFICATION OF COVERAGE

Prior to the commencement of any work on the project, the Contractor shall furnish the Owner with certificates of insurance and with original endorsements affecting coverage required. 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. All certificates and endorsements are to be received and approved by the Owner before work commences. The Owner reserves the right to require complete, certified copies of all required insurance policies, at any time should it be deemed in the best interest of the Owner.

M. SUBCONTRACTORS

The 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, except that if any Subcontractors maintain limits of insurance less than required in this Contract, Contractor's insurance shall include coverage for acts or omissions of Subcontractor up to the full limits required in this Contract.

N. MISCELLANEOUS CONDITIONS

1. The Contractor shall be responsible for and remedy all damage or loss to any property, including property of the Owner, caused in whole or in part by the Contractor, any Subcontractor, or any employed, directed or supervised by the Contractor.

2. Nothing herein contained shall be construed as limiting in any way the extent to which the Contractor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any Subcontractor under it.

3. In addition to any other remedies the Owner may have should the Contractor fail to provide or maintain any insurance policies or policy endorsements to the extent and within the time required, the Owner may, at its sole option:

    a. Purchase such insurance to cover any risk for which the Owner may be liable through the operations of the Contractor under this Contract and deduct or retain the amount of the premiums for such insurance from any sums due to the Contractor under the Contract; or

    b. Order the Contractor to cease work under this Contract and/or withhold any payments, which became due the Contractor until the Contractor demonstrates compliance with the requirements hereof; or

c. Terminate the Contract.

2. GUARANTEE BOND

Not Required For This Project.

3. INTEREST

Article 13.5 is hereby supplemented as follows:

Not Required For This Project.

4. CLEANING UP

Article 3.15 is hereby supplemented as follows:

The Contractor, at all times, shall keep the premises free from accumulation of waste materials or rubbish caused by operations. At the completion of the work, Contractor shall remove all waste materials and rubbish from and about the project as well as all tools, construction equipment, machinery and surplus materials, and shall clean all glass surfaces and leave the work "broom clean" or its equivalent, except as otherwise specified.

5. LIQUIDATED DAMAGES

Add Article 8.2.4 as follows:

It is hereby understood and mutually agreed that the date of beginning, rate of progress, and the time for completion of the work to be done hereunder are essential conditions of this Contract and that the work embraced in this Contract shall be commenced on the date set forth in the Notice to Proceed issued by the Owner.

The Contractor agrees that all work shall be performed regularly, diligently, and uninterruptedly at a rate of progress that will ensure substantial completion within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for completion of the work described herein is an acceptable time for the completion of the work. If the Contractor should neglect, fail, or refuse to complete the work within the specified Contract time, that has been extended by the Owner, then the Contractor does hereby agree, as a part of the consideration for receiving the award of this Contract, to pay to the Owner, not as a penalty, but as Liquidated Damages, the amount of money specified in the Contract (Section 00100 – Instruction to Bidders and Bid Form (PUR-F523) per day. If the Owner incurs costs in excess of the Liquidated Damages as a result of the Contractor's inability to complete the work by the specified date the additional cost will be deducted from the Contract amount.

If the Contractor fails to complete or correct the work listed on the comprehensive list of deficiencies ("**Punch-List**") within the specified time for performance, the Contractor does hereby agree to pay the Owner **$500** as Liquidated Damages for each

calendar day that the completion or correction of the work extends beyond the 45 days for performance allowed from the date the Contractor receives the Punch List of deficiencies from the Architect and/or his/her consultants and/or the Owner.

6. CHANGE ORDERS

Article 7.2 is hereby modified as follows:

A. The Owner, without invalidating the contract, may order changes in the work consisting of additions, deletions, or other revisions, the contract sum and contract time being adjusted accordingly. All such changes in the work shall be authorized by Change Order issued by the Owner.

B. The cost or credit to the Owner resulting from a change in the work shall be determined by the Architect in one or more of the following ways:

1. By unit prices stated in the Contract documents or subsequently agreed upon.

2. By mutual acceptance of a lump sum proposal, properly itemized by contractor/subcontractor, to include the following:

   a. Labor, including fringe benefits, payroll taxes, and workers' compensation insurance;

   b. Materials entering permanently into the work;

   c. Equipment costs for equipment utilized to perform the Change Order work; and/or

   d. Change Order Mark-Up per Schedule.

3. By the actual cost of properly itemized by contractor/subcontractor, to include the following:

   a. Labor, including fringe benefits, payroll taxes, and workers' compensation insurance;

   b. Materials entering permanently into the work;

   c. Equipment costs for equipment utilized to perform the Change Order work; and/or

   d. Change Order Mark-Up per Schedule.

C. The costs under Paragraph 6(B) 1-3 above may be increased by General/Prime Contractor, Subcontractor (all tiers) to include a fixed fee for Subcontractor profit and overhead, Prime Contractor profit and overhead on Subcontractor work, and profit and overhead on work done by the General/Prime Contractor's own forces. The total of such fixed fee shall not exceed the amount determined from

the Change Order Mark-Up Schedule below for a single Change Order item, or for any group of related items, and shall be full compensation for the cost of supervision (to include Project Manager, Project Coordinator, Superintendent, Administrative Staff, etc.), overhead, profit, insurance, general conditions not listed and any BIM updating, Procore updating, or other general expense associated with completing the change in the scope of work. The allowable mark-up fee for contractor bonding shall be in addition to the fee below for the Prime Contractor only and shall not exceed 1% of the change if applicable.

CHANGE ORDER MARK-UP SCHEDULE

1. Additive Changes (for the entity performing the work):	
Total Cost of Change +$0.01 to +$50,000 +$50,000.00 and above	Allowable Fee 15% of the Total Cost 10% of the Total Cost
2. Additive Changes (Contractor Markup) Subcontractors work:	
Total Cost of Change +$0.01 to +$50,000 +$50,000.00 and above	Allowable Fee 10% of the Total Subcontractor Fee 5% of the Total Subcontractor Fee
3. Deductive Changes:	
Total Credit Cost of Change +$0.01 to +$50,000 +$50,000.00 and above	Credit Fee to be Applied 10% of the Total Subcontractor Cost. (*Deductive*) 5% of the Total Subcontractor Fee (Deductive)
Example of Deductive Change: Assume <$5,000.00> to be credited. The Contractor must include a 10% credit for profit and overhead, i.e. $5,000.00 X 0.10 = <$5,500.00> total credit to the Contract.	

D. No fees shall be paid for time extensions.

E. All proposals shall be submitted to the Architect in sufficient detail to complete an analysis of all costs. The Contractor shall submit invoices for materials and equipment utilized in Change Order work. Labor rates shall not exceed the applicable Wage Rates (including Prevailing Wage Rates) as published by the State of Nevada Office of the Labor Commissioner. Fringe benefits shall not exceed the cost of fringe benefits normally paid to such personnel or established by the industry in the Northern Nevada area, whichever is lower. Labor rates or additional rates not identified as part of Prevailing Wage Rates shall be identified and approved by WCSD prior to start of construction.

7. SUBCONTRACTORS

Article 5.2.1 is hereby modified as follows:

A. Per NRS Chapter 338:

1. Except as otherwise provided in Subsection 2, each bid submitted to any officer, department, board or commission for the construction of any public work or improvement must include:

   a. The name of each Subcontractor who will provide labor or a portion of the work or improvement to the Contractor for which he/she will be paid; and

   b. A description of the portion of the work or improvement which each Subcontractor named in the bid will complete.

2. The Contractor shall list in the Bid Form (PUR-F523) pursuant to Subsection 1 the name of a Subcontractor for each portion of the project that will be completed by him/her.

3. A Contractor whose bid is accepted, shall not substitute any person for a Subcontractor who is named on the Bid Form (PUR-523), unless:

   a. The Owner objects to the Subcontractor, requests in writing a change in the Subcontractor and pays any increase in costs resulting from the change; or

   b. The substitution is approved by the Owner and:

      1. The Subcontractor, after having a reasonable opportunity, fails or refuses to execute a written contract with the Contractor, which was offered to the Subcontractor with the same terms and conditions that all other Subcontractors on the project were offered; or

      2. The named Subcontractor files for bankruptcy or becomes insolvent; or

      3. The named Subcontractor fails or refuses to perform subcontract within a reasonable time.

8. MANDATORY DRUG TESTING PROGRAM

A. In order to be eligible to perform work on WCSD construction projects all Contractors who will work on such projects must have a current and valid Drug and Alcohol Policy that is applicable to all workers who will be employed on those projects regardless of tier. This requirement is a reasonable precaution to ensure a safe and drug-free environment on school construction projects that may involve workers being in relatively in close contact with students.

B. The Policy must meet the minimum requirements as outlined in Exhibit 1. Each Contractor shall demonstrate compliance with this provision by signature on the Bid Form that the Policy is in place, that it will be actively enforced, and that all workers who will be employed on WCSD projects will have undergone the pre-

placement drug testing required by WCSD. The WCSD and/or the Prime Contractor is empowered to review Contractor records of enforcement of its Drug and Alcohol Policy at any time during the construction period up to and including completion of the project in order to determine whether the policy is in fact being enforced. The Contractor shall forthwith deliver to the WCSD any and all records requested to determine compliance with this Drug and Alcohol Policy requirement. Failure to maintain or rigorously enforce the policy or to timely respond to WCSD demands for production of records relating to the Drug and Alcohol Policy may result in termination of the project agreement at no cost to the WCSD.

C. Refer to Washoe County School District Mandatory Drug and Testing Program Requirements – EXHIBIT 1.

EXHIBIT 1

WASHOE COUNTY SCHOOL DISTRICT

MANDATORY DRUG AND ALCOHOL TESTING PROGRAM REQUIREMENTS

In order to be eligible to perform work on WCSD construction projects, all Contractors who work on such projects must have a current and valid Drug and Alcohol Policy that meets the following minimum requirements:

1. A statement identifying prohibited conduct regarding employee drug and alcohol use. At a minimum, the policy should address the following areas of prohibited conduct:

    a. Alcohol

    Possession of open containers use or being under the influence of alcohol by any employee during normal business hours including lunch breaks, while performing Contractor business, while operating Contractor vehicles or equipment or while on company premises is prohibited. Failure to pass an alcohol test will be grounds for disciplinary action up to and including termination.

    b. Illegal Drugs

    The unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited. Failure to pass a drug test will be grounds for disciplinary action up to and including termination.

    c. Legal Drugs

    Except as provided below, use or being under the influence of any mood-altering legal drug by any employee while on company premises or while performing company business is prohibited to the extent such use or influence may affect the safety of the employee, co-workers or the public, the employee's job performance or the safe or efficient operation of the Contractor.
    An employee under the influence of a mood-altering legal drug has an obligation to inquire and determine whether the mood-altering legal drug he/she is taking

may or will affect his/her ability to safely and efficiently perform his/her job duties. If the employee is using a mood-altering legal drug at the direction of a physician, dentist or other licensed practitioner, the employee is required to inform a designated company official. In compliance with the Americans with Disabilities Act (ADA), this policy does not require the employee, physician, dentist or other licensed practitioner to identify the name of the prescription drug or the medical condition for who it is prescribed. For the safety of all employees, the Contractor may place persons using such drugs in a less hazardous job assignment or place them on temporary medical leave until released as fit for duty by the prescribing physician, dentist or other licensed practitioner. An employee taking over-the-counter medications contrary to instructions provided by the manufacturer may be subject to disciplinary action up to and including termination.

d. Drug Paraphernalia

Employee possession of drug paraphernalia on the project site is strictly prohibited.

2. A statement requiring, at a minimum, the following types of drug and/or alcohol testing:

a. Pre-Placement Testing

Prior to the start of employment generally, or employment on any WCSD project, the Contractor must assure that any employee assigned to work on a WCSD project has previously completed a pre-placement drug test before the effective date of the project assignment. In the case of a newly hired employee, he/she must pass a pre-placement drug test prior to being allowed to work on a WCSD project.

b. Reasonable Suspicion Testing

Contractor will require a medical examination, breath test, blood test, and/or urinalysis when there is reasonable suspicion to believe that the employee is using drugs and/or alcohol at work or where circumstances or workplace conditions justify it.

c. Post- Accident Testing

Each employee will be tested for prohibited drugs and alcohol use as soon as possible after a reportable accident. Reportable accident is defined as any incident that results in an employee requiring medical treatment that results in the filing of a Workers Compensation claim, or property damage in excess of five hundred dollars ($500.00). An employee shall not be relieved of duty pending the receipt of test results except where there is reasonable evidence that alcohol or illegal drug use was a contributing factor as determined by the treating physician.

d. Return To Duty Testing and Follow-Up Testing

At the Contractor's discretion, employees in violation of the drug and alcohol policy will be subject to a return to duty policy as a condition of continued employment. In essence, this policy states that the Contractor may rehire or retain the employee in return for the employee's promise to remain alcohol and drug free on WCSD project sites, complete an evaluation by a licensed alcohol and drug counselor and follow all professional recommendations, provide a negative drug and/or alcohol test to return to duty and submit to follow-up testing on a random basis to confirm on-going policy compliance. This document will be kept in a confidential file belonging to the Contractor's agency.

3. A statement describing the procedures the Contractor will use to test for the presence of alcohol and controlled substances, protect the integrity of the testing processes, safeguard the validity of the test results and ensure that those results are attributed to the correct employee. To meet this requirement, the Contractor is encouraged to follow the Federal Substance Abuse and Mental Health Services Administration (SAMHSA) Drug and Alcohol Testing Guidelines (49 CFR Part 40). At a minimum, the employer must test for the following drugs of abuse:

    - Marijuana
    - Cocaine
    - Opiates
    - Amphetamines/Methamphetamines
    - Phencyclidine (PCP)

    a. For the purpose of this policy, a positive drug test means that the employee has ingested a drug(s), which causes the employee's drug threshold level to be above the Federal Substance Abuse and Mental Health Services Administration (SAMHSA) Drug and Alcohol Testing Guidelines (49 CFR Part 40). For the purpose of this policy an employee whose breath/blood alcohol level is .04 or greater is considered to be in violation of the policy. It is recommended that blood alcohol testing only be used when an employee is medically unable to provide a breath alcohol sample.

4. A statement indicating the consequences for employees found to be in violation of the drug and alcohol policy. The Contractor's policy must outline the procedures the Contractor will follow to assure that the employee is fit to return to duty following a policy violation. At a minimum, an employee in violation of the Contractor's drug and alcohol policy must complete an evaluation by a licensed alcohol and drug counselor and follow all professional recommendations, provide a negative drug and/or alcohol test to return to duty and submit to follow-up testing on a random basis to confirm on-going policy compliance.

5. A statement indicating that actions taken under this policy will be confidential within the affected Contractor and employee. At a minimum, the Contractor must inform the employee that test results may be disclosed to another member of management on a need-to-know basis and to the employee upon request. Disclosures, without employee consent may also occur when: (A) the information is compelled by law or judicial or

administrative process; (B) the information has been placed at issue in a formal dispute between the employer and the employee or job applicant; (C) the information is used in administering an employee benefit plan or other insurance program; (D) the information is needed by first-aid, safety, or medical personnel for the diagnosis or treatment of an employee who is unable/unwilling to authorize disclosure; (E) for review by the State Worker's Compensation Board or the State Unemployment Security Division in determining a pending claim; or (F) the information is compelled by federal officials investigating compliance with the Americans with Disabilities Act (ADA).

6. A statement indicating that all employees shall participate in a company-sponsored drug/alcohol awareness program. The program shall provide employees with information regarding: (A) the company's drug/alcohol free workplace policy; (B) available counseling, referral agencies and rehabilitation; and (C) the penalties imposed upon employees for violations of this policy.

   Each Contractor shall ensure that all supervisors designated to supervise employees on a WCSD project complete a training course on reasonable suspicion testing. This training shall include information on the physical, behavioral, speech and performance indicators of probable employee alcohol or drug abuse and how to effectively intervene per Contractor policy.

7. A statement indicating that Subcontractors, Sub-tiered Contractors, vendors, and their employees shall be required to cooperate with the Contractor's policy to achieve a drug/alcohol free workplace.

END OF EXHIBIT 1

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9. ARTICLE 1.1 GENERAL PROVISIONS

Add the following at the end of Subparagraph 1.1.1:

In the event of any conflict among the Contract documents, the documents shall be construed according to the following priorities:

Highest Priority:	Modifications
Second Priority:	Agreement
Third Priority:	Addenda–later date to take precedence
Fourth Priority:	Supplementary General Conditions
Fifth Priority:	General Conditions
Sixth Priority:	Specifications with respect to quality and general performance of the Work
Seventh Priority:	Drawings with respect to quantity of materials and general location of the Work. Detail drawings shall take precedence over small scale drawings.

Add the following at the end of Subparagraph 1.2.1:

All Work mentioned or indicated in the Contract documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract documents that such Work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of work unless otherwise directed by written addendum to the Contractor.

Add the following to Subparagraph 1.2.2:

The Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the Work of the mechanical, electrical and other specialized trades, and to all of the Sections of the Specifications, and shall perform all Work reasonably inferable therefrom as being necessary to produce the indicated results.

Add new Subparagraphs 1.2.4 through 1.2.11 as follows:

1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract documents.

1.2.5 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest adopted version used to issue permits, except where otherwise indicated.

1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract documents.

1.2.8 The Mechanical, Electrical and Fire Protection Drawings are diagrammatic only, and are not intended to precisely show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the Mechanical, Electrical and Fire Protection installations and demonstrating to the Contractor's satisfaction that the installations will comply with the preceding sentence.

1.2.9 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in Subparagraph 3.2.2 before the Work is roughed in; Work

installed without such information from the Architect shall be relocated at the Contractor's expense.

1.2.10 Test boring or soil test information included with the Contract documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architect in the design of the Project or Work. The Owner does not hold out such information to the Contractor as an accurate or approximate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from reliance by the Contractor on such information shall be allowed except as provided in Subparagraph 3.7.4.

1.2.11 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work with such conditions or work, unless otherwise specified.

11. ARTICLE 3.1 CONTRACTOR

Add the following to the end of 3.2.1:

If the Contractor proceeds with the Work without such notice to the Architect, having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Contract documents the Contractor could have discovered such, the Contractor shall bear all costs arising therefrom.

Add the following to the end of 3.2.2:

The Contractor shall give the Architect timely notice of any additional Drawings, Specifications, or instructions required to define the Work in greater detail or to permit the proper progress of the Work. The Contractor shall not proceed with any Work not clearly and consistently defined in detail in the Contract documents but shall request additional Drawings or instructions from the Architect. If the Contractor proceeds with such Work without obtaining further Drawings, Specifications or instructions, then the Contractor shall correct Work incorrectly done at the Contractor's own expense.

Add the following sentence to the end of Subparagraph 3.4.1:

The word "provide" shall mean furnish and install complete, including connections, unless otherwise specified.

Change the first sentence of Subparagraph 3.5.1 and delete the last (2) two sentences to read as follows:

The Contractor warrants that the materials and equipment furnished under the Contract will be new and of recent manufacture unless otherwise specified, and that all Work will be of good quality, free from faults and defects, and in conformance with the Contract documents.

Add new Subparagraphs 3.5.3 through 3.5.9 as follows:

3.5.3 The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract documents. The Architect may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract documents to be performed at the Contractor's expense.

3.5.4 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for approval and shall request written approval of the deviation from the requirements of the Contract documents.

3.5.5 In requesting approval of deviations or substitutions, the Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

3.5.6 The Contract documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect shall judge the design and appearance of proposed substitutes based on their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Architect will not approve as equal to materials specified proposed substitutes which, in the Architect's opinion, would be out of character, obtrusive, or otherwise inconsistent with the character of quality of design of the Project. In order to permit coordinated design of color and finishes the Contractor shall, if required by the Architect, furnish the substituted material in any color, finish, texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the Owner.

3.5.7 Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Architect, unless such substitution was made at the written request or direction of the Owner or the Architect.

3.5.8 The warranty provided in this Paragraph 3.5 shall be in addition to and not in limitation of any other warranty required by the Contract documents or otherwise prescribed by law.

3.5.9 The Contractor shall procure and deliver to the Architect, no later than the date claimed by the Contractor as the date of Substantial Completion, all special warranties required by the Contract documents. Delivery by the Contractor shall constitute the Contractor's guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions.

Change the title of Paragraph 3.9 to read "Superintendence."

Change the first sentence of Subparagraph 3.9.1 to read as follows:

The Contractor shall employ a competent superintendent, reasonably acceptable to the Owner, and necessary assistants who shall be in attendance at the Project site full time during the progress of the Work until the date of Substantial Completion, and for such additional time thereafter as the Architect may determine to be necessary for the expeditious completion of the Work.

Add to end of Subparagraph 3.9.3 as follows:

The Contractor shall remove the superintendent if requested to do so in writing by the Owner and shall promptly replace him with a competent person reasonably acceptable to the Owner.

Add new Subparagraphs 3.9.4 through 3.9.7 as follows:

3.9.4 The Contractor shall retain a competent Registered Professional Engineer or Registered Land Surveyor, acceptable to the Architect, who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the site and shall establish sufficient lines and grades for the construction of associated Work such as, but not limited to, roads, utilities, and site grading. The Engineer or Land Surveyor shall certify as to the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries.

3.9.5 The Contractor shall establish the building grades, lines, levels, columns, walls and partition lines required by the various Subcontractors in laying out their Work.

3.9.6 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate contractor, or the Owner, every reasonable opportunity for the installation of work and the storage of materials.

3.9.7 The Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect may from time-to-time wish to have present. The Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the Contractor's own superintendent. An authorized representative of any Subcontractor or Sub-Subcontractor shall attend such meetings if the representative's presence is requested by the Architect. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, change orders, time schedules, and workforce. Any notices required under the Contract may be served on such representatives.

Change Subparagraph 3.10.1 to read as follows:

3.10.1 The Contractor shall prepare and submit to the Architect a progress schedule as described in Subparagraphs 8.2.4 through 8.2.10.

Change Subparagraph 3.12.6 to read as follows:

3.12.6 By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

Add the following at the end of Subparagraph 3.12.9:

Unless such written notice has been given, the Architect's approval of a resubmitted Shop Drawing, Product Data, Sample, or similar submittal shall not constitute approval of any changes not requested on the prior submittal.

Change Subparagraph 3.13 to read as follows:

The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract documents. The Contractor shall confine the Contractor's apparatus, the storage of materials, and the operations of the Contractor's workmen to limits indicated by law, ordinances, the Contract documents and permits and/or directions of the Architect and shall not unreasonably encumber the premises with the Contractor's materials. The Owner shall not be liable to the Contractor, their Subcontractors, their employees or anyone else with respect to the conditions of the premises, except only for a condition caused directly and

solely by the negligence of the Owner.

Add the following at the end of Subparagraph 3.15.1:

Immediately prior to the Architect's inspection for Substantial Completion, the Contractor shall completely clean the premises. Concrete and ceramic surfaces shall be cleaned and washed. Resilient coverings shall be cleaned. Woodwork shall be dusted and cleaned. Sash, fixtures, and equipment shall be thoroughly cleaned. Stains, spots, dust, marks and smears shall be removed from all surfaces. Hardware and all metal surfaces shall be cleaned and polished. Glass and plastic surfaces shall be thoroughly cleaned by professional window cleaners. All damaged, broken or scratched glass or plastic shall be replaced by the Contractor at the Contractor's expense.

12. ARTICLE 4.1 ADMINISTRATION OF THE CONTRACT

In Subparagraph 4.2.7, add to the end of the first sentence:

"…and only to the extent which the Architect believes desirable to protect the Owner's interest."

13. ARTICLE 8.1 TIME

Added new Subparagraphs 8.1.5 through 8.1.11 as follows:

8.1.5 Within two (2) weeks after award of the Contract, the Contractor shall submit to the Architect a Progress Schedule showing for each class of work included in the Schedule of Values, the percentage completion to be obtained and the total dollar value of work to be completed as of the first of each month until Substantial Completion. All calculations shall be based on the Work in place, and not include the value of materials delivered, but not in place.

8.1.6 The Progress Schedule shall be based on an orderly progression of the Work, allowing adequate time for each operation (including adequate time for submission and review of submittals), and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Progress Schedule will be reviewed by the Architect for compliance with the requirements of this Article and will be accepted by the Architect or returned to the Contractor for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the Progress Schedule has been approved by the Architect.

8.1.7 If in any Application for Payment the total value of the completed Work in place, as certified by the Architect, is less than 90% of the total value of the Work in place estimated in the Progress Schedule, the Owner may, at the Owner's option, require the Contractor to accelerate the progress of the Work without cost to the Owner by increasing the work force of hours of work, or by other reasonable means approved by the Architect.

8.1.8 If each of three (3) successive applications, as certified by the Architect, indicate that the actual Work completed is less than 90% of the values estimated in the Progress Schedule to be completed by the respective dates, the Owner may at the Owner's option, treat the Contractor's delinquency as a default justifying the action permitted under Paragraph 14.2.

8.1.9 If the Architect has determined that the Contractor should be permitted to extend the time for completion as provided in Paragraph 8.3, the calendar dates in the Progress Schedule shall be adjusted accordingly to retain the same relationship to the adjusted date of Substantial Completion, and the dollar value of Work to be completed as of the first of each month shall be prorated.

8.1.10 If the Contractor fails to submit any Application for Payment in any month, the Architect shall, for the purpose of this evaluation of progress, certify separately to the actual value of the Work in place completed as of the first of the month to the best of the Architect's knowledge.

8.1.11 Nothing herein shall limit the Owner's right to liquidated or other damages for delays by the Contractor or to any other remedy which the Owner may possess under other provisions of the Contract Documents or by law.

Change Subparagraph 8.3.3 and add new Subparagraph 8.3.4 as follows:

8.3.3 No claim for delay shall be allowed on account of failure of the Architect to furnish Drawings, Specifications, or instructions or to return Shop Drawings or Samples until fifteen (15) days after receipt by the Architect by registered or certified mail of written demand for such instructions, Drawings, or Samples, and not then unless such claim be reasonable.

8.3.4 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

14. ARTICLE 9.1 PAYMENTS AND COMPLETION

Add at the end of the second sentence of Subparagraph 9.2:

"and shall be revised if later found by the Architect to be inaccurate."

Add new Subparagraph 9.3.4 as follows:

9.3.4 Each Application for Payment or periodic estimate requesting payment shall at the Owner's option be accompanied by: (1) a waiver of liens from each Subcontractor; or (2) a certificate from each Subcontractor stating that the

Subcontractor has been paid all amounts due the Subcontractor on the basis of the previous periodic payment to the Contractor or else stating the amount not so paid and the reason for the discrepancy. In the event of any such discrepancy, the Contractor shall furnish the Contractor's own written explanation to the Owner through the Architect. Such waiver or certificate shall be in a form acceptable to the Owner.

In Subparagraph 9.5.1, add the new item to the list of .1 through .7 as follows:

.8 failure of mechanical trade or electrical trade Subcontractors to comply with mandatory requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Architect before approval of the Contractor's monthly payment requisition.

Replace the second sentence of Subparagraph 9.10.2 with the following:

If the Contractor fails to furnish such releases or waivers, as the Owner reasonably requires, to satisfy the Owner that there are not outstanding liens, the Owner may require the Contractor, as a condition of final payment and at the Contractor's expense, to furnish a bond satisfactory to the Owner to indemnify the Owner against any such liens.

15. ARTICLE 10.1 PROTECTIONS OF PERSONS AND PROPERTY

At the end of the Subparagraph 10.1, add the following:

"… including compliance with 29 CFR 1910.132, 1910.133, and 1910.134, and for providing a safe workplace and complying with all codes, bylaws, rules and regulations applicable to the construction site."

In Subparagraph 10.2.1.2 delete the word "and" at the end of the Subparagraph.

In Subparagraph 10.2.1.3 add the word "and" to the end of the Subparagraph.

In Subparagraph 10.2.1, add the new item to the list of .1 through .3 as follows:

.4 any other property of the Owner, whether or not forming part of the Work, located at the site or adjacent thereto in areas to which the Contractor has access.

Add new Subparagraphs 10.2.9 through 10.2.12 as follows:

10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local Fire Chief or Fire Marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

10.2.10 The Contractor shall, at all times, protect excavations, trenches, buildings and materials, from rainwater, ground water, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping, and other equipment necessary to this end.

10.2.11 The Contractor shall remove snow and ice which might result in damage or delay.

10.2.12 During the progress of the Work and at all times prior to the date of Substantial Completion of occupancy of the Work by the Owner, whichever is earlier, the Contractor shall provide temporary heat, ventilation, and enclosure, adequate to permit the Work to proceed in a timely fashion, and to prevent damage to completed Work or Work in progress, or to materials stored on the premises. The permanent heating and ventilation systems may be used for these purposes when available unless otherwise provided in the Contract Documents.

16. ARTICLE 11.3 PROPERTY INSURANCE

Subparagraphs 11.2.2 through 11.5.2 shall be deleted in their entirety.

17. ARTICLE 12.1 UNCOVERING AND CORRECTION OF WORK

Add at the end of Subparagraph 12.2.1:

"…and any cost, loss, or damages to the Owner resulting from such failure or defect."

18. ARTICLE 13.1 MISCELLANEOUS PROVISIONS

Change Subparagraph 13.4.4 to read as follows:

13.5.4 The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Architect shall be a condition precedent to Substantial Completion of the Work.

19. ARTICLE 14.1 TERMINATION OF THE CONTRACT

Delete "or" from end of Subparagraph 14.1.1.2

Delete Subparagraphs 14.1.1.4 in its entirety.

20. ARTICLE 15 CLAIMS AND DISPUTES

Add the following sentence to the end of Subparagraph 15.1.3.1:

Any change or addition to a previously made Claim shall be made by timely written notice in accordance with this Subparagraph 15.1.3.1.

Delete the second sentence of Subparagraph 15.1.6.1 and substitute the following:

The Contractor shall have the burden of demonstrating the effect of the claimed delay on the Contract Time and shall furnish the Architect with such documentation relating thereto as the Architect may reasonably require.

Add the following Subparagraph:

15.1.6.3 Any extension of time for weather delays shall be considered by the Architect and Owner only when a request for such extension is made in writing by the Contractor and provided further that any such request shall be presented to the Architect or Owner within ten (10) days from the commencement of the period of delay.

It is expressly understood and agreed that the Contract Time includes adequate time to allow for usual weather/smoke delays considering the climatic conditions in the area of the Project. No adjustments to the Contract Time will be allowed on account of usual weather or subsequent building/site conditions. The Contractor shall include adequate float or other allowance in the Contractors construction schedule to accommodate weather conditions that may be associated with weather dependent work. Any extension of time for weather will be per specifications 01310(A/B).

Time extension requests for delays caused by additional adverse weather conditions will be evaluated individually. Inclement weather days in which no work is conducted at the project site will be considered by the Owner for full day time extensions. Inclement weather days in which any trade or worker perform work on the project will be considered by the Owner for a maximum of one-half (½) daytime extension.

SECTION 00810 – WAGE RATES AND APPRENTICE UTILIZATION

The Contractor shall comply strictly with the requirements of **NRS Chapter 338** and shall pay, if required by statute, prevailing wage rates for the appropriate labor positions as outlined in 'Washoe County - Prevailing Wage Rates for Public Works, State of Nevada" for projects that are $100,000 or greater. Prevailing wage shall be paid for all work through punch list and issuance of Notice of Completion.

Wage rates as published by the Labor Commissioner of the State of Nevada are available as follows:

Office of Labor Commissioner
1818 College Parkway, Suite 102
Carson City, NV 89706

- Phone: (775) 684-1890
- Email: mail1@Labor.nv.gov
- Website: https://labor.nv.gov/

The Contractor shall comply strictly with the requirements of **NRS Chapter 338 and the Apprentice Utilization Act** as reformed by Senate Bill 82 (SB82) in the 2023 Legislative Session effective January 1, 2024. Please refer to the Labor Commissioner's website specifically for a copy of Senate Bill 82, Presentation Senate Bill 82 dated 12-12-23, Senate Bill 82 OLC Summary dated 12-12-23 and any other posted information.

(https://labor.nv.gov/Apprenticeship_Utilization_Act/Apprenticeship_Utilization_Act/)

A contractor or subcontractor engaged in Public Works construction who employs workers on one or more public works during a calendar year pursuant to NRS 338.040 shall use apprentices for a portion of the total hours of labor worked for each apprenticed craft or type of work to be performed on those public works.

This project is subject to the Apprentice Utilization Act and is categorized as **VERTICAL** work.

It is the Contractor's responsibility to comply, document and report directly to the Labor Commissioner annually if they have performed a certain number of hours or more on Public Works. Failure to comply, document and report could result in financial penalties and disqualification per NRS.

SECTION 00820 - SPECIAL CONDITIONS

1. TIME OF COMPLETION

The physical work is to commence as phased in the Special Notifications and shall be completed on or before August 1, 2026.

2. EXAMINATION OF SITE

Contractor is requested to visit the project site, compare the Drawings and Specifications with any work in place, and be informed of all conditions, including the work, if any, being performed. Failure to visit the project site will in no way relieve the Contractor from necessity of furnishing any materials or performing any work in accordance with Drawings and Specifications that may be required to complete the work without additional cost to the Owner.

The Contractor shall call the project site and make arrangements for a time to visit. To review the existing premises, contact the Principal and/or Site Facilities Coordinator at the site(s). **Whenever at the site, be sure to check in at the Front Office**.

3. STORAGE

If available as determined by the Capital Projects Department, the Contractor may make arrangements with the Capital Projects Department for an area which the Contractor may use for storage of tools, equipment, and supplies while the project is in progress. Contractor to provide own storage unit for self and any Subcontractors.

4. UTILITIES

If available as determined by the Capital Projects Departments, the Contractor may make arrangements with the Capital Projects Department for the use of all water, electricity, lighting, and other utilities necessary for construction purposes. However, the Contractor shall furnish at his/her own expense any lines or equipment, or extensions necessary to bring utilities to construction areas including any design, permitting, fees, hookup, etc. to execute the use of the utility.

5. TOILETS

If available as determined by the Capital Projects Department, the Contractor may make arrangements with the Capital Projects Department for toilets as necessary for use of workers. Toilets must be kept in sanitary condition and are the responsibility of the Contractor. Additional toilets may be required to be provided by the Contractor if weekend or after hour work is anticipated.

6. BUILDING CODES

All work in this project shall strictly comply with ordinances and laws, state and local, governing such construction in this locality.

Should the Drawings and/or Specifications in any way conflict with these ordinances and laws, the Contractor shall immediately notify the Owner.

7. WAGES

a. Wage Rates – The Contractor shall comply strictly with the requirements of NRS Chapter 338 and shall pay, if required by statute, prevailing wage rates for the appropriate labor positions as outlined in "Washoe County - Prevailing Wage Rates for Public Works, State of Nevada" for projects that are $100,000 or greater.

b. Nondiscrimination - In connection with the performance of the work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, or sex. Such agreement shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment, or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor further agrees to insert this provision in all subcontracts hereunder, except subcontract for standard commercial supplies or raw materials. Any violation of these provisions by a Contractor or Subcontractor shall constitute a material breach of Contract.

c. Health and Safety in Employment - All applicable provisions of NRS Chapter 618 shall be incorporated in the construction practices for all employees directly engaged in the completion of this project.

Safety: In accordance with generally accepted construction practices, the Contractor will be solely and completely responsible for condition of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

The duty of the Engineer/Architect to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures.

d. Hours - No overtime or weekend work on the project will be performed without the written approval of the Owner or Owner's representative except in cases of emergency where life or property is in imminent danger. The Contractor may submit a request for overtime, weekend or holiday work to the Capital Projects Department for review and approval or denial, a minimum of one (1) week prior to such work. It shall be the Contractor’s responsibility to pay, as a Deductive Change Order, any overtime costs associated with such work for WCSD personnel to open/close site, provide quality assurance and quality control for such work.

WCSD has the right to reject any overtime, holiday or weekend work.

No person shall be employed for more than eight (8) hours in any one day or

more than forty (40) hours in any one week without proper overtime compensation being paid.

During occupied periods, the Contractor can only work with the WCSD's permission. During these occupied periods, the Contractor will be responsible for the complete clean-up and weatherproofing of any work each day in order that the space can be utilized for its educational purpose the next day.

The cost of these "off" hours shall be included in the bid.

When School is **Not in Session**: From 7:00 a.m. until 3:30 p.m. Monday through Friday the site will be available to the Contractor.

When School is **In Session**: From 3:30 p.m. until 11:00 p.m. Monday through Friday the site will be available to the Contractor.

e. Employment – Contractors shall comply with NRS Chapter 338.125 and Chapter 338.130 inclusively. The Contractor expressly agrees to comply with the provisions of Chapter 338.130 and further agrees that if those provisions are not complied, or any failure or refusal to comply with the provisions of Chapter 338.130, shall render this Contract VOID.

f. Statutes - All applicable provisions of NRS Chapter 338 shall apply to this project and Contract and all Contractor and Subcontractors shall comply therewith.

g. Workers' Compensation - Workers' Compensation premiums shall be paid as required by law for the duration of the Contract practices delineated under "Occupational Safety and Health" (NRS Chapter 618) and will be adhered to in all phases of construction.

8. PERMITS AND INSPECTIONS

a. Since the project site is within Washoe County, City of Reno or City of Sparks, the Contractor shall secure a building permit and arrange for all inspections through the appropriate jurisdiction. WCSD is not exempt from the requirements of these authorities.

b. Any fees charged by Washoe County, City of Reno, or City of Sparks, for permanent improvements plan checking, permits and water, sewer, electrical hook-up will be paid by WCSD.

c. The Contractor shall give all notices as required and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Specifications and/or Drawings are at variance therewith, the Contractor shall notify the Owner promptly in writing, of any necessary changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Owner, the Contractor shall bear all costs arising therefrom.

d. The Contractor shall notify the Owner when ready for final inspection.

e. Final payment shall not be made until the original closed out permit for the work has been turned over to the Owner.

9. EMPLOYEE REGULATIONS

The Contractor shall, at all times, enforce strict discipline and good order among employees and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

The Contractor shall ensure that each and every kind of work shall be performed by workmen, laborers, or mechanics especially skilled in the class of work (trade) required and that workmanship shall be of the best trade practice, regardless of the quality of materials.

The Contractor shall provide, at all times, sufficient and competent labor to carry on the work properly and ensure completion of each part in accordance with schedule and within the time agreed to.

An employee of the Contractor or Subcontractor, who is deemed incompetent, disorderly, or otherwise objectionable by the Owner, shall be removed promptly by the Contractor, and not reemployed on the work.

10. MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS

Wherever, in these specifications, a particular brand or make of item is specified, the Contractor shall comply strictly with the specifications and recommendations of that manufacturer as to the installation and/or application of that particular item.

11. REFERENCE TO SPECIFICATIONS AND TRADE NAMES

In these Specifications, wherever American Society for Testing Materials or other specifications or standards are mentioned it shall be understood that the materials or methods mentioned therewith shall conform to all requirements of the issue in effect on date of submission of bids. In these specifications whenever the trade name of a product or the name of a product or the name of a manufacturer appears it shall be understood to specify the product so identified or its "Approved Equal." The words "Or Equal" or "Approved Equal" shall mean equal in the opinion of and approved by the Owner or its representative. Refer to requirements outlined in Section 01631 - SUBSTITUTIONS.

12. NOTIFICATION TO CONTRACTOR OF WORK TO BE PERFORMED

After award of the bid, the project shall be initiated by the successful execution of a Contract and a “Notice to Proceed” has been issued by the WCSD’s Purchasing Department.

13. GUARANTEE

The Contractor shall guarantee all work and equipment provided under this Contract to be free from defects of workmanship and material for a period of **one (1) year** or as specified, from the date of final acceptance of the work, which constitutes the issuance of a Notice of Substantial Completion and shall, at Contractor's own expense, repair and replace all defective work and materials.

14. APPEAL BY UNSUCCESSFUL BIDDER

Any unsuccessful Bidder (Appellant) may appeal the results in the solicitation's RECOMMENDATION OF AWARD TABULATION if they believe applicable provisions of the law were violated.

Appellant must submit a notice of protest to the Director of Procurement and Contracts no later than five (5) business days beginning the day after the date of the ROA TABULATION.

The notice of protest must include a written statement setting forth with specificity the reasons the person filing the notice believes the applicable provisions of the law were violated.

Appellant shall submit with the notice of protest a bond (i.e., Protest Bond or Appeal Bond) with a good and solvent surety company, authorized to do business in the State of Nevada or submit other security in a form approved by WCSD, who will hold the bond or other security until a determination is made on the appeal.

The bond shall be in the amount of twenty-five percent (25%) of the total dollar value of the Appellant's bid submission, up to a maximum amount of two hundred fifty thousand dollars ($250,000).

If Appellant is not satisfied with WCSD's Director of Procurement and Contracts' response, Appellant may then appeal to an appeals committee designated by WCSD.

If Appellant is not satisfied with the appeals committee's response, Appellant may then appeal to WCSD's Board of Trustees, who will render the final decision.

WCSD will postpone any award action until after WCSD's Board of Trustees renders a final decision.

Appellant will not seek any type of judicial intervention until WCSD has rendered its final decision on the protest.

If an appeal is granted, the full amount of the posted bond will be returned to Appellant.
If the appeal is denied/not upheld, a claim may be made against the bond by WCSD for expenses suffered by WCSD as a result of the unsuccessful appeal.

WCSD is not liable for any costs, expenses, attorney's fees, loss of income, or other damages sustained by Appellant in an appeal process.

15. QUALITY ASSURANCE

It shall be the Contractor's responsibility to use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work.

16. OTHER PROJECTS

The Contractor is hereby informed that other projects may be happening at the school/ site at the same time as this project. The Contractor will make every effort to coordinate work with that of other Contractors.

17. EXISTING BUILDING AND CONDITIONS

During construction, it shall be the responsibility of the Contractor to take all reasonable precautions to preserve and protect surrounding buildings and property from damage of all kinds arising from the execution of this Contract. He/she shall repair and/or be responsible for any such damage at no additional cost to the Owner.

It is the Contractor's responsibility to identify and document any building or site damage that exists prior to the start of construction. If undocumented damage is discovered by the Owner that could have been caused as a result of the Contractor's presence it will be the Contractor's responsibility to repair the damage to the Owner's satisfaction without cost to the Owner. If the Contractor does not repair the damage to the Owner's satisfaction, then the Owner has the right after forty-eight (48) hours of written notification to repair the damage and process an Owner's Deductive Change Order for all expenses associated with the repair.

The Contractor shall provide temporary protective fencing or covering over any open trenching or excavation arising from the execution of this Contract, to keep out unauthorized persons, at no additional cost to the Owner.

The Contractor shall notify the Capital Projects Department's representative forty-eight (48) hours prior to any electrical shutdowns at the project site. Failure to do so could cause freezing and other damage due to shut down of the energy management system. The Contractor shall bear all costs for damage resulting from any failure to notify designated parties.

The Contractor shall meet with the representative of the Capital Projects Department to establish limits of work and general ground rules. As school may be in session, all safety precautions will be rigidly enforced.

Contractor shall hire a qualified, properly Licensed Contractor to test all natural gas lines within area of work for leaks prior to the start of the project and at project completion. Note all gas leaks at the start of the project and report it to the Capital

Projects Department's representative IMMEDIATELY. Contractor shall not proceed with work in area of any leaks until directed by the Capital Projects Department's representative. Gas line leaks at project completion shall be the responsibility of the Contractor and be repaired by a qualified, Licensed Contractor at no cost to the Owner. Contractor shall assume that all exposed conduit that exists within the work area is fully functional and operational for all wiring that is within the conduit at the start of the project. If at any time during construction, operations utilizing this wiring fail or are disrupted, the Contractor shall be responsible for repairs to make the operations fully functional by a qualified, Licensed Contractor at no cost to the Owner.

18. MATERIAL DISTURBANCE PERMIT

The Building Material Disturbance Permit (MDP) is a Washoe County School District (WCSD) document that identifies asbestos and lead site specific information, and it is issued by the Environmental, Safety & Assessment (ES&A) Department. A site-specific Material Disturbance Permit is required for each project. Each project and facility require a separate Material Disturbance Permit because each facility has specific information and direction regarding asbestos and lead, as each facility is different in that regard. The Material Disturbance Permit is to be requested by the Project Manager, or appointed District representative, in accordance with current Material Disturbance Permit requirements. No work can be done by a Contractor in WCSD without an MDP.

19. WATER SYSTEM DISTURBANCE

Improper closing of valves and other improperly conducted disruptions to District facilities can result in cross connections and back siphoning of chemicals and other contaminates into the water supply. Since these disturbances are very important, the District has added a water system disturbance section to the Material Disturbance Permit (MDP). Work, as a part of this contract, may involve the disturbance of a facilities water distribution system and, as such, the contractor is required to comply with the Water System Disturbance Permit Appendix section of the Material, Water & Lead Disturbance Permit for any work impacting a facility water system.

The contractor shall carefully comply with all requirements of the Material, Water & Lead Disturbance Permit, and shall be aware of this process prior to bid preparation and any construction. The permit requirements are hereby made a part of this specification and contract to the same extent as if bound herein and shall apply to all contractors and subcontractors.

The contractor shall be responsible for all costs incurred by the Washoe County School District, including the consultant, sampling and testing, clean-up, replacement of effected equipment, materials, etc., and any legal action that may result from an unauthorized disturbance of a water system caused by the contractor or his subcontractors, resulting in a cross connection or backflow incident.

If Contractors have any questions regarding the requirements of the Water System Disturbance Permit, please call the ES&A Department for the Regulated Systems Compliance & Safety Officers at (775) 325-8491.

20. ASBESTOS

The Washoe County School District has approx. 60% of our facilities that contain asbestos-containing materials. Contractors performing disturbances to asbestos-containing materials must be properly licensed and trained per the EPA AHERA regulation, as well as other Federal, State, and Local regulations.

Since so many of the facilities contain asbestos, minor construction activities many times will involve disturbance of materials which contain asbestos. These projects may involve “small scale-short duration” asbestos disturbances also termed “Attachments & Penetrations” to non-friable materials. As a part of this contract, the successful contractor will be required to include Attachments & Penetrations into the scope of their work.

a. Asbestos and the Material Disturbance Permit

The Contractor shall carefully comply with all the items of the Building Material Disturbance Permit (MDP) and shall review the permit and become familiar with its contents prior to bid preparation and any construction.

Once a Material Disturbance Permit Request is received for a specific project, building materials that have been identified as being disturbed during construction, and/or demolition, will have been tested for the presence of asbestos. These materials will be identified as asbestos-containing or non-asbestos-containing on the building Material Disturbance Permit(s) by the District’s AHERA Management Planner. The Material Disturbance Permit must be referred to before any work commences. No outside asbestos sampling of building materials, by the Contractor or a Contractor hired asbestos consultant, is allowed.

All asbestos-containing material must be handled by contractors and/or individuals trained and certified in the removal of asbestos-containing building materials. No asbestos-containing materials shall be disturbed prior to authorization from the owner. If any material is encountered that is not listed on the Material Disturbance Permit, it shall immediately be brought to the attention of the Project Manager before any work continues that might disturb this material. If any building material listed in the disturbance permit as containing asbestos is improperly disturbed, in the opinion of the District, by the Contractor or his sub-contractor/s, the District will immediately hire a third-party asbestos consultant to investigate possible asbestos contamination, and an asbestos Contractor to perform any recommended clean-up.

The Contractor shall be responsible for all costs incurred by the District including the consultant, sampling and testing, clean-up, replacement of affected equipment, materials, etc., and any legal action that may result

from an asbestos fiber release incident caused by the Contractor or his sub-contractors.

b. Asbestos Abatement (The removal of an asbestos material)

Attachments and Penetrations does not include the removal (other than drilling holes) of asbestos containing materials. Any removal of asbestos-containing materials is not an “Attachment and Penetration” activity, but rather an abatement, and any abatement of asbestos materials must be designed by an EPA AHERA certified Asbestos Project Designer. Any abatement project’s design will be the responsibility of the District to design and provide abatement specifications. Asbestos abatement (Removal) must be conducted by an asbestos abatement contractor, which will be supervised by the District and/or a District hired asbestos abatement consultant. The abatement costs will be included into the scope of this project.

c. Asbestos – Attachments & Penetrations

Attachments & Penetrations, for the purpose of this document, is the drilling of holes, installing/removing screws, installing anchors, nails, and staples in non-friable asbestos-containing materials, in which the disturbance may release asbestos fibers. Attachments & Penetrations are minor disturbances that are normal activities such as installing conduits, mounting boxes or brackets, and removing equipment anchors from asbestos containing materials. The Material Disturbance Permit will identify which materials at a specific site can be disturbed, and the minimum requirements to perform an asbestos disturbance.

d. “Small Scale-Short Duration” – WCSD Attachment & Penetration Procedures

The WCSD Attachment & Penetration Procedures that the Contractor must utilize, when identified as being required in the MDP, are available from the Project Manager. The contractor shall submit their WCSD Attachment & Penetration Procedures to the Project Manager. The Project Manager will submit the documents to the ES&A Department for approval.

The contractor can add additional requirements, but nothing required in the MDP and WCSD Attachment & Penetration Procedures may be omitted. The Contractor must submit their Attachment & Penetration Procedure to their Project Manager to get ES&A approval of these documents **prior to any disturbance.** The ES&A Department will notify the contractor upon approval of these documents.

Once the approval of the WCSD Attachment & Penetration Procedure and training certificates is received, the contractor may schedule the disturbance, but must notify the ES&A Department immediately prior to disturbing the asbestos-containing materials. The Contractor shall provide this notice by calling the ES&A Attachment & Penetration hotline at 325-8490, follow the directions, and leave a message. ES&A Department

personnel, Project Managers, Assistant Project Managers/PCI's, and other district personnel may conduct site visits to ensure compliance with the contractor's submitted and approved procedures.

e. Asbestos Training Certificates – Abatement

Abatement of asbestos-containing materials, as allowed and identified in the Material Disturbance Permit, will be done by an Asbestos Abatement Contractor, with workers that have a minimum of 32-hour AHERA asbestos training (Asbestos Worker), and supervised by an abatement supervisor with 40-hour AHERA asbestos training (Contactor/Supervisor). Workers and supervisors must also get an annual refresher certificate if the original training is greater than one year old. Contractor training certificates will be submitted to the Project Manager at least two weeks prior to the start of the project. The ES&A Department will review the submitted training documentation, verify certificates as required, and approve the abatement workers and supervisors, so they can work on the assigned WCSD project. No one that has not been approved by the ES&A Department is authorized to perform any asbestos disturbances within the WCSD.

New workers added after the start of the project will be approved by the ES&A Department within one 8-hour work period of the standard Monday thru Friday work schedule. Certification submittal will be serviced by the ES&A Department on a first come, first served basis. Delays to review the documentation will be anticipated and taken into account on any abatement schedule developed, and asbestos workers and supervisors will not be allowed to work in any way on that project until their documentation has been reviewed and approved.

f. Asbestos Training Certificates – Attachment & Penetration

Contractors performing "Attachment & Penetration" work on non-friable asbestos-containing materials, as allowed, and identified in the Material Disturbance Permit, will be required to have a minimum of 16 hours of AHERA asbestos training (Operations & Maintenance, or O&M), as well as an annual refresher certificate if the original training is greater than one year old. Contractor training certificates will be submitted to the Project Manager at least two weeks prior to the start of the project. The ES&A Department will review the submitted training documentation, verify certificates as required, and approve the Attachment & Penetration technicians, so they can work on the assigned WCSD project. No one that has not been approved by the ES&A Department is authorized to perform any asbestos disturbances within the WCSD.

New workers added after the start of the project will be approved by the ES&A Department within one 8-hour work period of the standard Monday thru Friday work schedule. Certification submittal will be serviced by the ES&A Department on a first come, first served basis. Delays to review the documentation will be anticipated and taken into account on any Attachment & Penetration schedule developed, and Attachment & Penetration

technicians will not be allowed to work in any way on that project until their documentation has been reviewed and approved.

g. Asbestos Air Sampling, Respiratory Protection, and Protective Suits

Asbestos personal air sampling is required during any asbestos disturbance. Asbestos air sampling results will be supplied to the ES&A Department, and the Project Manager, within 48 hours of the completion of a disturbance. Laboratory results will be emailed directly to the ES&A Department from the laboratory providing analysis. Handwritten results will not be allowed. Regardless of air sampling results, Contractors will not be allowed to submit a Negative Exposure Assessment so that they can discontinue the use of respirators and personal protective suits. The District reserves the right to require this requirement, to reduce the long-term exposure liability from Contractors and their workers, which have disturbed this owner's asbestos materials.

If training certificates are issued for a class, those training certificates need to be submitted. Wallet cards will not be accepted as a training certificate unless no training certificate is provided by the training provider. In order for a wallet card to be accepted, the contractor will supply a letter from the training provider stating that no training certificate was provided, and only wallet cards were supplied to attendees. Wallet cards are less desirable due to their small size and mitigate the ability to clearly read and verify all the information on the card. Contractors are encouraged to request a full size 8 ½" x 11" training certificate from their training providers.

21. LEAD PAINTS, COATINGS, CERAMIC TILE, AND LEAD-CONTAINING MATERIALS IN WCSD FACILITIES

a. Lead-containing paints, coatings, ceramic tile, and lead materials are present in WCSD facilities.

Bidders/Contractors that disturb lead-containing or potentially lead-containing paints, coatings, ceramic tile, and lead-containing materials, by law, are required to know all applicable regulations, and comply with all state and federal regulations that apply to the disturbances to lead-containing paints, coatings, ceramic tile, and lead-containing materials they are conducting. The regulations that are recommended by the District for a contractor to be properly trained and knowledgeable related to lead disturbances, includes, but is not limited to, the following:

OSHA Regulation CFR 1926.62 – Lead & Appendix A, B, C, & D – Lead Construction Standard.
OSHA Regulation CFR 1910. 1025 - Lead & Appendix A, B, C, & D – General Industry Standard.
EPA, 40 CFR Part 745 – Lead; Renovation, Repair, and Painting Regulation.

b. Lead and the Material Disturbance Permit

The Contractor shall carefully comply with all items of the Building Material Disturbance Permit (MDP) and shall review the permit and become familiar with its contents prior to bid preparation and any construction.

Once a Material Disturbance Permit request is received for a specific project, building materials that have been identified as being disturbed during construction, and/or demolition, will have been tested for the presence of lead. These materials will be identified as lead-containing or not lead-containing on the building Material Disturbance Permit(s) by the District's ES&A Staff. The Material Disturbance Permit must be referred to before any work commences. **No outside lead sampling of building materials, by the Contractor or a Contractor hired lead consultant, is allowed.**

All lead-containing materials must be handled by contractors and/or individuals trained and certified to perform lead disturbances. No lead-containing materials shall be disturbed prior to authorization from the owner. If any building material listed in the disturbance permit as lead-containing are improperly disturbed, in the opinion of the District, by the Contractor or his sub-contractor, the District will immediately hire a third-party lead consultant to investigate possible lead contamination, and a lead removal Contractor to perform any recommended clean-up.

The Contractor shall be responsible for all costs incurred by the District, including the consultant, sampling and testing, clean-up, replacement of the affected equipment, materials, etc., and any legal action that may result from a lead contamination incident caused by the Contractor or his sub-contractors.

Bidders/Contractors accept and acknowledge, by signing the Material Disturbance Permit, the existence of lead related regulations, and accept all liability related to the disturbance of lead-containing materials, citations resulting from, or any other costs the District may incur by the action of all parties of the bidders' company or companies hired by the successful bidder to complete this project.

c. Construction Age of Buildings in the District

At the conception of adding lead information to MDP's, it was thought that lead-containing paints, coatings, and ceramic tile were much more likely to be present on more surfaces in the District's older facilities. However, recent sampling has shown lead containing paints, coatings and ceramic tiles DO routinely exist, even in our newest facilities. Due to that finding, the age of buildings is not as important as was originally thought. We are still providing construction date information in MDP's because lead-based paint >5000 ppm is much less likely in facilities built after 1978.

d. Pre – 1978 WCSD Buildings

Paint and coating sampling have shown that paints and coatings contain some levels of lead in the Districts' Pre-1978 facilities. Therefore, all persons performing **any** disturbance to coatings or paints in our Pre-1978 constructed facilities must utilize lead safe work practices. In addition, any person performing **any** disturbance to paints, coatings, ceramic tile, and lead-containing materials must have taken an OSHA lead action level training class from a WCSD ES&A Department approved training provider. If identified as lead-containing, the Contractor will be required to perform all disturbances as per the MDP, WCSD provided lead specification, and all local, state, and federal regulations.

e. Post – 1978 WCSD Buildings

While it was originally thought that paints and coatings on materials other than metal surfaces and ceramic tile typically did not contain lead in WCSD post – 1978 constructed facilities, sampling has shown that is not the case. The MDP will provide specific historical sampling that has been conducted in the District facilities. If past sampling has shown the presence of lead-containing paints and coatings in the facility, the Contractor will be required to treat all painted and coated surfaces as lead-containing. If identified as lead-containing, the Contractor will be required to perform all disturbances as per the MDP, WCSD provided lead specification, and all local, state, and federal regulations.

The MDP will state all buildings identified above were constructed after 1978. While it was originally thought that paints, coatings and ceramic wall tile are less likely to contain lead in newer WCSD facilities, recent sampling has shown lead-containing paints, coatings, and ceramic tiles DO routinely exist, even in our newest facilities. Due to that finding, Contractors must treat all paints, coatings, and ceramic tile as lead-containing unless WCSD project sampling has proven otherwise, and it will be deemed negative within the MDP and the project scope. **The Bidder/Contractor must comply with all lead-containing or assumed lead-containing paint and coating disturbance instructions and requirements listed in the MDP, District provided lead specifications, and all local, state, and federal regulations, unless the material has been proven, to the satisfaction of the District, that said materials do not contain lead.**

f. Lead Removal (The removal of a lead-containing material)

Attachments and Penetrations does not include any removal, demo, welding, sanding, abrading, sandblasting, cutting, grinding, heating, and torch cutting of lead-containing materials, and is not an "Attachment and Penetration" disturbance. These activities must be designed by an EPA Certified Lead Consultant. The project's design for the above-listed activities will be the responsibility of the District to design and provide the specs as a part of this bid package. Lead activities listed above must be conducted by a lead removal contractor, which will be supervised by the

District and/or District hired EPA Certified Lead Consultant. The lead activities costs will be included into the scope of each project.

g. Lead Attachments & Penetrations

Attachments & penetrations, for the purpose of this document, is the drilling of holes, installing/removing screws, installing anchors, nails, and staples, in which the disturbance may release lead dust. Attachments and Penetrations are minor disturbances that are normal activities such as installing conduits, mounting boxes or brackets, and removing equipment anchors from lead-containing materials. The Material Disturbance Permit will identify which materials at a specific site can be disturbed, and the minimum requirements to perform a lead disturbance.

h. Lead Safe Work Practices – WCSD Attachment & Penetration Procedures

The WCSD Attachment & Penetration Procedures that the Contractor must utilize, when identified as being required in the MDP, are available from the Project Manager. The contractor shall submit their WCSD Attachment & Penetration Procedures to the Project Manager. The Project Manager will submit the documents to the ES&A Department for approval.

The contractor can add additional requirements, but nothing required in the MDP and WCSD Attachment & Penetration Procedures may be omitted. The Contractor must submit their Attachment & Penetration Procedure to their Project Manager to get ES&A approval of these documents **prior to any disturbance.** The ES&A Department will notify the contractor upon approval of these documents.

Once the approval of the WCSD Attachment & Penetration Procedure and training certificates is received, the contractor may schedule the disturbance, but must notify the ES&A Department immediately prior to disturbing the lead-containing materials. The Contractor shall provide this notice by calling the ES&A Attachment & Penetration hotline at 325-8490, follow the directions, and leave a message. ES&A Department personnel, Project Managers, Assistant Project Managers/PCI's, and other district personnel may conduct site visits to ensure compliance with the contractor's submitted and approved procedures.

i. Lead Training Certificates – Removal and Attachments & Penetrations

The health and safety of all occupants of the WCSD facilities is the number one priority of the District. To that end, technicians performing disturbances to lead-containing materials must have adequate training. Contractors performing lead disturbances, as allowed and identified in the Material Disturbance Permit, will be required to have a minimum of "OSHA Lead Action Level" training, as well as an annual OSHA Lead Action Level training certificate if the original training is greater than one year old, before being approved to perform lead disturbances. OSHA Lead Action Level training will be conducted in accordance with OSHA 1926.62(l)(2)(i) thru

(viii) and all required topics identified in this standard will be completed to include:

- 1926.62(l)(2)(i) The content of this standard and its appendices;
- 1926.62(l)(2)(ii) The specific nature of the operations which could result in exposure to lead above the action level;
- 1926.62(l)(2)(iii) The purpose, proper selection, fitting, use, and limitations of respirators;
- 1926.62(l)(2)(iv) The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant);
- 1926.62(l)(2)(v) The engineering controls and work practices associated with the employee's job assignment including training of employees to follow relevant good work practices described in Appendix B of this section;
- 1926.62(l)(2)(vi) The contents of any compliance plan in effect;
- 1926.62(l)(2)(vii) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and
- 1926.62(l)(2)(viii) The employee's right of access to records under 29 CFR 1910.20.

Certificates of Training showing that technicians have successfully completed an OSHA Lead Action Level course and are required to be properly submitted and approved by the District's ES&A Department prior to any Contractor's technician performing any disturbances to lead-containing or assumed lead-containing paints or coatings, or any other lead-containing materials. The training certificate must have "OSHA Lead Action Level Training" clearly identified on the training certificate and should have a sentence that states that the training topics covered in the class meet or exceed the training topics of OSHA 1926.62(l)(2)(i) thru (viii).

If training certificates are issued for a class, those training certificates need to be submitted. Wallet cards will not be accepted as training certificates unless no training certificate is provided by the training provider. In order for a wallet card to be accepted, the contractor will supply a letter from the training provider stating that no training certificate was provided, and only wallet cards were supplied to attendees. Wallet cards are less desirable due to their small size and mitigate the ability to clearly read and verify all the information on the card. Contractors are encouraged to request a full size 8 ½" x 11" training certificate from their training providers.
It is important that Contractor's planning on doing the lead work within the District become familiar with the lead training requirements, and spend the

time confirming that the lead classes being taken are truly an OSHA Lead Action Level course, and not a lead awareness course as identified above. Many training providers have differing training class titles on their lead classes, but only training certificates that are noted as above will be accepted to fulfill the listed District's training requirements. Contractors requiring training are responsible in providing the training providers a clear understanding of what training is required.

Full Lead worker initial and annual training certificates that comply with adjacent state requirements for lead worker certification, will be accepted in lieu of the OSHA Lead Action Level training certificate, as long as they are titled "Lead Worker" and then accompanied with a letter from the training provider certifying that the topics identified in OSHA 1926.62(l)(2)(i) thru (viii) were covered in that class. Contractors are responsible with ensuring and verifying training certificates meet the above-listed requirements. Training certificates that do not have "OSHA Lead Action Level or Lead Worker" will not be accepted or submitted.

Contractor training certificates will be submitted to the Project Manager at least two weeks prior to the start of the project. The ES&A Department will review the submitted training documentation and must pre-approve workers so they can work on the assigned WCSD project. No one that has not been approved by the ES&A Department is authorized to perform any lead disturbances.

New workers added after the start of the project will be approved by the ES&A Department within one 8-hour work period of the standard Monday thru Friday work schedule. Certification submittal will be serviced by the ES&A Department on a first come, first served basis. Delays to review the documentation will be anticipated and taken into account on any Removal or Attachment & Penetration schedule developed, and Removal and/or Attachment & Penetration technicians will not be allowed to work in any way on that project until their documentation has been reviewed and approved.

j. Renovation, Repair & Painting Regulations (RR&P) - 40 CFR Part 745.81

Effective April 22, 2010, contractors will be required to be trained and registered with the EPA to conduct regulation applicable renovations, repairs and painting (RR&P) in all **elementary schools or child occupied District facilities constructed prior to 1978 when lead-based paints and coatings are being disturbed**. Contractors are reminded that there are some childcare facilities in middle and high school locations, and the RR&P would apply at those locations as outlined in the RR&P regulation requirements. http://www.epa.gov/lead/pubs/steps.pdf

In general, all firms that disturb 6 square feet of **lead-based** painted surface per room on the interior, or 20 square feet on the exterior, within a 30 day period in **this** facility, must comply with the EPA's Renovation, Repair and Painting (RR&P) regulation **and** must be registered with the federal EPA. Per the Regulation, the area of disturbance is calculated by adding up the entire

surface areas being removed/disturbed, which then determines the amount of painted surface area disturbed. Work that involves window replacement or demolition of a painted surface, the EPA RR&P regulation applies regardless of size if lead-based paint is present.

The District requires all workers in RR&P projects involving lead disturbances to have, at a minimum, OSHA lead action level training. This regulation also requires that the contractor must assign an EPA RR&P certified renovator that is responsible for ensuring and documenting all work is conducted in compliance with the EPA RR&P regulation. There are extensive record keeping and notification requirements that the Contractor must perform. All workers with the minimum OSHA lead action level training, but are not EPA RR&P certified renovator trained, must be trained and supervised by the EPA RR&P certified renovator.

On a RR&P project, Contractors must have a minimum of one EPA RR&P certified renovator on-site that has successfully attended and passed a 8-hour EPA accredited renovator training course before working in any elementary schools or child occupied District facilities constructed prior to 1978. The renovator's training certification must remain current. Recertification requirements through the attendance of refresher courses are a requirement of this regulation. The renovator must be on-site throughout the project. The certified renovator is responsible for ensuring that lead safe work practices are utilized per this EPA RR&P regulation, as well as per all District lead requirements and policies that may be more stringent than the EPA and OSHA regulations.

The EPA RR&P regulation requires that personnel disturbing lead containing materials utilize lead safe work practices as identified in the EPA guidance document titled **"steps to lead safe renovation, repair and painting", pages 12 through 23**. This document is available electronically at http://www.epa.gov/lead/pubs/steps.pdf. The contractor shall submit lead safe work practice procedures, and all RR&P and OSHA lead action level training certificates to the Project Manager at least two weeks prior to the start of the project. The ES&A Department will review the submitted training documentation and must pre-approve workers so they can work on the assigned WCSD project. No one that has not been approved by the ES&A Department is authorized to perform any lead disturbances.

New workers added after the start of the project will be approved by the ES&A Department within one 8-hour work period of the standard Monday thru Friday work schedule. Certification submittal will be serviced by the ES&A Department on a first come, first served basis. Delays to review the documentation will be anticipated and taken into account on any RR&P project schedule developed, and EPA RR&P certified renovators and workers will not be allowed to work in any way on that project until their documentation has been reviewed and approved.

This is a general overview of the regulation and the contractor must refer to the regulation for additional requirements and information. Fines are expensive and are levied toward the Contractor not the owner, so compliance with this regulation is very important, and it is important that Bidders/Contractors are well versed in this regulation.

k. Lead Air Sampling, Respiratory Protection and Protective Suits

Lead personal air sampling is required during any lead disturbance. Lead air sampling results will be supplied to the ES&A Department, and the Project Manager, within 48 hours of the completion of a disturbance. Laboratory results will be emailed directly to the ES&A Department from the laboratory providing analysis. Handwritten results will not be allowed. Regardless of air sampling results, Contractors will not be allowed to submit a Negative Exposure Assessment so that they can discontinue the use of respirators and personal protective suits. The District reserves the right to require this requirement, to reduce the long-term exposure liability from Contractors and their workers, which have disturbed this owner's lead materials.

22. INDOOR ENVIRONMENTAL QUALITY

Preventative job site practices will reduce the potential for residual problems with indoor air quality in completed buildings and reduce undue health risks for all workers. The following are the minimum standards required by the WCSD for on-site construction in the district.

a. Existing HVAC System:
When feasible, the HVAC system for the project area will be shut down for the duration of the project. If occupied spaces will be adversely affected by the shut-down of the system, construction area return registers should be sealed with polyethylene sheeting and secured as an alternative. Registers must be sealed prior to the start of work.

b. Separating Occupied Spaces From Non-Occupied:
Keep work areas separate from occupied spaces with polyethylene sheeting (or similar) if there are no other natural barriers in place OR in spaces where air exchange will occur around the barriers.

c. Ventilation:
During the installation of carpet, paints, furnishings and any other VOC emitting products, provide "spot" ventilation during application/installation and for at least 24 hours after the work is completed. In most cases, opening windows and doors will not be enough to effectively exhaust contaminants. It is recommended that an exhaust fan be used to pull polluted air out of the building. This can be accomplished by placing a fan in a window or door and temporarily sealing any opening around the fan with plastic. Additionally, a door or window at the opposite end of the room should be opened to allow fresh, outdoor air to flow across the work area and sweep polluted air out through the exhaust fan. As long as odors are present, the temporary exhaust

ventilation must continue to operate. This may include nights and weekends, as necessary. Ventilation should continue for a minimum of 24 hours after the completion of the project or until there are no more noticeable odors.

d. Construction Dust:
Minimize the amount of dust in the air and on surfaces. Examples include the use of vacuum assisted drywall sanding equipment and the use of vacuums instead of brooms to clean construction dust from floors.

e. After Hours Scheduling:
Schedule high dust generating operations or extreme noise generating activities for after normal working hours. (i.e. saw cutting, jack hammering) and install temporary barriers to confine dust, as necessary.

f. Gasoline/Diesel Powered Equipment:
Electric powered equipment must be used in lieu of diesel or gasoline powered equipment. Gas and diesel equipment may not be used inside a WCSD building or near an outdoor fresh air building intake.

g. Material Safety Data Sheets (MSDS):
MSDS must be made be maintained onsite and made available upon request as required by federal law.

h. Construction Completion:
Prior to the occupancy of the building but after the installation of new furniture, carpet, etc., the building should be flushed with 100% outside air for one to three days.

i. Air Filters:
Replace all filtration media immediately at the conclusion of the job.

j. Monitoring Air Quality:
Indoor air quality monitoring will be conducted randomly throughout the project. Results and any recommendations will be communicated through the building inspector to construction management.

k. Pre-Construction Work Area Inspection:
Any overhead work including roof, the Contractor shall conduct a pre room condition walk through with WCSD Project Manager to determine the level of cleanliness that will be expected at completion of project. Contractor shall be responsible for cleaning all exposed surfaces within the facility beneath the work area. At the completion of the project, the Contractor shall clean all exposed surfaces within the facility beneath the aforementioned work area including but not limited to all shelving, duct, lighting, flooring, furniture, etc.

23. LOCK OUT TAG OUT (LOTO) PROCEDURE

Contractor will be responsible for the isolation and termination of all building systems that may be impacted by the scope of work within this bid. Contractor will coordinate all shut-down processes with the construction manager prior to any shutdowns up to and including Lock Out Tag Out procedures 24 hours prior to any shutdowns. WCSD will make the final determination of which systems and location shall be isolated. All Lock Out Tag Out will be performed at main service panel.

SECTION 00830 - TECHNICAL SPECIFICATIONS

I. SUMMARY OF THE WORK:

The work shall include the furnishing of all labor, tools, equipment, material, transportation and the performance of all operations required for the **Mechanical Upgrades at Jerry Whitehead Elementary School** at the site(s) and associated work as specified herein and shall include the cleanup and removal from the site(s) of all debris resulting from the operations performed. It shall also be the Contractor's responsibility to take all necessary safety precautions and to furnish barricades and/or other safety measures as required.

All work shall be performed in strict accordance with the requirements of these specifications and any and all appropriate state, county and local ordinances.

II. LOCATION OF THE WORK:

The location(s) of the work and contact person(s) are:

Jerry Whitehead Elementary School
3570 Waterfall Drive
Sparks, NV 89434
Phone #: 775-626-5200
Principal: Denise Paul
Site Facilities Coordinator: Greg Hall

The Contractor is urged to examine the site(s) and compare the existing conditions with that of the work outlined. No extra payment will be considered for work additional to that shown or noted if such work would have been apparent in an inspection of the premises.

To review the existing premises, contact the Principal and/or Site Facilities Coordinator at the site(s). **Whenever at the site, be sure to check in at the front office**.

At the above-named site(s), school classes and other construction projects may or may not be taking place during the construction phase. It will require coordination between the school site(s), other vendors, and the WCSD's Capital Projects Department.

III. QUESTIONS & CLARIFICATIONS:

For questions and clarifications regarding the Technical Specifications, Drawings, General Conditions, Special Conditions, Bidding and Contract Information contact the Purchasing Department at solicitations@washoeschools.net. **All questions shall be submitted in writing directly to WCSD's Solicitations website at http://solicitations.washoeschools.net/ or via e-mail to solicitations@washoeschools.net by 4:30 p.m. (Local Time) on June 11, 2025.**

IV. MANUFACTURERS:

Manufacturers, types, model numbers and execution as detailed on the drawings.

V. ASBESTOS ASSESSMENT:

The Material, Water & Lead Disturbance Permit(s) are included in the Special Conditions section of the Specifications.

2024-2025 Balanced Calendar

July 2024							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 0
	1	2	3	4	5	6	
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30	31				

August 2024							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 15
				1	2	3	August 6 - 8 - Teacher Professional Dev. Days
4	5	6	7	8	9	10	August 9 - Teacher Work Day
11	12	13	14	15	16	17	August 12 - First Day of School for Students
18	19	20	21	22	23	24	August 12 - 16 - Kindergarten Testing Week
25	26	27	28	29	30	31	August 19 - First Day of Kindergarten

September 2024							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 20
1	2	3	4	5	6	7	September 2 - Labor Day
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30						

October 2024							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 17
		1	2	3	4	5	
6	7	8	9	10	11	12	October 7 - 11 - Fall Break
13	14	15	16	17	18	19	October 18 - End of Grading Period
20	21	22	23	24	25	26	October 18, 21 - 24 - Conference Week
27	28	29	30	31			October 25 - Nevada Day Observance

November 2024							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 17
					1	2	
3	4	5*	6	7	8	9	November 5 - Election Day (See * below)
10	11	12	13	14	15	16	November 11 - Veterans Day
17	18	19	20	21	22	23	
24	25	26	27	28	29	30	November 27 - 29 - Thanksgiving Break

December 2024							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 14
1	2	3	4	5	6	7	
8	9	10	11	12	13	14	December 19 - End of Grading Period
15	16	17	18	19	20	21	December 20 - Teacher Work Day
22	23	24	25	26	27	28	December 23 - January 3 - Winter Break
29	30	31					

January 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 19
			1	2	3	4	January 1 - 3 - Winter Break
5	6	7	8	9	10	11	January 6 - School Resumes
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	January 20 - Martin Luther King, Jr. Day
26	27	28	29	30	31		

February 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 19
						1	
2	3	4	5	6	7	8	
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	February 17 - President's Day
23	24	25	26	27	28		* February 24 - 28 - Spring Conference Week for some elementary schools. Please check with your school for details.

March 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 11
						1	
2	3	4	5	6	7	8	March 4 - College and Career Readiness Assessment for high schools only. Awaiting confirmation from NDE.
9	10	11	12	13	14	15	March 14 - End of Grading Period
16	17	18	19	20	21	22	March 17 - 28 - Spring Break
23	24	25	26	27	28	29	
30	31						

April 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 22
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30				

May 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 21
				1	2	3	
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	May 26 - Memorial Day

June 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 5
1	2	3	4	5	6	7	June 6 - End of Grading Period
8	9	10	11	12	13	14	June 6 - Last Day of School
15	16	17	18	19	20	21	June 9, 10, 11 - Contingency Days
22	23	24	25	26	27	28	June 19 - Juneteenth
29	30						

*November 5, 2024 is a non-student day used for professional development but counted as a day in session per NAC 387.140 (2a).

Number of Days Per Quarter	44	39	48	49	180
Number of Days Per Semester	83		97		180
Contingency Days: June 9, 10, 11					

Teacher Work Days: August 6 - 9, December 20

Teacher Professional Dev Day. November 5

2025-2026 INCLINE CALENDAR

July 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 0
		1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

August 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 10
					1	2	
3	4	5	6	7	8	9	August 12 - 14 - Teacher Professional Dev. Days
10	11	12	13	14	15	16	August 15 - Teacher Work Day
17	18	19	20	21	22	23	August 18 - First Day of School for Students
24	25	26	27	28	29	30	August 18 - 22 - Kindergarten Testing Week August 25 - First Day of Kindergarten

September 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 21
	1	2	3	4	5	6	September 1 - Labor Day
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30					

October 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 17
			1	2	3	4	October 6 - 10 - Fall Break
5	6	7	8	9	10	11	October 13 - Teacher Professional Dev. Day
12	13*	14	15	16	17	18	October 24, 27-30 - Conference Week
19	20	21	22	23	24	25	October 30 - End of Grading Period
26	27	28	29	30	31		October 31 - Nevada Day

November 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 16
						1	
2	3	4	5	6	7	8	
9	10	11	12	13	14	15	November 11 - Veterans Day
16	17	18	19	20	21	22	November 26 - 28 - Thanksgiving Break
23	24	25	26	27	28	29	

December 2025							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 15
	1	2	3	4	5	6	
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30	31				December 22 - January 2 - Winter Break

January 2026							No School on Shaded Days
J	M	T	W	TH	F	S	# of School Days = 19
				1	2	3	
4	5*	6	7	8	9	10	January 5 - Teacher Professional Dev. Day
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	January 19 - Martin Luther King, Jr. Day
25	26	27	28	29	30	31	January 23 - End of Grading Period

February 2026							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 15
1	2	3	4	5	6	7	
8	9	10	11	12	13	14	February 16 - President's Day
15	16	17	18	19	20	21	February 17 - 20 - Incline Break
22	23	24	25	26	27	28	

March 2026							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 22
1	2	3	4	5	6	7	March 3 - College and Career Readiness Assessment for high schools only. Awaiting confirmation from NDE.
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30	31					

April 2026							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 17
			1	2	3	4	April 3 - End of Grading Period
5	6	7	8	9	10	11	April 6 - 10 - Spring Break
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30			

May 2026							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 20
					1	2	
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	
17	18	19	20	21	22	23	
24	25	26	27	28	29	30	May 25 - Memorial Day

June 2026							No School on Shaded Days
S	M	T	W	TH	F	S	# of School Days = 8
	1	2	3	4	5	6	June 9 - Primary Election
7	8	9*	10	11	12	13	June 10 - End of Grading Period
14	15	16	17	18	19	20	June 10 - Last Day of School
21	22	23	24	25	26	27	June 11 - Teacher Work Day
28	29	30					June 11, 12, 15 - Contingency Days
							June 19 - Juneteenth

* October 13, 2025 & January 5, June 9, 2026 is a non-student day used for professional development but counted as a day in session per NAC 387.120 (4)

Number of Days per Quarter	48	45	45	42	180
Number of Days per Semester	93		87		180
Contingency Days: June 11, 12, 15					

Teacher Work Days: August 12 - 15, June 11
Teacher Professional Dev Days: October 13, 2025 & January 5, June 9, 2026

WASHOE COUNTY SCHOOL DISTRICT

MATERIAL, WATER, AND LEAD DISTURBANCE PERMIT

FACILITY AND MATERIAL LOCATION: Whitehead ES **MDP #24-348**

DESCRIPTION OF WORK TO BE PERFORMED: Upgrade Cooling System

IT IS THE RESPONSIBILITY OF THE CONTRACTOR/WORKER TO IDENTIFY MATERIAL TYPE PRIOR TO DISTURBANCE. ONLY MATERIALS LISTED ON THIS PERMIT MAY BE DISTURBED. ANY NEW MATERIAL DISCOVERED OR ANY MATERIAL WHOSE EXACT NATURE OR CHARACTER IS UNCERTAIN REQUIRES A NEW PERMIT PRIOR TO DISTURBANCE. ANY CITATIONS OR ASBESTOS/LEAD CONTAMINATION RESULTING FROM THE IMPROPER OR UNAUTHORIZED DISTURBANCE OF ASBESTOS OR LEAD MATERIALS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. A COPY OF THIS PERMIT MUST BE SIGNED BY THE CONTRACTOR AND SUBMITTED TO THE DISTRICT PRIOR TO STARTING THE PROJECT.

ALL ITEMS	MATERIAL DESCRIPTION: **SEE FACS REPORT**
AHERA MATERIAL NUMBER: N/A	CONTAINS ASBESTOS ?: **SEE FACS REPORT**
MATERIAL DISTURBANCE INSTRUCTIONS: MATERIAL DISTURBANCE INSTRUCTIONS: THE PLANNING DEPARTMENT USED AN OUTSIDE CONSULTING COMPANY (FACS) TO CREATE AN ASBESTOS AND LEAD ASSESSMENT FOR THIS PROJECT. FOR LEAD AND ASBESTOS INFORMATION REFER TO THE FACS REPORT DATED 9/17/24. ANY QUESTIONS RELATED TO ASBESTOS AND LEAD CONTENT, OR DISTURBANCE REQUIREMENTS SHOULD BE ADDRESSED TO THE PLANNING DEPARTMENT, PROJECT MANAGER, OR FACS.	

NOTE: THE ASBESTOS MATERIAL DISTURBANCE INSTRUCTIONS LISTED ABOVE ARE BASED ON THE AHERA REGULATION. THERE MAY EXIST OTHER REGULATIONS THAT MAY BE MORE STRINGENT THEN THESE RECOMMENDATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE COMPLIANCE WITH ALL REGULATIONS THAT ARE APPLICABLE TO THE DISTURBANCE OF ASBESTOS/LEAD CONTAINING MATERIALS. ASBESTOS IS A MICROSCOPIC FIBER AND THE CLEANING OF ASBESTOS DEBRIS MUST BE CONDUCTED TO A MICROSCOPIC LEVEL. IN THE EVENT THAT ANY VISIBLE DEBRIS IS DISCOVERED FROM A DISTURBANCE OR AIR SAMPLING RESULTS ARE NOT PROVIDED TO THE DISTRICT, THE DISTRICT WILL IMMEDIATELY HIRE A THIRD PARTY LEAD/ASBESTOS CONSULTANT TO INVESTIGATE POSSIBLE LEAD/ASBESTOS CONTAMINATION AND AN LEAD/ASBESTOS ABATEMENT CONTRACTOR TO PERFORM ANY RECOMMENDED CLEAN-UP. THE CONTRACTOR WILL BE REQUIRED TO REIMBURSE THE DISTRICT FOR ALL COSTS INCURRED. IF AIR MONITORING IS REQUIRED, AIR MONITORING MUST BE CONDUCTED THROUGHOUT THE PROJECT. AIR MONITORING RESULTS FAXED DIRECTLY FROM THE LAB TO THE ES&A DEPARTMENT @ 851-5695, WITHIN 48 HOURS OF THE DISTURBANCE

DATE ISSUED: October 16, 2024

WASHOE COUNTY SCHOOL DISTRICT
MATERIAL, WATER, AND LEAD DISTURBANCE PERMIT
CONTINUATION PAGE

Material Water & Lead Disturbance Permit, Water System Disturbance Permit Appendix Page #1

Contractors, their sub-contractors or workers are responsible in completing all work without impacting the water quality of District facilities and the domestic water supplies which feed district facilities. This Water System Disturbance Permit identifies the minimum requirements that Contractors, their sub-contractors and all workers will utilize to perform disturbance to the Districts water systems.

The following general requirements shall apply to any person who will be disturbing a District water system. In addition, they must contact the Environmental, Safety and Assessment Department (ES&A Dept) prior to any disturbance at 325-8494. This phone number has an answering machine and can be accessed 24 hours a day. These disturbances will be logged in and documented by the ES&A department.

All requirements for isolation are designed to protect the facility's potable water source from existing as well as potential cross-connections and to prevent any backflow occurrences in the form of backpressure or backsiphonage. The Water Disturbance Procedures listed are not site or incident specific and great care must be taken by technicians during all valving and isolation activities within a facility to prevent a potential backflow occurrence. There may be additional requirements that must be utilized to prevent any cross-connection or backflow occurrence, and each entity performing the disturbance is responsible for ensuring none occur and utilizing any additional steps as necessary to ensure none result from the completion of this project.

Any costs to correct any cross-connections and/or any backflow occurrences that result from the performance of this project are solely the responsibility of the Contractor, their sub-contractor and workers and the signing of this ES&A Department Disturbance Permit on acknowledges and agrees to this requirement.

FACILITY ISOLATION MINIMUM REQUIREMENTS

MECHANICAL ROOMS:

When turning off or disrupting the water service to a mechanical room all applicable requirements below must be conducted per this permit

1. **Remove all hoses from custodial faucets and bibs in location to be effected.**
2. **Shut down all boiler and chiller circulating pumps. Heating, Cooling and Domestic.**
3. **Shut down boiler, chiller and cooling tower if present.**
4. **Isolate boiler, cooling tower, chiller and relieve pressure from boiler.**
5. **Shut down hot water return pump, isolate any hot water heaters and turn off heating source.**
6. **Isolate domestic service to mechanical room.**
7. **Re-establish service to mechanical room in reverse order.**

BASIC WING:

When turning off or disrupting the water service to a facility wing all applicable requirements below must be conducted per this permit

1. **Remove all hoses from custodial, art and science faucets along with bibs in location to be effected.**
2. **Isolate all water utilizing chemical dispensers in location to be effected.**
3. **Shut down and isolate any water using equipment if applicable. Hot water heaters, domestic make ups for heat exchangers, photo labs, etc.**
4. **Isolate domestic cold water main to wing.**
5. **Re-establish service to wing in reverse order. Flush system at the end of each lateral to remove any and all foreign material and air.**

WASHOE COUNTY SCHOOL DISTRICT
MATERIAL, WATER, AND LEAD DISTURBANCE PERMIT
CONTINUATION PAGE

Material Water & Lead Disturbance Permit, Water System Disturbance Permit Appendix Page #2

FACILITY:

When turning off or disrupting the water service to a facility all applicable requirements below must be conducted per this permit. Turning off or disturbing the waters services to a facility should only be done as a last resort. If it is possible to isolate the area of disturbance without disrupting facilities entire water service that is the way the project is to be accomplished. This will also keep the contractor, his sub-contractors or workers from having to perform all the listed requirements.

1. **Remove all hoses from custodial, art and science faucets along with bibs in entire facility.**
2. **Isolate mechanical room. See above requirements.**
3. **Isolate each individual wing where possible. See above requirements.**
4. **Isolate all irrigation laterals connected to the domestic potable water supply.**
5. **Isolate domestic cold water main at all locations present to allow as little drain back as possible.**
6. **Re-establish service to facility in reverse order. Flush system at the end of each lateral to remove any foreign material and air.**

WASHOE COUNTY SCHOOL DISTRICT
MATERIAL, WATER, AND LEAD DISTURBANCE PERMIT
CONTINUATION PAGE

PAINTS AND COATINGS – Material Disturbance Permit Appendix - Lead in Paints and Coatings in WCSD Facilities

Lead containing paints and coating are present in WCSD facilities. Bidders/Contractors that disturb lead containing or potentially lead containing paints or coatings, by law, are required to know all applicable regulations applicable and comply with all state and federal regulations that apply to the disturbances to lead paints and coating they are conducting. The regulations that requires by a contractor to be properly trained and knowledgeable, related to lead disturbance includes, but is not limited to the following:

- **OSHA Regulation CFR 1926.62 – Lead & Appendix A, B, C, & D – Lead Construction Standard.**
- **OSHA Regulation CFR 1910. 1025 - Lead & Appendix A, B, C, & D – General Industry Standard.**
- **EPA, 40 CFR Part 745 – Lead; Renovation, Repair, and Painting Regulation.**

Bidders/Contractors accept and acknowledge by signing this Material Disturbance Permit, the existence of lead related regulations, and accept all liability related to the disturbance of lead containing materials, citation resulting from, or any other costs the District may incur by the action of all parties of the bidders company or companies hired by the successful bidder to complete this project.

LEAD CATEGORY #N/A	**PAINTS, COATINGS & CERAMIC TILE IN BUILDINGS**
CONTAINS LEAD?: **SEE FACS REPORT**	**Buildings:** ALL

Lead Containing or Assumed Lead Containing Paints and Coatings Disturbance Instructions

The planning department used FACS to create an asbestos and lead assessment for this project. For lead and asbestos information refer to the FACS report dated 9/17/24.

OSHA Requirements

All persons performing any disturbance to coatings or paints to paints and coating in and on the buildings listed above must have taken an OSHA lead action level training class from a WCSD, ES&A department approved training provider, and utilize lead safe work practices. In addition, all work must be completed, as a minimum, utilizing the lead safe work practices identified in the EPA guidance document titled "steps to lead safe renovation, repair and painting", pages 12 thru 23. This document is available electronically at the following link: HTTP://WWW.EPA.GOV/LEAD/PUBS/STEPS.PDF.

EPA Renovation, Repair and Painting Regulation Requirements

In general, all firms that disturb 6 square feet of painted surface in a room or 20 square feet on the exterior within a 30 day period in **this** facility must comply with the EPA's Renovation, Remodel and Repair (RR&P) regulation and must be registered with the federal EPA. Per the Regulation, the area of disturbance is calculated, by adding up the entire surface areas being removed/disturbed, which then determines the amount of painted surface area disturbed. Work that involves window replacement or demolition of a painted surface, the RR&P regulation applies regardless of size. This regulation also requires that the contractor must assign a RR&P trained supervisor that is responsible for ensuring and documenting all work is conducted in compliance with the RR&P regulation and there are extensive record keeping and notification requirements that the Contractor must perform. In addition, This is a general overview of the regulation and the contractor must refer to regulation for additional requirements and information. Fines are expensive and the compliance with this regulation rests solely on the Contractor so it is very important that Bidders/Contractors are well versed in this regulation.

– CONTINUED SEE NEXT PAGE #11

WASHOE COUNTY SCHOOL DISTRICT
MATERIAL, WATER, AND LEAD DISTURBANCE PERMIT
CONTINUATION PAGE

LEAD CATEGORY #N/A	PAINTS, COATINGS & CERAMIC TILE IN BUILDINGS CONSTRUCTED BEFORE 1978
CONTAINS LEAD?: **SEE FACS REPORT**	**Buildings:** ALL

– CONTINUED FROM PAGE #10

WCSD Requirements

In addition to regulatory requirements, the WCSD has requirements that must be met by the Contractor/Bidder. The contractor is responsible for submitting to the ES&A department lead disturbance procedures that outline the lead safe work practices to be utilized and that procedure must comply with the Districts minimum lead disturbance requirements. The current minimum lead disturbance requirements, which will apply to this project, follow these tables.

OSHA action level training and RR&P training certification and RR&P firm certification must be submitted to the project manager and they are to submit a copy to the ES&A department. The ES&A department must review, verify, and approve all required documentation **prior** to the contractor being able to perform any disturbance, so time for review must be taken into account when developing schedules. Once the ES&A department has approved the procedures and training and firm certification, the contractor may proceed but they must notify the ES&A department at 325-8490 of **any** paint/coating disturbance immediately disturbance prior to the disturbance**.** ES&A department personnel, project managers and assistant project managers and other district personnel will spot check in the field, to ensure compliance with the contractors submitted and approved procedures.

Refer to section listed below regarding lead sampling that may be available.

WASHOE COUNTY SCHOOL DISTRICT
MATERIAL, WATER, AND LEAD DISTURBANCE PERMIT
CONTINUATION PAGE

A NOTE ABOUT SAMPLING AND SAMPLING REQUEST PROCEDURES

Only approximately 20% of the paints and coatings in the District have been found to contain lead. The majority of white and off-white paints on sheetrock and block walls does not contain lead in facilities constructed after approx. 1990. Brighter or more colorful paints/coatings on any surface, or all paints and coatings on metals, are much more likely to be found to contain lead in all facilities. In addition, ceramic tile in any age facility is very likely to contain lead. It is highly recommended that sampling be done to confirm lead content unless time does not allow a delay for processing samples through the WCSD ES&A department. If paints and coatings are not sampled, all paints and coatings must be assumed to be lead containing, above 5000 parts per million (lead based), and treated in accordance with all lead regulations, lead specifications, and requirements identified in this permit.

The process to request lead sampling is for anyone requiring sampling to submit through their project's Project Manager. The designated WCSD Project Manager will submit the required sampling forms, and sampling will be coordinated by the ES&A department. A minimum of 10 days will be allowed before sampling results are provided to the Project Manager for them to be distributed to all interested parties. All lead sampling must be processed through the ES&A department, and sampled by ES&A approved and trained lead professionals.

Any paints or coatings that are not specifically addressed on this permit, or on the project drawings, has to be assumed to be lead containing, and above 5000 parts per million (lead based) – no exceptions. Any disturbance to those paints and coatings not specifically addressed on this permit or on the project drawings must be done by properly trained (Minimum of OSHA action level training) personnel, and those disturbances must be performed in accordance with all lead requirements listed in this permit, as well as any applicable regulations and local requirements. Many times scope modifications are required after the bid, and new areas of the facility may need to be disturbed. These areas would not have been addressed on this permit, since they were unknown at the time of issuance. Additional sampling could be conducted by requesting lead sampling through their project's Project Manager, but there will be a delay getting sampling requests and a new MDP would be required. The District reserves the right to direct the Contractor to assume new paints and coatings, due to scope changes, are lead containing and the contractor would then be required to treat all paints and coatings as lead containing in compliance with all requirements of this permit.

REPLACEMENT PAINTS, COATINGS, CERAMIC TILE, AND OTHER LEAD CONTAINING MATERIALS

Unless otherwise specifically allowed by this projects specifications, the Contractor shall not reinstall any lead containing paints/coatings in any detectable levels during the process of completing this project. "lead containing" is defined as any paint or coating that has ANY detectable lead level when paint chip sampling is conducted and chip is analyzed by the ICP method. The District may perform sampling of replacement materials and if analysis finds any detectable levels of lead, the Contractor will be liable for all costs to properly remove that material and re-apply paints and coatings with no detectable levels of lead. Contractors are encouraged to pre-sample paints they may be using to determine the actual amount in paint/coatings used.

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MINIMUM REQUIREMENTS TO PERFORM ATTACHMENTS AND PENETRATIONS IN WCSD FACILITIES

Below are the minimum requirements to perform any Attachment and Penetration activity to a known or assumed asbestos and/or lead containing material in Washoe County School District (WCSD) facilities. This document is not provided to address demolition, stabilization, abatement, or removal activities. If any work to known or assumed asbestos or lead materials need to be done on this project, and it is anything other than the installation of screws, the removal of screws, or the drilling of holes, the successful bidder must comply with, in addition to these minimum requirements, all applicable District asbestos and lead specifications and requirements. Regarding these procedures, the District has done its best to provide a complete and regulatory compliant attachment and penetration procedure, but by signing this MDP, the Contractor acknowledges that it is the successful bidder's sole responsibly for compliance with this MDP, as well as any other applicable regulatory requirements.

ASBESTOS/LEAD PROCEDURE SUBMISSION PROCESS

Prior to starting this project, each contractor working on this project is required to submit to the WCSD ES&A department an asbestos/lead procedure that includes all District requirements listed below. To simplify the procedure submittal process, an electronic PDF fillable template of these requirements will be provided to the successful bidder of this project. This document is available by contacting the assigned WCSD Capital Projects Project Manager for this project. Contractors must utilize the most current above-mentioned electronic template and fill out all required information, add company letterhead, sign, and date the document. The completed procedures will be e-mailed to the Project Manager by all contractors working on this project that will performing any applicable disturbances. Once submitted, the WCSD Project Manager will pass the document onto the ES&A department for approval. Successful bidders are required to add time to their project schedule for this procedure submittal and approval process.

The Contractor has the option to submit a site-specific or blanket district-wide applicable procedure. A district-wide blanket procedure applies to a scheduled project, as well as all future sites where a contractor will be performing disturbances. The site specific procedure will apply to just one site or project. District-wide procedures are valid for one year from the date the procedure is signed by the ES&A department. Site specific procedures will be valid for the term of the project. Each Contractor must receive a signed and approved procedure prior to performing any disturbances to all asbestos/lead paint or assumed asbestos/lead paint materials. The procedure is a combined procedure and it addresses both asbestos and lead disturbances. A minimum of one work day will be required by the ES&A department for the review and approval process.

In addition to the Material Disturbance Permit (MDP), the Contractors must also have a copy of the approved procedures on site at all times. The purpose of this procedure is to document the agreement between the Contractor and the District that all lead and asbestos disturbances performed by staff of the Contractor will be done per all noted District requirements, District Specifications, and project specifications. Again, Contractors must ensure that their procedure has been approved, and the approved signed procedure is on site prior to any disturbance.

MINIMUM REQUIREMENTS

1. Receive approved Lead/Asbestos procedures as identified above.

2. Technicians performing disturbances will be required to have a minimum of AHERA 16 Hour O&M training and OSHA action level training per 29 CFR 1926.62 (i) (2) lead training. In addition, as applicable, contractors must comply with the EPA RR&P training and certifications requirements listed in the RR&P section of this appendix. Copies of training certifications, including a refresher within the last 12 months, will be provided to the ES&A Department **prior** to the start of any project. Only personnel with the proper minimum training will be authorized to perform any disturbance to asbestos/lead paint or assumed asbestos/lead paint containing materials, or be in the adjacent area of a disturbance.

3. Notify the ES&A Department at **325-8490** and leave a message with the time, name of the technician doing the work, date and exact locations in the school where they will be performing any disturbance. This call should take place immediately prior to disturbance, this phone number (**325-8490**) will go to voice mail, and the contractors are to provide notifications with above identified information, 24 hours a day. The Contractor is also required to notify their assigned WCSD Construction Department Project Managers and Assistant Project Managers of scheduled disturbances so they can also verify compliance with the contractors approved disturbance procedures.

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4. Contractors must refer to this Material Disturbance Permit to determine what materials contain asbestos or lead and utilize the applicable lead/asbestos procedures. Some materials cannot be disturbed, and each specific material disturbance permit will identify what can be disturbed and provided material disturbance instructions. The minimum disturbance permits in this section of the material permit are in addition to any requirements listed in the material disturbance instructions. Any instance where 100% of the minimum asbestos/lead requirements are not followed, the District will immediately hire an environmental remediation contractor as well as an environmental consultant to properly clean up the contamination and perform air sampling. The contractor will be responsible for reimbursing the District for all costs due to any improper or unauthorized disturbances.

5. Contractors or technicians who are new to performing asbestos/lead paint or assumed asbestos/lead paint disturbances for the District must contact the Capital Projects PM/PCI Department and schedule a disturbance. A Capital Projects PM/PCI employee will be scheduled to review the technician's compliance with the disturbance procedures in the field. Once a technician has demonstrated on a minimum of two (2) occasions to the Capital Projects Department that he has an understanding of the District disturbance requirements and has proper equipment, the ES&A Department will then authorize that technician to perform disturbances without prior approval of the Capital Projects Department. Notifications prior to starting all disturbances as listed above will still be required and technicians should expect unannounced random compliance inspections, from the ES&A Department. A list of approved technicians is available upon request form the ES&A department.

6. Post the appropriate "Danger Lead - Keep Out" or "Danger Asbestos Keep Out" signs on the entry side of all doors leading into classrooms, hallways, bathrooms, offices or mechanical rooms where drilling is to occur. Doors will be closed. It is the contractor /technician's responsibility to take adequate means to keep the public or school staff out of the disturbance area.

7. Large rooms, such as multipurpose rooms, will have yellow caution tape placed across all entries to the room in addition to signage but access to these areas must be restricted to ensure no unprotected person can enter the areas where disturbances are taking place. If unprotected personnel can see the activity, this is not a large enough area of demarcation.

8. A 6 ml plastic drop will be placed under the disturbance in a manner that extends 6' out in all directions from the disturbance area. This poly drop can be reused if properly wet-wiped or HEPA-vacuumed off after use.

9. Worker will don the respiratory protection and a protective suit, (protective suits are optional for lead disturbance, "attachments and penetration" disturbances if the Contractor will not exceed the lead action level) and initiate personal air monitoring procedures per item #10 below. Respiratory protection is required throughout all asbestos/lead paint or assumed asbestos/lead paint disturbances in WCSD regardless of air sampling results.

10. If a Contractor is performing a **lead** attachments and penetrations (see the definition in #20 below), air sampling will be conducted at the start of the project. If air sampling results show the technicians performing the work is below the OSHA Lead Action Level, air sampling can be suspended unless the work being performed is changed. Air sampling will be performed for each type of lead attachment and penetration activity to develop a representative sample for each lead activity. Air sampling will be performed during **all** asbestos disturbances, no exceptions.

11. Drill the hole or holes as required using an HEPA VAC and a shrouded or dust collecting apparatus (i.e. Bit Buddy. A HEPA VAC is to remain running during this whole process to ensure all debris is cleared from hole. All clean-up must be conducted the HEPA Vacuum. If a contractor fails to properly control the asbestos/lead containing dust, the District will then hire an environmental remediation contractor as well as an environmental consultant to properly clean up the contamination. The contractor will be responsible for reimbursing the District for all costs due to improper disturbances that result in debris exiting the area of disturbance.

12. All HEPA vacuums used will have been DOP challenge tested prior to first use and annually thereafter. If this project involves 30 or more disturbances over the span of this project, the HEPA vacuum will be DOP tested on-site prior to the start of the project.

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13. If required, to be determined by the technician, an encapsulant material may be sprayed or brushed on to the area of the holes.

14. A device, backing, box or raceway, or any other equipment will then be mounted using anchors installed per #11 above, with the HEPA VAC running and properly directed at the area of the disturbance.

15. A HEPA VAC or wet methods will be used to clean up any debris on 6ml poly drop, around device box, technician's suit, and any surfaces below holes, such as tops of chalkboards and base boards.

16. The poly drop, if utilized, will be folded into itself in such a manner as to not spread any debris, the HEPA vacuum hose sealed, and personal air monitoring time logged appropriately. This poly drop can be reused if it is properly wet-wiped or HEPA-vacuumed off after use.

17. All signs and equipment are to be removed, and the technician is to move to the next location. The contaminated suit should be removed and a new suit utilized at the new disturbance location, unless the suit can be properly decontaminated.

18. Upon completion of a shift, air samples will be dated and sent in to a properly accredited lab to be analyzed. Results will be forwarded to WCSD. Lab results will be e-mailed directly from the lab to the ES&A Department within 48 hours of the disturbance. All lab results will reference the Material Disturbance Permit (MDP) # located on the top of the first page of this permit. Results without the MDP number prefix will be returned to the lab for clarification and the addition of the MDP tracking number

19. All debris, waste, poly drop, suits, etc. will be placed in 6 mil poly waste bags (double bagged) and disposed of properly.

20. The definition of "Attachment and Penetrations" in this document is **only** the drilling of holes through a HEPA shrouded device, the installation of screws through a HEPA shrouded device, or the removal of screws through a HEPA shrouded device. **Any other activity** that is not attachments and penetrations as listed in item #20 must be designed by an asbestos or lead project designer, done per a lead specification, and supervised by the District or District hired outside asbestos/lead consultant. Contractors cannot perform any work, other than "Attachments and Penetrations" without an onsite District or District hired asbestos or Lead Consultant being present.

21. All asbestos abatement or lead disturbances, other than "Attachment and Penetrations", must be completed in full compliance with applicable regulations, the District's Asbestos Abatement Specifications, and District hired asbestos or lead consultants supplement specifications. If in error, an asbestos abatement bid or quote is put forth without the District Asbestos Abatement Specifications, Contractors are required to request a copy of the most current asbestos abatement specifications from the bid or quote entity through the formal bid inquiry process

THE UNDERSIGNED AGREES TO COMPLY WITH THE CONDITIONS OF THIS MATERIAL, WATER & LEAD DISTURBANCE PERMIT, APPENDIXES, & ALL APPLICABLE REGULATIONS. UNDERSIGNED ACKNOWLEDGES LIABILITY FOR ANY COSTS THE DISTRICT MAY INCUR TO INVESTIGATE & CLEAN UP ANY DISCOVERY OF IMPROPER AND/OR UNAUTHORIZED DISTURBANCES DONE BY UNDERSIGNED'S EMPLOYEE(S) OR SUB-CONTRACTOR(S) TO MATERIALS LISTED AS LEAD/ASBESTOS-CONTAINING BY THE DISTRICT. IN ADDITION, THE UNDERSIGNED AGREES TO ALL REQUIREMENTS OF THE WATER & LEAD APPENDIX.

SIGNED BY (PRINT): _____SIGNATURE: _____

COMPANY (PRINT): _____

DATE RECEIVED: _____

FACS
Forensic Analytical Consulting Services

Hazardous Materials Specifications

Washoe County School District
Whitehead Elementary School
HVAC Upgrades Project
3570 Waterfall Drive
Sparks, NV 89434

Prepared for:
Washoe County School District
Capital Projects

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Site Address

Whitehead Elementary School
3570 Waterfall Dr
Sparks, NV 89434

Background

Washoe County School District (WCSD) will be performing an HVAC upgrades project at their Whitehead Elementary School site. This project will be limited to areas and materials of the site as indicated on project drawings and included in the project bid documents. A survey conducted by Forensic Analytical Consulting Services, Inc. (FACS) in 2024 identified various asbestos-containing materials and lead-containing paints. This will require the special handling of the identified materials as outlined within these specifications.

Scope of Work

For a general narrative, the project involves the removal and replacement of rooftop HVAC units and associated components from various hallways and rooms throughout the school. This will require hazardous materials remediation at both interior and exterior locations of the building as part of the new systems installation. An asbestos and lead paint survey of the project area were conducted by FACS in 2024.

Asbestos-Containing Materials

Although all accessible materials sampled during this survey were found to not contain asbestos, it should be noted that asbestos-containing materials will most likely be involved in this project.

These materials could include work involving the twenty-four (24) unit ventilators which are known to contain mastics/sealants or pipe wrap/hard elbows at hidden portions of the units which may be asbestos-containing. Previous projects at similar WCSD sites indicate that the unit mastic/sealants are likely to be present. These materials would need to be abated as asbestos-containing materials if discovered during the project unless tested and proven to be asbestos-free.

If these materials are present in the previously mentioned locations and found to be asbestos-containing they shall be abated by a contractor registered with the Nevada Division of Industrial Relations as an Asbestos Abatement Contractor and workers with AHERA Worker and/or Contractor-Supervisor training. This contractor shall also be currently licensed by the Nevada State Contractors Board and hold the A-23 classification for the Removal of Asbestos.

Lead-Containing Paints

The following paints were found to contain lead at exterior project areas:

- Rust Red Paint on Metal Enclosure
- White Paint on Metal Enclosure Interior
- White Paint on Metal Grill

The following paints were found to contain lead at interior project areas:

- Grey Paint on Concrete Floors
- Tan Paint on Metal Units
- White Paint on FCP Ceiling (Space 161 Kitchen)
- White Paint on Drywall Walls

Any work disturbing paints containing lead must be performed using lead-safe work practices. Removal or impacting of lead-containing paints must be performed by personnel with OSHA Action Level training.

The general contractor and any sub-contractors working onsite will need to consult the WCSD Environmental Safety and Assessment (ES&A) Department's Material Disturbance Permit to verify asbestos and lead content of materials prior to impacting any materials. In addition, FACS has provided a survey report for the areas inspected as reference, but this document does not take precedence over MDP or project drawings and other construction directives.

Testing of materials not previously sampled or testing to verify asbestos or lead content of materials, will only be performed by WCSD ES&A Staff or District's independent third-party consultant. Testing by another third-party consultant will not be accepted as proof of the asbestos-content of building materials or lead-content of paints or coatings.

This narrative is not a definitive scope of all work to be completed, including hazardous materials work, and is primarily intended to provide a general overview of the project. Project drawings and other construction documents developed shall be consulted to determine exact scope of work.

Project Requirements

Contractor performing hazardous material abatement shall be approved by the WCSD ES&A Department to perform asbestos abatement and lead removal activities within the District. **Approval of firms that have not previously performed activities impacting asbestos or lead materials for the District will require submission for approval of all necessary documentation outlined by WCSD for the project at least fifteen (15) business days prior to work commencing.**

All workers certifications (asbestos training, DIR licensing, lead training) shall be submitted to the WCSD ES&A Department for approval at least fifteen (15) working days prior to project commencement at minimum. Online training of employees is not sufficient to meet the requirements of District policies and all training must be provided in-person with each individual receiving an individual training certificate for the specific discipline from the training provider. Contractor is responsible for reviewing WCSD ES&A worker roster for the company to ensure all workers to be used on the project have been approved prior to arrival onsite. Workers not identified on the approved WCSD ES&A worker list for the contractor will not be allowed to perform any activities onsite, even if documentation is provided onsite at time of the project commencement or work.

The hazardous materials remediation sub-contractor, acting under the general contractor, will be responsible for following all project drawings and contract requirements for materials/components to be removed. The abatement contractor's onsite supervisor shall always have a copy of the project specifications and the Material

Disturbance Permit for the project onsite. The supervisor shall be familiar with the project requirements prior to arrival onsite at the project.
Failure to follow requirements of these Specifications, or lack of knowledge of general regulatory requirements to be followed during the project, are grounds for replacement of the remediation contractor's onsite supervisor.

Only the abatement contractor will be allowed to occupy the project area once abatement or remediation activities are scheduled to start. This applies to all WCSD non-ES&A staff/personnel, general contractor, and other sub-contractors. The area shall only be occupied by the abatement contractor, WCSD ES&A staff, and District's independent third-party hazardous materials consultant.

Work that is deemed "penetration and attachment" by the District's ES&A Department or District's onsite third-party hazardous materials consultant shall be performed in accordance with the District's policy for this type of work. These specifications may have applicable requirements that may be included for overall project compliance, but do not identify all work practices or engineering controls that would need to be met for compliance with the District's penetration and attachment policy.

Contractor shall adhere to the requirements of these Specifications, WCSD ES&A Technical Specifications, Material Disturbance Permit, Lead Appendix (found in Material Disturbance Permit), and Federal, State, and Local regulations.

Site Conditions

Contractor is responsible for documenting any existing damage prior to the project start that they do not want to be held responsible for. Documentation shall include photographs and/or videos and shall be provided to WCSD Project Manager prior to starting work onsite.

Water, HVAC, and Electricity

Water and electricity are available onsite; however, long hoses and cords may be necessary. Contractor shall provide a GFCI at the primary plug-in of all electrical trains used for electrical equipment. Hose washers shall be provided at all connections to prevent leakage of water and potential damage to District facilities. Contractor is responsible for any damage caused by their usage to any District water or electrical systems.

Contractor shall coordinate with the WCSD Project Manager for the shut-down of any active HVAC systems within the project area prior to commencing abatement/removal activities. Contractor is responsible for the lock-out / tag-out of all electrical circuits and HVAC systems that may be impacted by the project. Contractor shall follow requirements of WCSD for the lock-out / tag-out of equipment. Contractor shall coordinate the shut-down of HVAC systems at least 72 hours prior to turning any units off as some units are controlled by an off-site location and additional steps may be required to turn off the units.

Lighting

In the event that work will take place in the evenings, the Contractor shall provide temporary lighting as required for workers to clearly see materials to be abated, traverse through the work area, and move waste to the waste receptacle. Sufficient lighting shall be provided to allow a clearance visual inspection to be performed at the conclusion of each work shift by the District's independent third-party consultant. Lighting used shall meet

requirements for safety as set forth by OSHA requirements. All lighting shall have a sturdy base and guards to protect bulbs from breakage in the event they are dropped or knocked over.

Pre-Cleaning

No pre-cleaning of asbestos or lead contamination at interior areas is required to complete this project; however, small amounts of garbage and build-up of dust may be required to be cleaned to allow sufficient adherence of containment barriers.

Notifications

Contractor performing abatement of asbestos-containing materials shall file a courtesy notification to the Washoe County Health District and Nevada OSHA at least 10 days prior to work commencing onsite. A copy of the notifications and proof of submittal to agencies shall be provided to the District's independent third-party consultant at least 48 hours prior to commencing abatement and removal activities, including setup of containment.

No notification is required for the removal or disturbance of lead-containing components, but the contractor performing lead work shall provide notice of work to the WCSD ES&A Department and District's independent third-party consultant at least 48 hours prior to commencing activities, including setup of containment.

Equipment

Contractor is responsible for providing all necessary equipment in sufficient quantities to complete the work in the schedule provided for the project. All equipment must arrive onsite clean and in proper functioning order. Any equipment that arrives onsite dirty or not in proper functioning order shall be removed from the project site for cleaning and/or repairs.

The requirement for clean equipment in proper working order extends to any rental equipment used on the project. If rental equipment is used, contractor shall provide notification in writing to the rental agency that equipment will be used within an asbestos or lead regulated work area. Proof of this notification being filed shall be provided to District's independent third-party consultant.

Operators of lifts or other similar powered equipment must be trained in the use of equipment to meet manufacturer and OSHA requirements. Proof of training shall be provided if requested to WCSD and District's third-party consultant.

Training

Workers disturbing asbestos-containing materials must have AHERA Worker training. One worker on the abatement work crew must be trained to the AHERA Contractor-Supervisor level. The crew lead Contractor-Supervisor may not leave the site when asbestos abatement activities are taking place.

Workers performing work impacting lead paints or coatings, regardless of level of lead present, must have OSHA Lead Action Level training. This training requirement extends to any personnel entering a lead regulated area, whether they are primarily a lead remediation contractor worker or not.

As noted previously, all workers certifications must be approved by the WCSD ES&A prior to arrival onsite to start work. Certifications shall clearly identify the name/level of the training and provide the complete name of the worker. Names on certifications must match from certification to certification.
Failure to meet these requirements may cause a delay in approval up to complete rejection of certifications until corrections can be made and new copies obtained by the contractor.

Copies of the worker certs will also be requested to be provided to the District's onsite third-party consultant as well. Web-based or virtual asbestos and lead training is prohibited by District policy.

Personal Protection Equipment

All personnel entering a regulated area, regardless of level of work to be performed, shall wear disposable coveralls with attached hood and foot coverings, tight-fitting half-face negative-pressure air purifying respirators fitted with HEPA (P-100) filters, safety glasses and gloves. The contractor may require additional personal protection equipment based on their job hazard assessment, but the listed requirements must be met at minimum.

Street clothes may be worn beneath disposable coveralls, but HEPA-vacuum cleaning of clothing may be required as part of decontamination procedures in the event suits become ripped or torn during work. Requirements of PPE extend to any contractors disturbing hazardous materials, even if they are not primarily a remediation contractor.

All employees shall have a valid medical clearance and fit test for the respirators to be worn. Copies of the medical clearance and fit test shall be provided to the District's onsite independent third-party consultant.

The contractor may opt to include additional PPE items based on their own job hazard assessment for the project, but they may not reduce level/type of PPE below what is required in this Specification.

Personal Air Monitoring

The contractor is responsible for the collection of personal air samples on 50% of workers entering a regulated work area during asbestos abatement and lead disturbance activities as applicable. If an odd number of workers are entering the regulated work area, the contractor shall round up for the number of workers to be monitored (i.e., five workers entering a work area would require collection of three samples). These samples shall be collected in accordance with OSHA sampling protocols and analyzed by a laboratory with the proper accreditation and approval from the WCSD ES&A Department.

The contractor shall have their laboratory submit or fax, within **48 hours** of the date the sample was collected, the final laboratory result documents (including legible chain-of-custody) for air monitoring to the WCSD ES&A Department. No hand-written results reports will be allowed. The laboratory reports will reference the air monitoring cassette's factory assigned number and the personal air monitoring results must be properly applied to an 8-hour time weighted average. Failure to submit results within the required 72-hour period (48-hour turnaround with 24-hour grace period) may result in the District temporarily stopping the applicable remediation project until results are received. Continued failure may also result in the termination of the contract.

Copies of the personal air sampling results, along with laboratory accreditation, shall be submitted to the WCSD ES&A and District's independent third-party consultant as noted above.

The District's independent third-party consultant reserves the right to halt work or increase respiratory protection if personal air samples are not submitted in a timely manner, or if area air sampling shows current respiratory protection does not sufficiently protect employees.

Security and Safety

The Contractor is responsible for security of all equipment and safety of all employees. Contractor shall provide any storage containers or security needed for tools and equipment if they are to be left onsite. Contractor shall coordinate with WCSD Site Facilities Coordinator or WCSD Project Manager for placement of any storage container brought onsite.

Contractor is responsible for all worker safety and following all applicable regulations, namely Nevada and Federal OSHA. Contractor or their designated supervised shall hold a safety meeting on the first day of the project that addresses all safety hazards workers may encounter. Safety meetings shall be held at least weekly thereafter, or in the event that job hazards change or an accident occurs. The safety meeting topics shall be documented and all attendees sign the document for recordkeeping. A copy of the safety meeting shall be provided to the District's independent third-party consultant.

Work Hours and Dates

A specific schedule of calendar dates for the project will be provided in other contract documents. However, it is anticipated that workdays and hours when school is not in session will be Monday through Friday, 07:00 am to 03:30 pm. When school is in session, work hours will be 03:30 pm to 11:00 pm. WCSD holidays are excluded dates of work and no work shall be scheduled for these dates. As noted above, a detailed schedule of project events, including shift hours, shall be provided for approval by WCSD.

The contractor may request alternate days or hours in writing to the WCSD Project Manager for approval, but it does not guarantee acceptance. The request must be filed at least 48 hours prior to the first alternate shift commencing.

Adverse Weather Conditions

The exterior work shall be planned and scheduled when there are favorable weather conditions, such as, performing the abatement work when the forecast is for "clear skies" and no rain for three or more consecutive days. In addition, all roof areas abated must be "dried-in" per WCSD requirements prior to stoppage of work and demobilization each day by the roofing contractor. Contractor may request a waiver of this requirement from WCSD but will be held responsible for all damage incurred by failure of barriers that allows water to enter building envelope. Damage includes mold that may grow later due to water intrusion from not having roof system installed.

Polyethylene critical barriers and drop sheets require sufficient attachment and/or anchoring to prevent windy conditions from rendering them ineffective.

Windy conditions that cause dust and/or debris to be blown beyond the removal work area or the poly drop sheets will require stoppage of removal work, correction of any containment deficiencies, and clean-up and disposal of all waste material generated before abatement or remediation work may continue.

Rain, snow, hail or other weather involving moisture which could cause interior of buildings to become wet will require remediation contractor to stop work as necessary to ensure building is weather-tight.

The District or District's independent third-party consultant has the authority to halt abatement or remediation work due to adverse weather conditions. Neither the District, nor the District's consultant, will be responsible for lost work shifts or hours due to Contractor failing to monitor weather and attempting to proceed when inclement weather is forecasted.

Occupancy

As noted previously, occupancy of the project area will be limited to the abatement contractor, WCSD ES&A staff, and District's independent third-party consultant once abatement or remediation activities are ready to commence. Once the area has been cleared, other parties may occupy.

Emergency services may also occupy areas in the event of an emergency during the project.

Challenge Testing

All HEPA-filtered equipment to be used on this project shall be challenge tested (DOP or equivalent) within the last 30 days prior to use. Copies of the challenge testing results shall be provided to the WCSD ES&A and/or District's independent third-party consultant.

Asbestos Floor Tile & Mastic Abatement and Lead-Containing Painted Surface Disturbance

These requirements extend to work involving unit ventilator mastic, painted drywall, and baseboard removal from painted walls if necessary. **It is recommended that as much lead work be performed at the same time as any potential asbestos abatement activities to limit time for containment setup / teardown, material used for containment barriers, and other cost considerations.**

All poly used on this project shall be 6-mil in thickness and fire-retardant.

1. All walls and any fixed objects that cannot be removed from the containment shall be covered with one layer of 6-mil poly.
2. A false-ceiling, minimum of 4-mil poly, shall be installed if needed to achieve and maintain sufficient negative air pressure differential as noted below.
3. A minimum three-stage decontamination unit with operable shower shall be contiguous with each containment. See "Decontamination Requirements" in this specification for further requirements.
4. Sufficient negative air machines shall be installed within the containment area to generate the required air pressure differential of -0.050" WC.
5. The air pressure differential shall be established and maintained at -0.050" WC. The air pressure differential shall be displayed and recorded on a fully-functioning manometer. The contractor will be responsible for providing copies of the manometer readings as part of closeout documents. If the manometer is not recording, the contractor shall assign an asbestos-trained staff member to record the manometer readings at 10-minute intervals, including any losses in pressure and re-establishment of sufficient pressure.

6. All poly barriers that may allow access into a regulated area shall have signs installed at clearly visible locations to prevent tampering or breaching of containment areas. These barriers may be at doorways, free-standing poly walls, or similar locations.
7. Signs shall meet requirements set forth in 1926.1101(k)(7) for an asbestos regulated area, including the use of protective clothing and respiratory protection. Lead hazard signage shall also be placed at the entrance to each containment area. Signs shall be posted once the containment area has been approved, but before any abatement begins.
8. Workers shall wet all materials prior to, and during, removal using an airless sprayer applying amended water.
9. Baseboard removal shall not take place until containment is established, since it is anticipated that lead-containing surfaces will be disturbed. The abatement contractor will seek clarification from the appropriate party (i.e. general contractor) on whether baseboard adhesive will be removed or left in place.
10. Where baseboard materials are removed, the remaining painted wall surface shall be stabilized as needed to ensure areas can be re-painted without additional lead work activities.
11. All work involving the removal of lead-painted drywall materials will be conducted using hand tools and in a negative pressure enclosure.
12. If unit ventilator mastics are identified to be asbestos-containing, the units may be removed intact during the abatement process and disposed of as asbestos waste. See Disposal Requirements section.
13. At the conclusion of abatement, the abatement contractor shall clean the floor of the containment using HEPA-vacuums followed by wet-cleaning, and HEPA-vacuuming again to assure that surfaces have been cleaned sufficiently.
14. All poly surfaces, including the ceiling, shall be wet-wiped clean as part of detail cleaning.
15. All waste shall be placed into two separate waste bags of 6-mil thickness. The waste bags shall be sealed in a “gooseneck” fashion to create a leak-tight container.
16. No “loose” water shall be present in the waste bags prior to sealing closed. Water shall be soaked up with either kitty litter or diatomaceous earth as necessary to meet this requirement.
17. Lead waste shall be characterized prior to disposal and shall be labeled and disposed of in accordance with the waste determination.
18. After final cleaning, the Contractor’s supervisor shall perform a visual inspection to determine if the work area is ready for a visual clearance inspection, and the supervisor shall notify District ES&A personnel or District’s independent third-party consultant when the work area is ready.
19. All waste, non-essential supplies, and equipment shall be removed from the containment area prior to a final visual inspection. To pass a final visual inspection, all materials shall be removed, and the work area must be clean of all dust and debris.

Lead Painted Component Procedure and Requirements - Exterior

All poly used on this project shall be 6-mil in thickness and fire-retardant.

No exterior containment area may remain in place past the work shift that the lead work is performed in.

1. The Contractor shall limit and control exterior access within 50 feet of exterior work areas. This will require the erection of barrier tape with Contractor-supplied pylons or fixed objects as available around the project area.
2. Required regulated area lead hazard signage shall be placed 20 feet away from the work area. Personal Protection Equipment must be worn within this regulated area.

3. Caution tape shall be used to demarcate a buffer area 20 feet past the regulated area signage to ensure authorized access control is maintained.
4. Critical barriers shall be applied to all openings (windows, doors, or otherwise) within 20 feet of the work area. These barriers may remain in place past one shift if approved by WCSD. Critical barriers within a regulated area must be cleaned as part of the final detail cleaning process.
5. One layer of 6-mil poly shall be placed on the ground and extend out 10 feet in each direction from the location of lead disturbance.
6. Poly shall be weighed down or secured to prevent movement or billowing and the creation of a trip hazard.
7. A wash station / decontamination area shall be attached to the containment area to allow workers to decontaminate themselves and equipment when exiting the work area. This wash station shall include wet-wipes, soap, and towels for use with a waste bag for disposal of PPE and decontamination waste materials.
8. Removal of painted components shall be conducted using hand tools whenever possible to limit potential lead release.
9. It is anticipated that the rooftop HVAC enclosures will be removed in one piece using a crane without disturbance. Any loose or peeling paints will be required to be stabilized prior to this process occurring.
10. Any cutting of surfaces using mechanical equipment shall be performed using equipment with a shroud with HEPA-vacuum attachment to provide local exhaust at the point of the cut.
11. A build-up of waste or debris within the work area is prohibited. Contractor workers shall ensure that the area is kept free of waste bags or other debris as work progresses.
12. Waste shall be placed into clear 6-mil poly waste bags. All waste must be double-bagged with both waste bags sealed in a “gooseneck” fashion to create a double-layered leak-tight container. Wrapped waste shall have staggered seams to create a leak-tight container.
13. Lead waste shall be characterized prior to disposal and shall be labeled and disposed of in accordance with the waste determination.
14. No “loose” water shall be present in the waste bags prior to sealing closed. Water shall be soaked up with either kitty litter or diatomaceous earth as necessary to meet this requirement.
15. A HEPA-vacuum shall be used to evacuate air from waste bags when sealing. Workers using hands or knees to collapse air out of waste bags is prohibited.
16. Any waste packaged for disposal on the roof shall be lowered to the ground by hand or via a lift. No waste or waste bags may be dropped or thrown from the roof to the ground or to an open-top waste container.
17. At the conclusion of lead disturbance, the poly drop sheet shall be wet-wiped and HEPA-vacuumed clean of all debris and dust.
18. After final cleaning, the Contractor’s supervisor shall perform a visual inspection to determine if the work area is ready for a visual clearance inspection, and the supervisor shall notify District ES&A personnel or District’s independent third-party consultant when the work area is ready.
19. A visual clearance inspection will be performed by the District’s ES&A personnel or District’s independent third-party consultant. The criteria for passing visual clearance shall be the absence of any dust or debris within the regulated work area. All waste and debris shall be properly packaged and removed from the regulated area prior to this final inspection.

Regulated Area Signage

Asbestos Danger and Lead Hazard signs shall be posted at all entrances to a containment area as appropriate for work being performed. Signage will be posted after a pre-start visual is passed and work may begin in the containment, but no work shall start until all signs are posted.

Signage shall meet the revised requirements for lead set forth in 29 CFR 1926.62(m) and for asbestos set forth in 29 CFR 1926.1101 (k)(7).

Lead Wipe Sampling Criteria

At areas of lead work at interior spaces, the third-party consultant will perform lead wipe sampling prior to commencement of work. The consultant will collect wipe samples from floors or other horizontal surfaces as appropriate within the work areas to verify lead dust levels prior to work commencing. If cleaning of floors or other horizontal surfaces to remove a detected lead hazard is required, the contractor shall be notified, and the hazardous materials contractor will be required to perform the cleaning.

At the conclusion of lead disturbances, post-project wipe samples will be collected from the floor or applicable horizontal surface in the work area, beneath the containment poly. If post-project wipe samples indicate that an EPA lead dust hazard exists or if samples indicate a higher level of lead on surfaces than shown on pre-project wipe samples, then recleaning of the work area will be necessary. The recleaning process will be required to be repeated until wipe samples indicate lead levels are below both current EPA lead dust hazard levels and below pre-project wipe sample levels.

Disposal Requirements

Asbestos

All asbestos waste shall be double-bagged in 6-mil poly waste bags. Both bags shall be sealed in a “gooseneck” fashion. Waste shall be properly labeled for disposal as non-hazardous asbestos-containing material waste. If made friable by removal, the waste must be disposed of as a regulated asbestos-containing material.

The contractor will need to provide a fully enclosed, lockable waste bin for all waste created on this project. Waste bin will need to be labeled with asbestos signage once the waste is loaded into the bin. Waste bins shall be lined with one layer of 6-mil poly prior to waste being loaded. Asbestos waste and lead waste cannot be mixed.

Asbestos waste shall be hauled from the site by a properly licensed waste hauler and disposed of at a waste facility that will accept the waste.

Lead

Contractor is responsible for the waste characterization profiling of all lead waste to be disposed of. Copies of the laboratory results, including chain-of-custody, must be provided to WCSD ES&A or independent third-party consultant prior to disposal.

The contractor will need to provide a fully enclosed, lockable waste bin for all waste created on this project. Waste bin will need to be labeled with lead signage once the waste is loaded into the bin. Waste bins shall be lined with one layer of 6-mil poly prior to waste being loaded. Lead waste cannot be mixed with asbestos waste.

Rooftop unit enclosures craned off the roof may be placed directly into a trailer or truck for immediate transport from the site.

Clearance

At the conclusion of abatement or remediation within a regulated area, a final visual inspection will be performed by the District's independent third-party consultant. The criteria for a successful final visual inspection are that a work area will need to be free of all dust and debris with all asbestos abatement or lead disturbance completed within the regulated area.

As noted previously, pre-job and post-job lead wipe samples will be collected in spaces to verify the contractor has not created a lead hazard by removal of their containment area and to verify that the spaces can be re-occupied by non-lead trained personnel.

In the event that a potential lead hazard has been created by a contractor, such as improper disturbance of painted surfaces outside of a contained area, the District's ES&A staff or independent third-party consultant will collect dust wipe or soil samples to verify conditions. If a lead hazard has been created, the contractor performing the improper disturbance will be responsible for all cleaning costs required for the lead abatement contractor to remediate the hazard, including costs for collection of clearance dust wipe or soil samples to document that the lead hazard has been remediated.

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Reviewed by: Chris Chipponeri, FACS, IJPM-1410, US EP LBP-R-128230-3
Date: October 9, 2024

Revised by: Daniel Prado, FACS, IJPM-2057, US EPA LBP-R-I214705-2
Date: January 23, 2025

FACS
Forensic Analytical Consulting Services

September 17, 2024

Asbestos & Lead Survey Report

Washoe County School District
Whitehead Elementary School
HVAC Upgrades Project
3570 Waterfall Drive
Sparks, NV 89434

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FACS Project #PJ83156

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List of Acronyms

AAC	Asbestos Abatement Consultant
ACM	Asbestos Containing Material
AHERA	Asbestos Hazard Emergency Response Act
AIHA	American Industrial Hygiene Association
CFR	Code of Federal Regulation
DIR	Division of Industrial Relations
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency (EPA)
FACS	Forensic Analytical Consulting Services, Inc.
LCP	Lead-Containing Paints and Coatings
LBP	Lead-Based Paints and Coatings
ND	None Detected
NESHAP	National Emissions Standard Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Science and Technology
NVLAP	National Voluntary Laboratory Accreditation Program
PCM	Phase Contrast Microscopy
PLM	Polarized Light Microscopy
SGS-FL	SGS-Forensic Laboratories
TEM	Transmission Electron Microscopy
TTLC	Total Threshold Limit Concentration

Executive Summary

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Washoe County School District to perform an asbestos and lead paint survey of all suspect materials in the planned project areas at Whitehead Elementary School, located at 3570 Waterfall Drive in Sparks, Nevada. The survey included limited suspect asbestos-containing materials (ACM) and suspect paints and coatings which will be disturbed during the planned HVAC upgrades project at the site. A list of suspect materials which were identified and sampled is included in Appendix A of this report. A list reporting suspect lead-containing paints or coatings which were identified and sampled is included in Appendix B of this report. The survey was performed on August 28, 2024.

Asbestos

All the following materials were found to **not contain** asbestos by laboratory analysis during this survey:

- Asphalt Shingle Roofing – Red (Roof Section A)
- Black Mastic (Roof Section A)
- Grey Sealant (Roof Section A)
- Grey/Black Sealant (Roof Section A)
- White Sealant (Roof Section A)
- 12” ACT Pinhole Fissure
- 4” Baseboard and Mastic – Black
- 4” Baseboard and Mastic – Tan
- Concrete
- 16” Ceramic Tile and Grout – Tan
- Drywall – Heavy Skip Trowell
- Drywall – Knockdown Texture
- Drywall – Orange Peel Texture
- Duct Tape – Grey
- 2x4 FCP Drywall
- 2x2 FCP Pinhole Fissure
- Fiberglass Duct Insulation and Foil
- Fiberglass Pipe Wrap
- Sink Coating – Black
- Unit Ventilator Sealant

It should be noted that all classrooms contain unit ventilators planned for removal during this project. These are known to have asbestos-containing sealants and coatings on portions of the units that are inaccessible during the survey. Additionally, asbestos-containing vinyl floor tiles and mastic are most likely present under each unit. These materials would need to be abated as asbestos-containing materials if discovered during the project unless tested and proven to be asbestos-free.

Please see the Asbestos Survey Summary in Appendix A for a complete listing of suspect materials sampled during this survey.

Other suspect materials not included in this survey must be assumed to be asbestos-containing materials until tested and proven to be asbestos-free.

Lead

The following paints were found to be **lead-containing** by ICP laboratory analysis during this survey:

- Rust Red Paint on Metal Enclosure
- Tan Paint on Metal Unit
- White Paint on Metal Enclosure Interior
- Grey Paint on Concrete Floor
- White Paint on Metal Grill
- White Paint on FCP Ceiling (Space 161)

The following paint was found to be **lead-containing** by the WCSD ES&A department during previous surveys:

- White Paint on Drywall Wall

The following paints were found to **not contain** lead by ICP laboratory analysis during this survey:

- Baby Blue Paint on Drywall Wall
- Cream Paint on Drywall Wall
- Purple Paint on Drywall Wall
- White Paint on ACT Ceiling
- White Paint on FCP Ceiling
- Yellow Paint on Drywall Wall

Any suspect paints or coatings not included in this survey must be assumed to be lead-containing materials until tested and proven to be lead-free.

FACS recommends that the results of this report be incorporated into any renovation plans provided for this project for informational purposes.

Introduction

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Washoe County School District to perform an asbestos and lead paint survey of all suspect materials in the planned project areas at Whitehead Elementary School, located at 3570 Waterfall Drive in Sparks, Nevada. The survey included limited suspect asbestos-containing materials (ACM) and suspect paints and coatings which will be disturbed during the planned HVAC upgrades project at the site. The survey was performed on August 28, 2024.

Scope of Work

The purpose of this survey was to identify asbestos-containing materials (ACMs) and lead-containing paints and coatings which may be disturbed during the upcoming HVAC upgrades project. The visual survey, bulk sampling, and survey documentation were performed by Daniel Prado and Zachary Ramos. Mr. Prado and Mr. Ramos are licensed by the Division of Industrial Relations (DIR) as Asbestos Abatement Consultants (AAC) and are US EPA-accredited Asbestos Hazard Emergency Response Act Building Inspectors. Mr. Prado and Mr. Ramos are also licensed as US EPA Certified Lead Inspectors/Assessors. The scope of the survey and the services provided by FACS included:

- Performing a visual inspection to identify accessible suspect asbestos-containing materials (ACMs) that will be disturbed during the upcoming project;
- Collection of bulk samples for asbestos analysis by polarized light microscopy (PLM);
- Collection of bulk paint chip samples for lead analysis using inductively coupled plasma;
- Ensuring the technical quality of all work by using Asbestos Hazard Emergency Response Act (AHERA) accredited Building Inspectors;
- Ensuring the technical quality of all work by using a US EPA Certified Lead Inspector / Assessor;
- Consolidating data and findings into a report format.

Site Characterization

The upcoming HVAC upgrades project encompasses various locations throughout the school. Suspect asbestos-containing materials observed in the project area include, but are not limited to, drywall, pipe insulation, concrete, ceiling panels, asphalt shingle roofing, sealants, and associated mastics.

Survey Methods

Document Review

The extent of the planned project was provided by Brian Soulier, Planning Manager of Capital Projects and Planning for Washoe County School District.

FACS also reviewed previous sampling data provided by the WCSD ES&A Department prior to performing the survey.

Visual Inspection

Accessible building materials were visually inspected using the methods presented in the Federal AHERA regulations (40 CFR, Part 763). AHERA inspection methodology is required to be used for inspections of K-12 schools and is generally accepted as the industry standard for all ACM inspections regardless of structure or facility type. Suspect ACMs were also physically assessed for friability, condition, and possible disturbance factors.

All areas were accessible during this inspection.

Asbestos Inspection

Bulk Sample Collection

Bulk samples of identified homogeneous materials were collected from materials that may be impacted by the planned renovation activities. Samples were collected of each separate homogeneous area. A homogeneous area is defined as a surfacing material, thermal system insulation, or miscellaneous material that is uniform in use, color, and texture. Examples of homogeneous areas could include:

Concrete
Drywall
Penetration Mastics
False Ceiling Panels

The specific number of samples collected was determined by using the methods required by the Federal AHERA regulations (40 CFR, Part 763.86) and ASTM standards as noted below:

1) For Surfacing Material:
   1,000 ft^2 or less – collect 3 samples
   1,001 to 5,000 ft^2 – collect 5 samples
   5,001 ft^2 or greater – collect 7 samples

2) For Thermal System Insulation:
   "In a randomly distributed manner" – collect 3 samples
   6 linear feet of patching or less – collect 1 sample
   cementitious pipe fittings – "In a manner sufficient to determine"

3) For all Miscellaneous Material:
   Collect samples "In a manner sufficient to determine whether material is ACM (asbestos-containing material) or not ACM…" – AHERA

   Collect "A minimum of three bulk samples shall be collected of each homogeneous miscellaneous material, except that a single sample may suffice for small, manufactured items such as HVAC vibration dampeners, gaskets, and friction products. This exception applies to individual components of less than 6 ft2 (0.557 m2) in size and not to multiple installations of similar components." – ASTM E2356 – 18 Standard

The suspect ACMs were sampled using a knife, chisel, scraper, drill, or other similar coring device suitable to the type of material sampled to cut through its entire thickness and to ensure that a cross-section of the material was obtained. The material was then placed in an appropriately labeled container that was sealed and submitted to the appropriate laboratory for analysis. A unique sample number (e.g. PJ83156-01A) was assigned to each sample.

Bulk samples will be retained by the laboratory for one month unless otherwise instructed. After this period, the samples will be disposed of appropriately.

Bulk Sample Analysis

A total of sixty-six (66) bulk samples were collected from a total of twenty (20) suspect materials.

All interior bulk samples were delivered to WCSD Environmental, Systems, and Assessments (ES&A) Department for submission to Schneider Laboratories Global, Inc. (SLG) in Richmond, Virginia.

All roof bulk samples were analyzed by SGS – Forensic Laboratories (SGS-FL) in Hayward, California.

SLG and SGS-FL are both accredited by the National Institute of Science and Technology's (NIST) National Voluntary Laboratory Accreditation Program (NVLAP). SLG and SGS-FL participate in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program and have substantial experience in the analysis of asbestos.

All samples were analyzed using Polarized Light Microscopy with Dispersion Staining (PLM/DS) techniques in accordance with the methodology approved by the U.S. Environmental Protection Agency (EPA). The percentage of asbestos present in the samples was determined on the basis of a visual area estimation. The EPA defines asbestos-containing materials (ACM) as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM). 40 CFR Part 763 identifies the lower limit of reliable quantification for asbestos using the PLM method as approximately one percent (1%) by volume. In addition to the percentages, the types of asbestos minerals are also reported. The PLM method is the standard method used to analyze asbestos bulk samples.

When "None Detected" (ND) appears in the laboratory results, it should be interpreted as meaning asbestos was not observed in the sample material.

Lead Inspection

The client-defined lead inspection was modeled upon the sampling protocol described in "Chapter 7: Lead Based Paint Inspection" of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision).

OSHA, in Title 29 Code of Federal Regulations (CFR) Part Number 1926, Standard Number 1926.62, regulates all construction work where an employee may be occupationally exposed to lead. Paints, coatings, or materials with any detectable level of lead is considered lead-containing by OSHA. Paints or coatings containing lead above 1.0 mg/cm^2, 0.5% by weight, or 5,000 parts per million are considered lead-based by the US EPA. For this inspection, a minimum of three bulk samples were collected from each suspect paint or coating to be potentially disturbed by the project, assuming sufficient material was present to justify.

Bulk Sampling Methodology

During this inspection, FACS personnel collected forty (40) bulk paint chip samples from twelve (12) suspect paints for laboratory confirmation of lead-content. These samples were scraped from the substrate using a knife or chisel to obtain sufficient material for analysis.

All interior-collected bulk samples were delivered to WCSD Environmental, Systems, and Assessments (ES&A) Department for submission to Schneider Laboratories Global, Inc. (SLG) in Richmond, Virginia.

All roof bulk samples were analyzed by SGS – Forensic Laboratories (SGS-FL) in Carson, California.

SLG and SGS-FL are accredited by the American Industrial Hygiene Association's Environmental Lead Laboratory Accreditation Program for the analysis of lead in bulk paint chips by inductively coupled plasma.

Findings and Recommendations

Forensic Analytical Consulting Services, Inc. (FACS) was retained by Washoe County School District to perform an asbestos and lead paint survey of all suspect materials in the planned project areas at Whitehead Elementary School, located at 3570 Waterfall Drive in Sparks, Nevada. The survey was performed on August 28, 2024.

Asbestos

All the following materials were found to not contain asbestos by laboratory analysis during this survey:

- Asphalt Shingle Roofing – Red (Roof Section A)
- Black Mastic (Roof Section A)
- Grey Sealant (Roof Section A)
- Grey/Black Sealant (Roof Section A)
- White Sealant (Roof Section A)
- 12" ACT Pinhole Fissure
- 4" Baseboard and Mastic – Black
- 4" Baseboard and Mastic – Tan
- Concrete
- 16" Ceramic Tile and Grout – Tan
- Drywall – Heavy Skip Trowell
- Drywall – Knockdown Texture
- Drywall – Orange Peel Texture
- Duct Tape – Grey
- 2x4 FCP Drywall
- 2x2 FCP Pinhole Fissure
- Fiberglass Duct Insulation and Foil
- Fiberglass Pipe Wrap
- Sink Coating – Black
- Unit Ventilator Sealant

It should be noted that all classrooms contain unit ventilators planned for removal during this project. These are known to have asbestos-containing sealants and coatings on portions of the units that are inaccessible during the survey. Additionally, asbestos-containing vinyl floor tiles and mastic are most likely present under each unit. These materials would need to be abated as asbestos-containing materials if discovered during the project unless tested and proven to be asbestos-free.

A 10-working day notification will need to be filed prior to the abatement of asbestos-containing materials if they are categorized as a regulated asbestos-containing material (RACM) or if they are non-friable materials that will be removed using mechanical means (e.g. removal of floor mastic with a buffer). Material disposal would be based on the friability of material, method of removal, and requirements of any other project-specific obligations.

To comply with the AHERA regulation and OSHA requirements, workers performing asbestos abatement will need to have AHERA Worker training with at least one worker trained to the AHERA Contractor-Supervisor level. Workers will need to use asbestos work practices required by OSHA for the appropriate abatement class of work being performed along with any project-specific work plans. A notification must be submitted to the local OSHA office for the abatement of asbestos-containing materials.

The contractor performing abatement of asbestos-containing materials will need to hold the A-23 license from the Nevada State Contractors Board and as required by the Nevada Administrative Code (NAC) 624.150(23).

Please see the Asbestos Survey Summary in Appendix A for a complete listing of suspect materials sampled during this survey.

Other suspect materials not included in this survey must be assumed to be asbestos-containing materials until tested and proven to be asbestos-free.

Lead

The following paints were found to be **lead-containing** by ICP laboratory analysis during this survey:

- Rust Red Paint on Metal Enclosure
- Tan Paint on Metal Unit
- White Paint on Metal Enclosure Interior
- Grey Paint on Concrete Floor
- White Paint on Metal Grill
- White Paint on FCP Ceiling (Space 161)

The following paint was found to be **lead-containing** by the WCSD ES&A department during previous surveys:

- White Paint on Drywall Wall

The following paints were found to **not contain** lead by ICP laboratory analysis during this survey:

- Baby Blue Paint on Drywall Wall
- Cream Paint on Drywall Wall
- Purple Paint on Drywall Wall
- White Paint on ACT Ceiling
- White Paint on FCP Ceiling
- Yellow Paint on Drywall Wall

Any suspect paints or coatings not included in this survey must be assumed to be lead-containing materials until tested and proven to be lead-free.

OSHA regulates the handling of paints and coatings containing lead down to any detectable concentration. Therefore, workers that will handle paints or coatings on this project must have lead training. For work with Washoe County School District, this training must be OSHA Action Level training at minimum. Any contractor with workers disturbing any quantity of detectable lead must perform an initial determination regarding worker exposures to lead, which may be based on personal air monitoring at the start of the project, prior employee monitoring from the past 12 months under workplace conditions closely resembling the current project, or objective data demonstrating that exposures will not exceed the

OSHA action level (30 micrograms per cubic meter of air). It is the employer's responsibility to conduct the initial determination and comply with any relevant OSHA requirements.

Workers must use lead-safe work practices when disturbing paints or coatings that contain lead. Disturbance of lead-containing paints or coatings must be performed within a contained area to prevent the spread and build-up of lead dust. HEPA vacuums, dustless tools or shrouds, and/or intact removal of components should be employed to minimize lead dust generation and work areas must be properly cleaned following disturbance to lead-containing materials during this project. Waste generated during disturbance to lead-containing materials must be profiled in a hazardous waste determination to ascertain proper disposal requirements.

FACS recommends that the results of this report be incorporated into any renovation plans provided for this project for informational purposes.

Limitations

This investigation is limited to the conditions and practices observed, and information made available to FACS. The methods, conclusions and recommendations provided are based on FACS' judgment, expertise, and the standard of practice for professional service. They are subject to the limitations and variability inherent in the methodology employed. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Please do not hesitate to contact our office at 775-993-7389 with any questions or concerns. Thank you for the opportunity to assist Washoe County School District with promoting worker safety and a healthy environment.

Respectfully,
FORENSIC ANALYTICAL



Daniel Prado
Assistant Director, Reno
IJPM-2057
US EPA LBP-R-I214705-2

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Chris Chipponeri
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Appendix A

Asbestos Results Summary, Sample Chain-of-Custody and Laboratory Results Report

Asbestos Survey Summary (SLG Lab Report #581150) Whitehead Elementary School – 3570 Waterfall Drive, Sparks, NV 89434 Survey Date: August 28, 2024						
Sample Numbers	**Material Description**	**Location(s) of Material**	**Material Number**	**Asbestos Content (percent)**	**Asbestos NESHAP Category**	**Approx. Quantity**
32681 32682 32683	12” ACT Pinhole Fissure	Space 156	1	None Detect in Fibrous Material	N/A	N/A
32684 32685 32686	Baseboard and Mastic 4” Black	Various Project Spaces	2	None Detect in Baseboard None Detect in Mastic None Detect in Granular Material	N/A	N/A
32687 32688 32689	Baseboard and Mastic 4” Tan	Various Project Spaces	3	None Detect in Baseboard None Detect in Mastic None Detect in Granular Material	N/A	N/A
32690 32691 32692	Concrete	Space 229	4	None Detect in Concrete	N/A	N/A
32693 32694 32695	16” Ceramic Tile and Grout – Tan	Space 107	5	None Detect in Ceramic Tile None Detect in Grout	N/A	N/A
32696 32697 32698	Drywall Wall – Heavy Skip Trowell	Space 229	6	None Detect in Drywall None Detect in Joint Compound	N/A	N/A
32699 32700 32701 32702 32703 32704 32705	Drywall – Knockdown Texture	Various Project Spaces	7	None Detect in Drywall None Detect in Joint Compound	N/A	N/A

Asbestos Survey Summary (SLG Lab Report #581150) Whitehead Elementary School – 3570 Waterfall Drive, Sparks, NV 89434 Survey Date: August 28, 2024						
Sample Numbers	**Material Description**	**Location(s) of Material**	**Material Number**	**Asbestos Content (percent)**	**Asbestos NESHAP Category**	**Approx. Quantity**
32706 32707 32708	Drywall Orange Peel Texture	Space 161	8	None Detect in Drywall None Detect in Joint Compound	N/A	N/A
32709 32710 32711	Duct Tape – Grey	Various Project spaces around HVAC units	9	None Detect in Duct Tape	N/A	N/A
32712 32713 32714	2x4 FCP Drywall	Space 161	10	None Detect in Drywall	N/A	N/A
32715 32716 32717	2x2 FCP Pinhole Fissure	Various Project Spaces	11	None Detect in Fibrous Material	N/A	N/A
32718 32719 32720	Fiberglass Duct Insulation and Foil	At HVAC Units	12	None Detect in Insulation None detect in Foil/Fiberous Material	N/A	N/A
32721 32722 32723	Fiberglass Pipe Wrap	At HVAC Units	13	None Detect in Pipe Wrap None Detect in Fibrous Material	N/A	N/A
32724 32725 32726	Sink Coating – Black	All Classroom Sinks	14	None Detect in Coating	N/A	N/A
32727 32728 32729	Unit Ventilator Sealant	All Unit Ventilators	15	None Detect in Sealant None Detect in Granular Material	N/A	N/A

Asbestos Survey Summary (SGS Lab Report #B363318) Whitehead Elementary School – 3570 Waterfall Drive, Sparks, NV 89434 Survey Date: August 28, 2024						
Sample Numbers	**Material Description**	**Location(s) of Material**	**Material Number**	**Asbestos Content (percent)**	**Asbestos NESHAP Category**	**Approx. Quantity**
01A-01E	Asphalt Shingle Roofing – Red	Roof A	1	None Detect in Stones None Detect in Black Tar None Detect in Black Felt None Detect in Wood	N/A	N/A
02A-02C	Black Mastic	Roof A	2	None Detect in Semi-Fibrous Tar None Detect in Stones None Detect in Black Tar	N/A	N/A
03A-03C	Grey Sealant	Roof A	3	None Detect in Grey Non-Fibrous Material None Detect in Clear Non-Fibrous Material None Detect in Paint	N/A	N/A
04A-04C	Grey/Black Sealant	Roof A	4	None Detect in Brown Non-Fibrous Material None Detect in Grey Non-Fibrous Material None Detect in Paint	N/A	N/A
05A-05C	White Sealant	Roof A	5	None Detect in Grey Non-Fibrous Material None Detect in Paint	N/A	N/A

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Washoe County School District (4991)
Address: 7495 S. Virginia Street
Reno, NV 89511

Order #: 581150

Attn:

Received 09/05/24
Analyzed 09/10/24
Reported 09/10/24

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-001	08/28/24	186 - 4241 -32681	N Side W Of Center		
Layer 1: Fibrous Material Gray/White, Fibrous				No Asbestos Detected	10% CELLULOSE FIBER 20% FOAMED GLASS 60% MINERAL/GLASS WOOL 10% NON FIBROUS MATERIAL
581150-002	08/28/24	186 - 4241 -32682	E Side Center		
Layer 1: Fibrous Material Gray/White, Fibrous				No Asbestos Detected	10% CELLULOSE FIBER 20% FOAMED GLASS 60% MINERAL/GLASS WOOL 10% NON FIBROUS MATERIAL
581150-003	08/28/24	186 - 4241 -32683	Center Of Space		
Layer 1: Fibrous Material Gray/White, Fibrous				No Asbestos Detected	10% CELLULOSE FIBER 20% FOAMED GLASS 60% MINERAL/GLASS WOOL 10% NON FIBROUS MATERIAL
581150-004	08/28/24	186 - 4241 -32684	S Side W End		
Layer 1: Baseboard Black, Rubbery				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Mastic Beige, Soft				No Asbestos Detected	100% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-005	08/28/24	186 - 4241 -32685	S Side W End		
Layer 1: Baseboard Black, Rubbery				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Mastic Beige, Soft				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 3: Granular Material White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-006	08/28/24	186 - 4241 -32686	E Side Center		
Layer 1: Baseboard Black, Rubbery				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Mastic Beige, Soft				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-007	08/28/24	186 - 4241 -32687	S Side Center		
Layer 1: Baseboard Tan, Rubbery				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Mastic Beige, Soft				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-008	08/28/24	186 - 4241 -32688	NE Corner		
Layer 1: Baseboard Tan, Rubbery				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Mastic Beige, Soft				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 3: Granular Material White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-009	08/28/24	186 - 4241 -32689	W Side Center		
Layer 1: Baseboard Tan, Rubbery				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Mastic Beige, Soft				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-010	08/28/24	186 - 4241 -32690	E Side N End		
Layer 1: Concrete Gray, Granular				No Asbestos Detected	2% CELLULOSE FIBER 98% NON FIBROUS MATERIAL
581150-011	08/28/24	186 - 4241 -32691	Center Of Room		
Layer 1: Concrete Gray, Granular				No Asbestos Detected	2% CELLULOSE FIBER 98% NON FIBROUS MATERIAL
581150-012	08/28/24	186 - 4241 -32692	NW Corner		
Layer 1: Concrete Gray, Granular				No Asbestos Detected	2% CELLULOSE FIBER 98% NON FIBROUS MATERIAL
581150-013	08/28/24	186 - 4241 -32693	NW Corner		
Layer 1: Ceramic Tile Tan, Hard				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Grout Tan, Granular				No Asbestos Detected	<1% CELLULOSE FIBER 100% NON FIBROUS MATERIAL
581150-014	08/28/24	186 - 4241 -32694	NW Corner		
Layer 1: Ceramic Tile Tan, Hard				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Grout Tan, Granular				No Asbestos Detected	<1% CELLULOSE FIBER 100% NON FIBROUS MATERIAL
581150-015	08/28/24	186 - 4241 -32695	NW Corner		
Layer 1: Ceramic Tile Tan, Hard				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Grout Tan, Granular				No Asbestos Detected	<1% CELLULOSE FIBER 100% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-016	08/28/24	186 - 4241 -32696	SE Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-017	08/28/24	186 - 4241 -32697	N Side E End		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-018	08/28/24	186 - 4241 -32698	N Side Center		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-019	08/28/24	186 - 4241 -32699	NE Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-020	08/28/24	186 - 4241 -32700	SE Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-021	08/28/24	186 - 4241 -32701	NW Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-022	08/28/24	186 - 4241 -32702	SW Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-023	08/28/24	186 - 4241 -32703	SE Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-024	08/28/24	186 - 4241 -32704	NW Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
581150-025	08/28/24	186 - 4241 -32705	SE Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound White, Granular No texture found.				No Asbestos Detected	100% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-026	08/28/24	186 - 4241 -32706	NW Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound/Texture White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
Unable to separate individual layers.					
581150-027	08/28/24	186 - 4241 -32707	SW Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound/Texture White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
Unable to separate individual layers.					
581150-028	08/28/24	186 - 4241 -32708	SE Corner		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
Layer 2: Joint Compound/Texture White, Granular				No Asbestos Detected	100% NON FIBROUS MATERIAL
Unable to separate individual layers.					
581150-029	08/28/24	186 - 4241 -32709	NE Corner		
Layer 1: Duct Tape Gray, Soft/Fibrous				No Asbestos Detected	5% CELLULOSE FIBER 65% NON FIBROUS MATERIAL 30% SYNTHETIC FIBER
Sample was inhomogenous, subsamples of each component were analyzed separately.					
581150-030	08/28/24	186 - 4241 -32710	N Side E End		
Layer 1: Duct Tape Gray, Soft/Fibrous				No Asbestos Detected	5% CELLULOSE FIBER 65% NON FIBROUS MATERIAL 30% SYNTHETIC FIBER
Sample was inhomogenous, subsamples of each component were analyzed separately.					
581150-031	08/28/24	186 - 4241 -32711	SW Corner		
Layer 1: Duct Tape Gray, Soft/Fibrous				No Asbestos Detected	5% CELLULOSE FIBER 65% NON FIBROUS MATERIAL 30% SYNTHETIC FIBER
Sample was inhomogenous, subsamples of each component were analyzed separately.					

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-032	08/28/24	186 - 4241 -32712	E Side N End		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
581150-033	08/28/24	186 - 4241 -32713	S Side Center		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
581150-034	08/28/24	186 - 4241 -32714	S Side E End		
Layer 1: Drywall White, Powdery				No Asbestos Detected	8% CELLULOSE FIBER 2% MINERAL/GLASS WOOL 90% NON FIBROUS MATERIAL
581150-035	08/28/24	186 - 4241 -32715	S Side E End		
Layer 1: Fibrous Material Gray/White, Fibrous				No Asbestos Detected	30% CELLULOSE FIBER 20% FOAMED GLASS 40% MINERAL/GLASS WOOL 10% NON FIBROUS MATERIAL
581150-036	08/28/24	186 - 4241 -32716	SW Corner		
Layer 1: Fibrous Material Gray/White, Fibrous				No Asbestos Detected	30% CELLULOSE FIBER 20% FOAMED GLASS 40% MINERAL/GLASS WOOL 10% NON FIBROUS MATERIAL
581150-037	08/28/24	186 - 4241 -32717	SE Corner		
Layer 1: Fibrous Material Gray/White, Fibrous				No Asbestos Detected	30% CELLULOSE FIBER 20% FOAMED GLASS 40% MINERAL/GLASS WOOL 10% NON FIBROUS MATERIAL
581150-038	08/28/24	186 - 4241 -32718	SW Corner		
Layer 1: Insulation Pink, Fibrous				No Asbestos Detected	95% MINERAL/GLASS WOOL 5% NON FIBROUS MATERIAL
Layer 2: Foil/Fiberous Material Silver/White, Soft/Fibrous				No Asbestos Detected	30% MINERAL/GLASS WOOL 70% NON FIBROUS MATERIAL

Unable to separate individual layers.

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-039	08/28/24	186 - 4241 -32719	N Side E End		
Layer 1: Insulation Pink, Fibrous				No Asbestos Detected	95% MINERAL/GLASS WOOL 5% NON FIBROUS MATERIAL
Layer 2: Foil/Fiberous Material Silver/White, Soft/Fibrous				No Asbestos Detected	30% MINERAL/GLASS WOOL 70% NON FIBROUS MATERIAL
Unable to separate individual layers.					
581150-040	08/28/24	186 - 4241 -32720	NE Corner		
Layer 1: Insulation Pink, Fibrous				No Asbestos Detected	95% MINERAL/GLASS WOOL 5% NON FIBROUS MATERIAL
Layer 2: Foil/Fiberous Material Silver/White, Soft/Fibrous				No Asbestos Detected	30% MINERAL/GLASS WOOL 70% NON FIBROUS MATERIAL
Unable to separate individual layers.					
581150-041	08/28/24	186 - 4241 -32721	NE Corner		
Layer 1: Pipe Wrap Silver/Beige, Soft/Fibrous				No Asbestos Detected	20% CELLULOSE FIBER 10% MINERAL/GLASS WOOL 70% NON FIBROUS MATERIAL
Sample was inhomogenous, subsamples of each component were analyzed separately.					
Layer 2: Fibrous Material Brown, Fibrous				No Asbestos Detected	5% CELLULOSE FIBER 90% MINERAL/GLASS WOOL 5% NON FIBROUS MATERIAL
581150-042	08/28/24	186 - 4241 -32722	N Of Center		
Layer 1: Pipe Wrap Silver/Beige, Soft/Fibrous				No Asbestos Detected	20% CELLULOSE FIBER 10% MINERAL/GLASS WOOL 70% NON FIBROUS MATERIAL
Sample was inhomogenous, subsamples of each component were analyzed separately.					
Layer 2: Fibrous Material Brown, Fibrous				No Asbestos Detected	5% CELLULOSE FIBER 90% MINERAL/GLASS WOOL 5% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-043	08/28/24	186 - 4241 -32723	N Side Center		
Layer 1: Pipe Wrap Silver/Beige, Soft/Fibrous				No Asbestos Detected	20% CELLULOSE FIBER 10% MINERAL/GLASS WOOL 70% NON FIBROUS MATERIAL
Sample was inhomogenous, subsamples of each component were analyzed separately.					
Layer 2: Fibrous Material Brown, Fibrous				No Asbestos Detected	5% CELLULOSE FIBER 90% MINERAL/GLASS WOOL 5% NON FIBROUS MATERIAL
581150-044	08/28/24	186 - 4241 -32724	E Side Center		
Layer 1: Coating Black, Bituminous/Granular				No Asbestos Detected	2% CELLULOSE FIBER 98% NON FIBROUS MATERIAL
581150-045	08/28/24	186 - 4241 -32725	E Side Center		
Layer 1: Coating Black, Bituminous/Granular				No Asbestos Detected	2% CELLULOSE FIBER 98% NON FIBROUS MATERIAL
581150-046	08/28/24	186 - 4241 -32726	S Side Center		
Layer 1: Coating Black, Bituminous/Granular				No Asbestos Detected	2% CELLULOSE FIBER 98% NON FIBROUS MATERIAL
581150-047	08/28/24	186 - 4241 -32727	S Side Center		
Layer 1: Sealant Black, Rubbery No white sealant found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Granular Material White, Granular				No Asbestos Detected	<1% CELLULOSE FIBER 100% NON FIBROUS MATERIAL
581150-048	08/28/24	186 - 4241 -32728	E Side N End		
Layer 1: Sealant Black, Rubbery No white sealant found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Granular Material White, Granular				No Asbestos Detected	<1% CELLULOSE FIBER 100% NON FIBROUS MATERIAL

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

Project:
Location: 186 - Whitehead ES
Number:

PO Number: PO223225

Method: EPA 600/R-93/116 & 40 CFR App. E Sub. E Pt. 763

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
581150-049	08/28/24	186 - 4241 -32729	E Side Center		
Layer 1: Sealant White, Rubbery No black sealant found.				No Asbestos Detected	100% NON FIBROUS MATERIAL
Layer 2: Granular Material White, Granular				No Asbestos Detected	<1% CELLULOSE FIBER 100% NON FIBROUS MATERIAL

EPA Regulatory Limit: 1%
Total layers analyzed on order: 82

581150-09/10/24 06:29 PM

Analyst **Eisen Zhao**

Reviewed By: **Dionna Cheatham**
Data Management

Reporting Limit: 1% Gravimetrically Reduced Reporting Limit: 0.01% PLM analysis is based on Visual Estimation and NESHAP recommends that any friable sample with an asbestos content less than 10 percent be verified by Point Count or TEM Analysis. The EPA recommends that any attic loose fill vermiculite should be treated as asbestos containing material. This report must not be reproduced except in full with the approval of the laboratory. The test results apply to the sample as received.

WCSD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Type: PLM, PCM, TEM **Analysis Turn Around Time: 2hr, Same Day, 1 Day, 2 Day, 3 Day, 5 Day**

Instructions: Email results to the ESA Department, and produce a separate report for each facility. New prefix numbers on a sample identifies a new site. ACCT. #4991

SAMPLE #	DATE	MAT. DESCRIPTION	LOCATION	ROOM	SITE
186 - 4241 - 32681	8/28/2024	12" ACT Pinhole Fissure	N Side W of Center	156	186 - Whitehead ES
186 - 4241 - 32682	8/28/2024	12" ACT Pinhole Fissure	E Side Center	156	186 - Whitehead ES
186 - 4241 - 32683	8/28/2024	12" ACT Pinhole Fissure	Center of Space	156	186 - Whitehead ES
186 - 4241 - 32684	8/28/2024	Baseboard and Mastic 4" Black	S Side W End	117	186 - Whitehead ES
186 - 4241 - 32685	8/28/2024	Baseboard and Mastic 4" Black	S Side W End	183	186 - Whitehead ES
186 - 4241 - 32686	8/28/2024	Baseboard and Mastic 4" Black	E Side Center	184	186 - Whitehead ES
186 - 4241 - 32687	8/28/2024	Baseboard and Mastic 4" Tan	S Side Center	109	186 - Whitehead ES
186 - 4241 - 32688	8/28/2024	Baseboard and Mastic 4" Tan	NE Corner	112	186 - Whitehead ES
186 - 4241 - 32689	8/28/2024	Baseboard and Mastic 4" Tan	W Side Center	229	186 - Whitehead ES
186 - 4241 - 32690	8/28/2024	Concrete	E Side N End	229	186 - Whitehead ES
186 - 4241 - 32691	8/28/2024	Concrete	Center of Room	229	186 - Whitehead ES
186 - 4241 - 32692	8/28/2024	Concrete	NW Corner	229	186 - Whitehead ES

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:36PM

RECEIVED BY: **DATE/TIME:** 9/5 12:36

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

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thawks 9/5/2024 12:34:48 PM

U.S. Mail N/A

WCSD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Type: PLM, PCM, TEM **Analysis Turn Around Time: 2hr, Same Day, 1 Day, 2 Day, 3 Day, 5 Day**

Instructions: Email results to the ESA Department, and produce a separate report for each facility. New prefix numbers on a sample identifies a new site. ACCT. #4991

SAMPLE #	DATE	MAT. DESCRIPTION	LOCATION	ROOM	SITE
186 - 4241 - 32693	8/28/2024	16" Ceramic Tile and Grout Tan	NW Corner	107	186 - Whitehead ES
186 - 4241 - 32694	8/28/2024	16" Ceramic Tile and Grout Tan	NW Corner	107	186 - Whitehead ES
186 - 4241 - 32695	8/28/2024	16" Ceramic Tile and Grout Tan	NW Corner	107	186 - Whitehead ES
186 - 4241 - 32696	8/28/2024	Drywall Wall-Heavy Skip Trowell w/TJ compound	SE Corner	229	186 - Whitehead ES
186 - 4241 - 32697	8/28/2024	Drywall Wall-Heavy Skip Trowell W/TJ compound	N Side E End	229	186 - Whitehead ES
186 - 4241 - 32698	8/28/2024	Drywall Ceiling Heavy Skip Trowell W TJ compound	N Side Center	229	186 - Whitehead ES
186 - 4241 - 32699	8/28/2024	Drywall Knockdown texture w TJ Compound	NE Corner	119	186 - Whitehead ES
186 - 4241 - 32700	8/28/2024	Drywall Knockdown Texture w TJ Compound	SE Corner	181	186 - Whitehead ES
186 - 4241 - 32701	8/28/2024	Drywall Knockdown Texture w TJ Compound	NW Corner	210	186 - Whitehead ES
186 - 4241 - 32702	8/28/2024	Drywall Knockdown Texture w TJ Compound	SW Corner	231	186 - Whitehead ES
186 - 4241 - 32703	8/28/2024	Drywall Knockdown Texture w TJ Compound	SE Corner	232	186 - Whitehead ES
186 - 4241 - 32704	8/28/2024	Drywall Knockdown Texture w TJ Compound	NW Corner	247	186 - Whitehead ES

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:36 PM

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

WCSD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Type: PLM, PCM, TEM **Analysis Turn Around Time: 2hr, Same Day, 1 Day, 2 Day, 3 Day, 5 Day**

Instructions: Email results to the ESA Department, and produce a separate report for each facility. New prefix numbers on a sample identifies a new site. ACCT. #4991

SAMPLE #	DATE	MAT. DESCRIPTION	LOCATION	ROOM	SITE
186 - 4241 - 32705	8/28/2024	Drywall Knockdown Texture w TJ Compound	SE Corner	233	186 - Whitehead ES
186 - 4241 - 32706	8/28/2024	Drywall Orange Peel Texture w TJ Compound	NW Corner	161	186 - Whitehead ES
186 - 4241 - 32707	8/28/2024	Drywall Orange Peel Texture w TJ Compound	SW Corner	161	186 - Whitehead ES
186 - 4241 - 32708	8/28/2024	Drywall Orange Peel Texture w TJ Compound	SE Corner	161	186 - Whitehead ES
186 - 4241 - 32709	8/28/2024	Duct Tape Grey	NE Corner	210	186 - Whitehead ES
186 - 4241 - 32710	8/28/2024	Duct Tape Grey	N Side E End	233	186 - Whitehead ES
186 - 4241 - 32711	8/28/2024	Duct Tape Grey	SW Corner	247	186 - Whitehead ES
186 - 4241 - 32712	8/28/2024	2x4 FCP Drywall	E Side N End	161	186 - Whitehead ES
186 - 4241 - 32713	8/28/2024	2x4 FCP Drywall	S Side Center	161	186 - Whitehead ES
186 - 4241 - 32714	8/28/2024	2x4 FCP Drywall	S Side E End	161	186 - Whitehead ES
186 - 4241 - 32715	8/28/2024	2x2 FCP Pinhole Fissure	S Side E End	111	186 - Whitehead ES
186 - 4241 - 32716	8/28/2024	2x2 FCP Pinhole Fissure	SW Corner	118	186 - Whitehead ES

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:36 PM

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

WCSD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Type: (PLM), PCM, TEM **Analysis Turn Around Time: 2hr, Same Day, 1 Day, 2 Day, (3 Day), 5 Day**

Instructions: Email results to the ESA Department, and produce a separate report for each facility. New prefix numbers on a sample identifies a new site. ACCT. #4991

SAMPLE #	DATE	MAT. DESCRIPTION	LOCATION	ROOM	SITE
186 - 4241 - 32717	8/28/2024	2x2 FCP Pinhole Fissure	SE Corner	192	186 - Whitehead ES
186 - 4241 - 32718	8/28/2024	Fiberglass Duct Insulation and Foil	SW Corner	247	186 - Whitehead ES
186 - 4241 - 32719	8/28/2024	Fiberglass Duct Insulation and Foil	N Side E End	233	186 - Whitehead ES
186 - 4241 - 32720	8/28/2024	Fiberglass Duct Insulation and Foil	NE Corner	210	186 - Whitehead ES
186 - 4241 - 32721	8/28/2024	Fiberglass Pipe Wrap	NW Corner	229	186 - Whitehead ES
186 - 4241 - 32722	8/28/2024	Fiberglass Pipe Wrap	N of Center	229	186 - Whitehead ES
186 - 4241 - 32723	8/28/2024	Fiberglass Pipe Wrap	N Side Center	229	186 - Whitehead ES
186 - 4241 - 32724	8/28/2024	Sink Coating Black	E Side Center	184	186 - Whitehead ES
186 - 4241 - 32725	8/28/2024	Sink Coating Black	E Side Center	171	186 - Whitehead ES
186 - 4241 - 32726	8/28/2024	Sink Coating Black	S Side Center	117	186 - Whitehead ES
186 - 4241 - 32727	8/28/2024	Unit Ventilator Sealant	S Side Center	191	186 - Whitehead ES
186 - 4241 - 32728	8/28/2024	Unit Ventilator Sealant	E Side N End	183	186 - Whitehead ES

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:36PM

RECEIVED BY: [signature] **DATE/TIME:** 9/5 12:30

RECEIVED BY: _____ **DATE/TIME:** _____

RECEIVED BY: _____ **DATE/TIME:** _____

WCSD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Type: PLM, PCM, TEM **Analysis Turn Around Time: 2hr, Same Day, 1 Day, 2 Day, 3 Day, 5 Day**

Instructions: Email results to the ESA Department, and produce a separate report for each facility. New prefix numbers on a sample identifies a new site. ACCT. #4991

SAMPLE #	DATE	MAT. DESCRIPTION	LOCATION	ROOM	SITE
186 - 4241 - 32729	8/28/2024	Unit Ventilator Sealant	E Side Center	118	186 - Whitehead ES

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:36PM

RECEIVED BY: [signature] **DATE/TIME:** 9/5 12:35

RECEIVED BY: _____ **DATE/TIME:** _____

RECEIVED BY: _____ **DATE/TIME:** _____

FACS
Forensic Analytical Consulting Services

Bulk Material Analysis Request Form

Date: August 29, 2024
Collected by: Daniel Prado
Date Collected: August 28, 2024
Laboratory: SGS Forensic Laboratories

Contact Name: Daniel Prado
Bill: RN12
Type of Analysis: PLM w/ Dispersion Staining
Turnaround Time: 5 Day

Job ID: PJ83156
Job Site: WCSD – Whitehead ES – Section A
Special Instructions:
Send Results: danny.prado@facs.com

Sample ID	Results	Material Description and Location
PJ83156-01A		Asphalt Shingle Roofing – Red
		Section A – NW Pod
PJ83156-01B		Asphalt Shingle Roofing – Red
		Section A – SW Pod
PJ83156-01C		Asphalt Shingle Roofing – Red
		Section A – South Pod
PJ83156-01D		Asphalt Shingle Roofing – Red
		Section A – NE Pod
PJ83156-01E		Asphalt Shingle Roofing – Red
		Section A – North Pod
PJ83156-02A		Black Mastic
		Section A – NE Pod
PJ83156-02B		Black Mastic
		Section A – NE Pod
PJ83156-02C		Black Mastic
		Section A – South Pod
PJ83156-03A		Grey Sealant
		Section A – NE Pod
PJ83156-03B		Grey Sealant
		Section A – West Pod

Submitted By: _____ Date: 8/29/2024

Received By: _____ Date: _____

RECEIVED
AUG 30 2024
BY: FXb212 1030

FACS
Forensic Analytical Consulting Services

Bulk Material Analysis Request Form

Date: August 29, 2024
Collected by: Daniel Prado
Date Collected: August 28, 2024
Laboratory: SGS Forensic Laboratories

Contact Name: Daniel Prado
Bill: RN12
Type of Analysis: PLM w/ Dispersion Staining
Turnaround Time: 5 Day

Job ID: PJ83156
Job Site: WCSD – Whitehead ES – Section A
Special Instructions:
Send Results: danny.prado@facs.com

Sample ID	Results	Material Description and Location
PJ83156-03C		Grey Sealant
		Section A – NW Pod
PJ83156-04A		Grey/Black Sealant
		Section A – East Pod
PJ83156-04B		Grey/Black Sealant
		Section A – South Pod
PJ83156-04C		Grey/Black Sealant
		Section A – NE Pod
PJ83156-05A		White Sealant
		Section A – North Pod
PJ83156-05B		White Sealant
		Section A – NE Pod
PJ83156-05C		White Sealant
		Section A – SE Pod

Submitted By: _____ Date: 8/29/2024

Received By: _____ Date: _____

RECEIVED
AUG 30 2024
FX6217
BY: 10:30

Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-0

Forensic Analytical Consulting Svcs
Daniel Prado
21228 Cabot Blvd.

Hayward, CA 94545

Client ID: FACS00
Report Number: B363318
Date Received: 08/30/24
Date Analyzed: 09/09/24
Date Printed: 09/09/24
First Reported: 09/09/24

Job ID/Site: PJ83156; Washoe County School District - Capital Projects & Planning 21228 Cabot Blvd., Hayward, CA 94545
Date(s) Collected: 08/28/2024

SGSFL Job ID: FACS00
Total Samples Submitted: 17
Total Samples Analyzed: 17

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-01A	12766612						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							
PJ83156-01B	12766613						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-01C	12766614						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							
PJ83156-01D	12766615						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-01E	12766616						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							
PJ83156-02A	12766617						
Layer: Black Semi-Fibrous Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %)							
PJ83156-02B	12766618						
Layer: Black Semi-Fibrous Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %)							
PJ83156-02C	12766619						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
PJ83156-03A	12766620						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Clear Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
PJ83156-03B	12766621						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

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Report Number: B363318

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 09/09/24

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-03C	12766622						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-04A	12766623						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-04B	12766624						
Layer: Brown Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-04C	12766625						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-05A	12766626						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-05B	12766627						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-05C	12766628						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B363318

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 09/09/24

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Maria Cosper, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Appendix B

Lead Paint Chip Summary Table, Sample Chain-of-Custody and Laboratory Results Report

Lead Paint Chip Results Summary (SLG Lab Report 581149) Whitehead Elementary School – 3570 Waterfall Drive, Sparks, NV 89434 Survey Date: August 28, 2024					
Sample Number	**Component Location**	**Component**	**Color**	**Substrate**	**Analytical Results mg/kg**
14095	100 - NW Corner	Wall	Baby Blue	Drywall	<12.8
14096	116 - S Side W End	Wall	Baby Blue	Drywall	<12.3
14097	118 - S Side E End	Wall	Baby Blue	Drywall	<12.6
14098	229 - N Side W End	Wall	Cream	Drywall	<11.8
14099	229 - E Side Center	Wall	Cream	Drywall	<12.3
14100	229 - S Side E End	Wall	Cream	Drywall	<12.0
14101	229 - N Side E End	Floor	Grey	Concrete	14.4
14102	229 - Center of Space	Floor	Grey	Concrete	<12.5
14103	229 - S Side E End	Floor	Grey	Concrete	<12.8
14104	220 - E Side at Entrance to Space 100	Wall	Purple	Drywall	<11.9
14105	220 E Side at Entrance to Space 102	Wall	Purple	Drywall	<12.1
14106	220 – SE End at Entrance to Space 103	Wall	Purple	Drywall	<12.8
14107	100 - NE Corner	Wall	White	Drywall	<12.4
14108	161 - S Side Center	Wall	White	Drywall	<12.6
14109	210 - NW Corner	Wall	White	Drywall	<12.0

Lead Paint Chip Results Summary (SLG Lab Report 581149) Whitehead Elementary School – 3570 Waterfall Drive, Sparks, NV 89434 Survey Date: August 28, 2024					
Sample Number	**Component Location**	**Component**	**Color**	**Substrate**	**Analytical Results mg/kg**
14110	233 - SE Corner	Wall	White	Drywall	<11.6
14111	100 - NW Corner	Grill	White	Metal	643
14112	100 - NE Corner	Grill	White	Metal	669
14113	156 - S Side W End	Grill	White	Metal	844
14114	156 - NE Corner	Ceiling	White	ACT	<12.8
14115	156 - E Side Center	Ceiling	White	ACT	<12.5
14116	156 - S Side W End	Ceiling	White	ACT	<12.1
14117	111 - S Side E End	Ceiling	White	FCP	<12.7
14118	118 - SW Corner	Ceiling	White	FCP	<13.1
14119	192 - SE Corner	Ceiling	White	FCP	<12.0
14120	161 - W Side Center	Ceiling	White	FCP	19.8
14121	161 - E Side N End	Ceiling	White	FCP	20.1
14122	161 - S Side Center	Ceiling	White	FCP	18.3
14123	160 - SW Corner of Stage	Wall	Yellow	Drywall	<12.1
14124	160 - S Side W End of Stage	Wall	Yellow	Drywall	<12.9
14125	160 - SE Corner of Stage	Wall	Yellow	Drywall	<12.4

*Samples in bold lettering are lead-based

"<" with results indicate samples did not contain lead above the laboratory's reporting limit. This does not mean this paint color may be handled as lead-free and results need to be interpreted with information from the written report above.

Lead Paint Chip Results Summary (SGS Lab Report M262865) Whitehead Elementary School – 3570 Waterfall Drive, Sparks, NV 89434 Survey Date: August 28, 2024					
Sample Number	**Component Location**	**Component**	**Color**	**Substrate**	**Analytical Results mg/kg**
Pb01A	Roof A – SW Pod	Enclosure	Rust Red	Metal	15
Pb01B	Roof A – N Pod	Enclosure	Rust Red	Metal	15
Pb01C	Roof A – NE Pod	Enclosure	Rust Red	Metal	11
Pb02A	Roof A – NE Pod	Unit	Tan	Metal	17
Pb02B	Roof A – S Pod	Unit	Tan	Metal	20
Pb02C	Roof A – NW Pod	Unit	Tan	Metal	20
Pb03A	Roof A – E Pod	Enclosure Interior	White	Metal	11
Pb03B	Roof A – NE Pod	Enclosure Interior	White	Metal	9
Pb03C	Roof A – NW Pod	Enclosure Interior	White	Metal	20

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Washoe County School District (4991)
Address: 7495 S. Virginia Street
Reno, NV 89511

Attn:

Project:
Location: 186- Whitehead ES
Number:

Order #: 581149

Matrix Paint
Received 09/05/24
Reported 09/10/24

PO Number: PO223224

Sample ID / Parameter	Cust. Sample ID	Location / Method	Result	RL*	Units	Analysis Date	Analyst
581149-001	186PB-4241-14095	NW Corner Wall					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.8**	12.7	mg/kg	09/06/24	DM
581149-002	186PB-4241-14096	S Side W End Wall					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.3**	12.2	mg/kg	09/06/24	DM
581149-003	186PB-4241-14097	S Side E End Wall					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.6**	12.5	mg/kg	09/06/24	DM
581149-004	186PB-4241-14098	N Side W End Wall					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<11.8**	11.7	mg/kg	09/06/24	DM
581149-005	186PB-4241-14099	E Side Center					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.3**	12.3	mg/kg	09/06/24	DM
581149-006	186PB-4241-14100	S Side E End					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.0**	12.0	mg/kg	09/06/24	DM
581149-007	186PB-4241-14101	N Side E End					
Metals Analysis							
Lead		EPA 6010D / 3050B	**14.4**	13.2	mg/kg	09/06/24	DM
581149-008	186PB-4241-14102	Center Of Space					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.5**	12.5	mg/kg	09/06/24	DM
581149-009	186PB-4241-14103	S Side E End					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.8**	12.8	mg/kg	09/06/24	DM
581149-010	186PB-4241-14104	E Side At Ent Space 100					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<11.9**	11.9	mg/kg	09/06/24	DM

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Washoe County School District (4991)
Address: 7495 S. Virginia Street
Reno, NV 89511

Attn:

Project:
Location: 186- Whitehead ES
Number:

Order #: 581149

Matrix Paint
Received 09/05/24
Reported 09/10/24

PO Number: PO223224

Sample ID / Parameter	Cust. Sample ID	Location / Method	Result	RL*	Units	Analysis Date	Analyst
581149-011	186PB-4241-14105	E Side At Ent Space 102					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.1**	12.0	mg/kg	09/06/24	DM
581149-012	186PB-4241-14106	E Side At Ent Space 103					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.8**	12.7	mg/kg	09/06/24	DM
581149-013	186PB-4241-14107	NE Corner					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.4**	12.3	mg/kg	09/06/24	DM
581149-014	186PB-4241-14108	S Side Center					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.6**	12.6	mg/kg	09/06/24	DM
581149-015	186PB-4241-14109	NW Corner					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.0**	11.9	mg/kg	09/06/24	DM
581149-016	186PB-4241-14110	SE Corner					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<11.6**	11.6	mg/kg	09/06/24	DM
581149-017	186PB-4241-14111	NW Corner Grill					
Metals Analysis							
Lead		EPA 6010D / 3050B	**643**	12.2	mg/kg	09/09/24	DM
581149-018	186PB-4241-14112	SE Corner Grill					
Metals Analysis							
Lead		EPA 6010D / 3050B	**669**	20.8	mg/kg	09/09/24	DM
581149-019	186PB-4241-14113	S Side W End Grill					
Metals Analysis							
Lead		EPA 6010D / 3050B	**844**	122	mg/kg	09/09/24	DM
581149-020	186PB-4241-14114	NE Corner Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.8**	12.8	mg/kg	09/10/24	DM

Matrix Spike failed for Pb due to possible interference. Sample results are unaffected.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Washoe County School District (4991)
Address: 7495 S. Virginia Street
Reno, NV 89511

Attn:

Project:
Location: 186- Whitehead ES
Number:

Order #: 581149

Matrix Paint
Received 09/05/24
Reported 09/10/24

PO Number: PO223224

Sample ID / Parameter	Cust. Sample ID	Location / Method	Result	RL*	Units	Analysis Date	Analyst
581149-021	186PB-4241-14115	E Side Center Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.5**	12.5	mg/kg	09/09/24	DM
581149-022	186PB-4241-14116	S Side W End Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.1**	12.1	mg/kg	09/09/24	DM
581149-023	186PB-4241-14117	S Side E End Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.7**	12.7	mg/kg	09/09/24	DM
581149-024	186PB-4241-14118	SW Corner Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<13.1**	13.0	mg/kg	09/09/24	DM
581149-025	186PB-4241-14119	SE Corner Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.0**	12.0	mg/kg	09/09/24	DM
581149-026	186PB-4241-14120	W Side Center Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**19.8**	12.9	mg/kg	09/09/24	DM
581149-027	186PB-4241-14121	E Side N End Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**20.1**	12.6	mg/kg	09/09/24	DM
581149-028	186PB-4241-14122	S Side Center Ceiling					
Metals Analysis							
Lead		EPA 6010D / 3050B	**18.3**	12.5	mg/kg	09/09/24	DM
581149-029	186PB-4241-14123	SW Corner Of Stage Wall					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.1**	12.0	mg/kg	09/09/24	DM
581149-030	186PB-4241-14124	S Side W End Stage Wall					
Metals Analysis							
Lead		EPA 6010D / 3050B	**<12.9**	12.8	mg/kg	09/09/24	DM

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: Washoe County School District (4991)
Address: 7495 S. Virginia Street
Reno, NV 89511

Attn:

Project:
Location: 186- Whitehead ES
Number:

Order #: 581149

Matrix Paint
Received 09/05/24
Reported 09/10/24

PO Number: PO223224

Sample ID / Parameter	Cust. Sample ID / Method	Location	Result	RL*	Units	Analysis Date	Analyst
581149-031	186PB-4241-14125	SE Corner Of Stage Wall					
Metals Analysis							
Lead	EPA 6010D / 3050B		**<12.4**	12.3	mg/kg	09/09/24	DM

581149-09/10/24 06:32 PM

Reviewed By: **Dionna Cheatham**
Data Management

State Certifications

Method	Parameter	Nevada	Virginia
EPA 6010D	Lead	Not Certified	VELAP Certified

State	Certificate Number
Virginia	VELAP 12761

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.

WCSD LEAD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Turn Around Time: **Rush-Same Day, 1 Day, 2 Day, 3 Day, 5 Day**

Instructions: Email results to the ESA Department. In addition, produce a separate report for each facility. A new prefix number on a sample identifies a new site. ACCT. #4991

Analysis Type: ICP **Date Sampled: 8/28/2024** **Facility: 186 - Whitehead ES**

SAMPLE #	ITEM DESCRIPTION	SUBSTRATE	COLOR	ROOM
186PB - 4241 - 14095	NW Corner wall	Drywall	Baby Blue	100
186PB - 4241 - 14096	S Side W End Wall	Drywall	Baby Blue	116
186PB - 4241 - 14097	S Side E End Wall	Drywall	Baby Blue	118
186PB - 4241 - 14098	N Side W End Wall	Drywall	Cream	229
186PB - 4241 - 14099	E Side Center	Drywall	Cream	229
186PB - 4241 - 14100	S Side E End	Drywall	Cream	229
186PB - 4241 - 14101	N Side E End	Concrete	Grey	229
186PB - 4241 - 14102	Center of Space	Concrete	Grey	229

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:40 PM

RECEIVED BY: **DATE/TIME:** 9/5 12:35

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

S 31

581149

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thawks 9/5/2024 12:34:48 PM

U.S. Mail N/A

WCSD LEAD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Turn Around Time: **Rush-Same Day,** **1 Day,** **2 Day,** **3 Day,** **5 Day**

Instructions: Email results to the ESA Department. In addition, produce a separate report for each facility. A new prefix number on a sample identifies a new site. ACCT. #4991

Analysis Type: ICP **Date Sampled: 8/28/2024** **Facility: 186 - Whitehead ES**

SAMPLE #	ITEM DESCRIPTION	SUBSTRATE	COLOR	ROOM
186PB - 4241 - 14103	S Side E End	Concrete	Grey	229
186PB - 4241 - 14104	E Side at Entrance of Space 100	Drywall	Purple	220
186PB - 4241 - 14105	E Side at Entrance of Space 102	Drywall	Purple	220
186PB - 4241 - 14106	SE End at Entrance to Space 103	Drywall	Purple	220
186PB - 4241 - 14107	NE Corner	Drywall	White	100
186PB - 4241 - 14108	S Side Center	Drywall	White	161
186PB - 4241 - 14109	NW Corner	Drywall	White	210
186PB - 4241 - 14110	SE Corner	Drywall	White	233

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:40PM

RECEIVED BY: **DATE/TIME:** 9/5 12:35

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

WCSD LEAD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Turn Around Time: **Rush-Same Day, 1 Day, 2 Day, (3 Day), 5 Day**

Instructions: Email results to the ESA Department. In addition, produce a separate report for each facility. A new prefix number on a sample identifies a new site. ACCT. #4991

Analysis Type: (ICP) **Date Sampled: 8/28/2024** **Facility: 186 - Whitehead ES**

SAMPLE #	ITEM DESCRIPTION	SUBSTRATE	COLOR	ROOM
186PB - 4241 - 14111	NW Corner Grill	Metal	White	100
186PB - 4241 - 14112	SE Corner Grill	Metal	White	100
186PB - 4241 - 14113	S Side W End Grill	Metal	White	156
186PB - 4241 - 14114	NE Corner Ceiling	ACT	White	156
186PB - 4241 - 14115	E Side Center Ceiling	ACT	White	156
186PB - 4241 - 14116	S Side W End Ceiling	ACT	White	156
186PB - 4241 - 14117	S Side E End Ceiling	FCP	White	111
186PB - 4241 - 14118	SW Corner Ceiling	FCP	White	118

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:40PM

RECEIVED BY: [signature] **DATE/TIME:** 9/5 12:35

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

WCSD LEAD BULK SAMPLE CHAIN OF CUSTODY FORM

Requested By: John Nolan **Phone Number: 775-325-8491** **Fax Number: 775-851-5662**

Analysis Turn Around Time: Rush-Same Day, 1 Day, 2 Day, (3 Day), 5 Day

Instructions: Email results to the ESA Department. In addition, produce a separate report for each facility. A new prefix number on a sample identifies a new site. ACCT. #4991

Analysis Type: (ICP) **Date Sampled: 8/28/2024** **Facility: 186 - Whitehead ES**

SAMPLE #	ITEM DESCRIPTION	SUBSTRATE	COLOR	ROOM
186PB - 4241 - 14119	SE Corner Ceiling	FCP	White	192
186PB - 4241 - 14120	W Side Center Ceiling	FCP	White	161
186PB - 4241 - 14121	E Side N End Ceiling	FCP	White	161
186PB - 4241 - 14122	S Side Center Ceiling	FCP	White	161
186PB - 4241 - 14123	SW Corner of Stage Wall	Drywall	Yellow	160
186PB - 4241 - 14124	S Side W End of Stage Wall	Drywall	Yellow	160
186PB - 4241 - 14125	SE Corner of Stage Wall	Drywall	Yellow	160

SENT BY: Brian Priest **DATE/TIME:** 9-3-24 1:40PM

RECEIVED BY: [signature] **DATE/TIME:** 9/5 12:35

RECEIVED BY: **DATE/TIME:**

RECEIVED BY: **DATE/TIME:**

FACS 30
Forensic Analytical Consulting Services
CELEBRATING 30 YEARS OF EXCELLENCE 1986-2016

Bulk Material Analysis Request Form

Date: 08-29-2024
Collected by: Zachary Ramos and Daniel Prado
Date Collected: 08-28-2024
Laboratory: SGS Forensics

Contact Name: Daniel Prado
Bill: RN12
Type of Analysis: ICP for Lead
Turnaround Time: 5 Day

Job ID: PJ83156
Job Site: Whitehead ES – HVAC Upgrades Survey
Special Instructions:
Send Results: Danny.prado@facs.com

Sample ID	Sample Size	Material Description and Location
PJ83156-Pb01A		Rust red paint on metal enclosure
		Roof A - SW pod
PJ83156-Pb01B		Rust red paint on metal enclosure
		Roof A - N pod
PJ83156-Pb01C		Rust red paint on metal enclosure
		Roof A - NE pod
PJ83156-Pb02A		Tan paint on metal unit
		Roof A - NE pod
PJ83156-Pb02B		Tan paint on metal unit
		Roof A - S pod
PJ83156-Pb02C		Tan paint on metal unit
		Roof A - NW pod
PJ83156-Pb03A		White paint on metal enclosure interior
		Roof A - E pod
PJ83156-Pb03B		White paint on metal enclosure interior
		Roof A - NE pod
PJ83156-Pb03C		White paint on metal enclosure interior
		Roof A - NW pod

Submitted By: Zachary Ramos Date: 8-29-24
Received By: Gestle Lazaro Reyes Date: 8/30/24 09:37 ET

Metals Analysis of Bulks - TTLC

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Forensic Analytical Consulting Svcs
Daniel Prado
21228 Cabot Blvd.

Hayward, CA 94545

Client ID: FACS00
Report Number: M262865
Date Received: 08/30/24
Date Analyzed: 09/09/24
Date Printed: 09/09/24
First Reported: 09/09/24

Job ID / Site: PJ83156; Washoe County School District - Capital Projects & Planning 21228 Cabot Blvd., Hayward, CA 94545
SGSFL Job ID: FACS00

Date(s) Collected: 08/28/24
Total Samples Submitted: 9
Total Samples Analyzed: 9

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
PJ83156-PB01A	LM274912	Pb	15	mg/kg	3	EPA 3050B/6010B
PJ83156-PB01B	LM274913	Pb	15	mg/kg	3	EPA 3050B/6010B
PJ83156-PB01C	LM274914	Pb	11	mg/kg	7	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB02A	LM274915	Pb	17	mg/kg	7	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB02B	LM274916	Pb	20	mg/kg	9	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB02C	LM274917	Pb	20	mg/kg	20	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB03A	LM274918	Pb	11	mg/kg	6	EPA 3050B/6010B
PJ83156-PB03B	LM274919	Pb	9	mg/kg	5	EPA 3050B/6010B
PJ83156-PB03C	LM274920	Pb	20	mg/kg	20	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Vincent To, Laboratory Supervisor, Carson Laboratory

Analytical results and reports are generated by SGS at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGS to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by SGS. The client is solely responsible for the use and interpretation of test results and reports requested from SGS. SGS is not able to assess the degree of hazard resulting from materials analyzed. SGS reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. Any modifications that have been made to referenced test methods are documented in SGS Standard Operating Procedures Manual. Sample results have not been blank corrected. Quality control and sample receipt condition were acceptable unless otherwise noted.
Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.

Appendix C
Site Photographs



Red Paint on Metal Enclosure



White Paint on Metal Enclosure Interior



Tan Paint on Metal Unit



Black/Grey Sealant



Black Mastic



Grey Sealant



White Sealant
Red Asphalt Roofing



Grey Paint on Concrete Floor
Concrete



Fiberglass Pipe Wrap



Drywall – Heavy Skip Trowell Texture
Cream Paint on Drywall Wall



4” Baseboard and Mastic - Tan



Drywall – Knockdown Texture



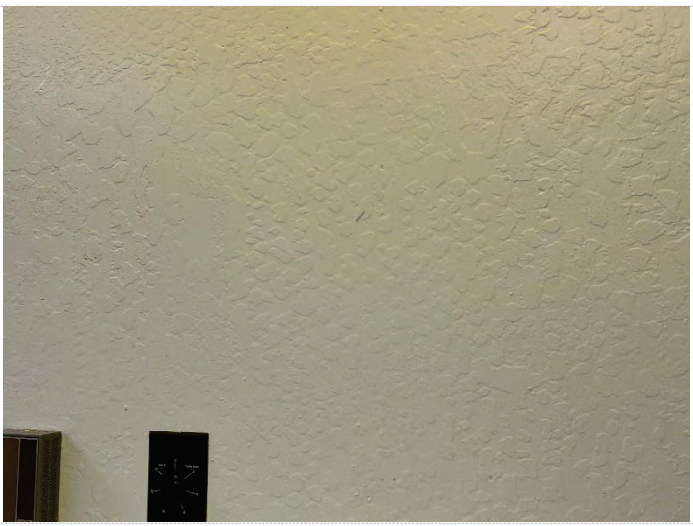
Fiberglass Duct Insulation and Foil



Duct Tape – Grey



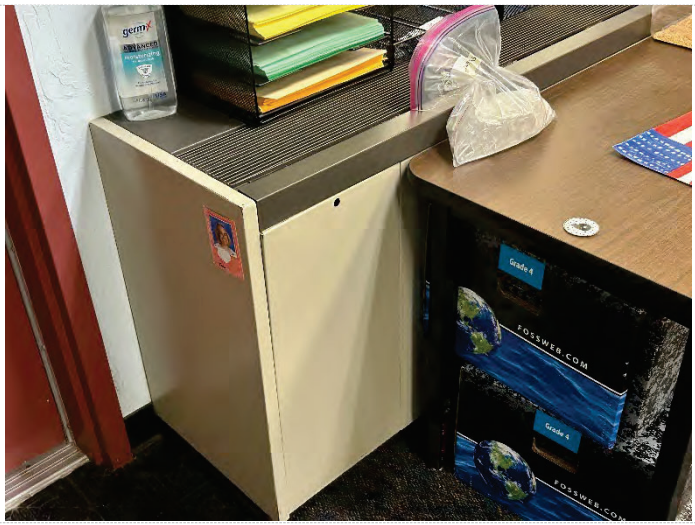
4” Baseboard and Mastic – Black



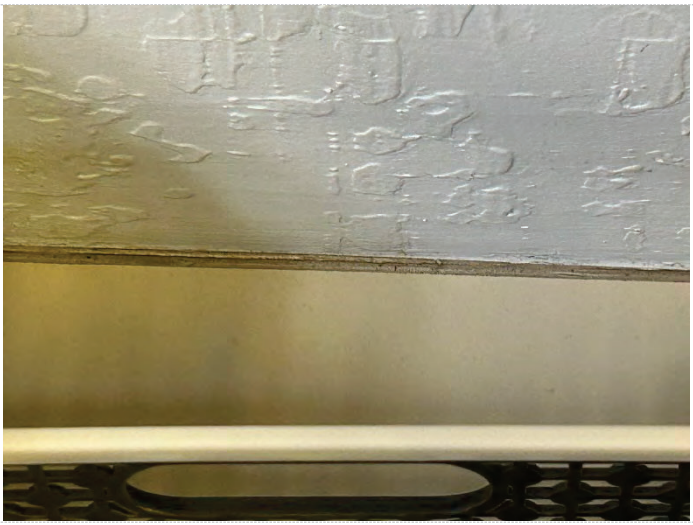
White Paint on Drywall



2x2 FCP – Pinhole Fissure



Unit Ventilator



Unit Ventilator Sealant



Baby Blue Paint on Drywall



Purple Paint on Drywall



16” Ceramic Tile and Grout



White Paint on Metal Grill



Sink Coating – Black



Yellow Paint on Drywall



MPR HVAC Unit Overview

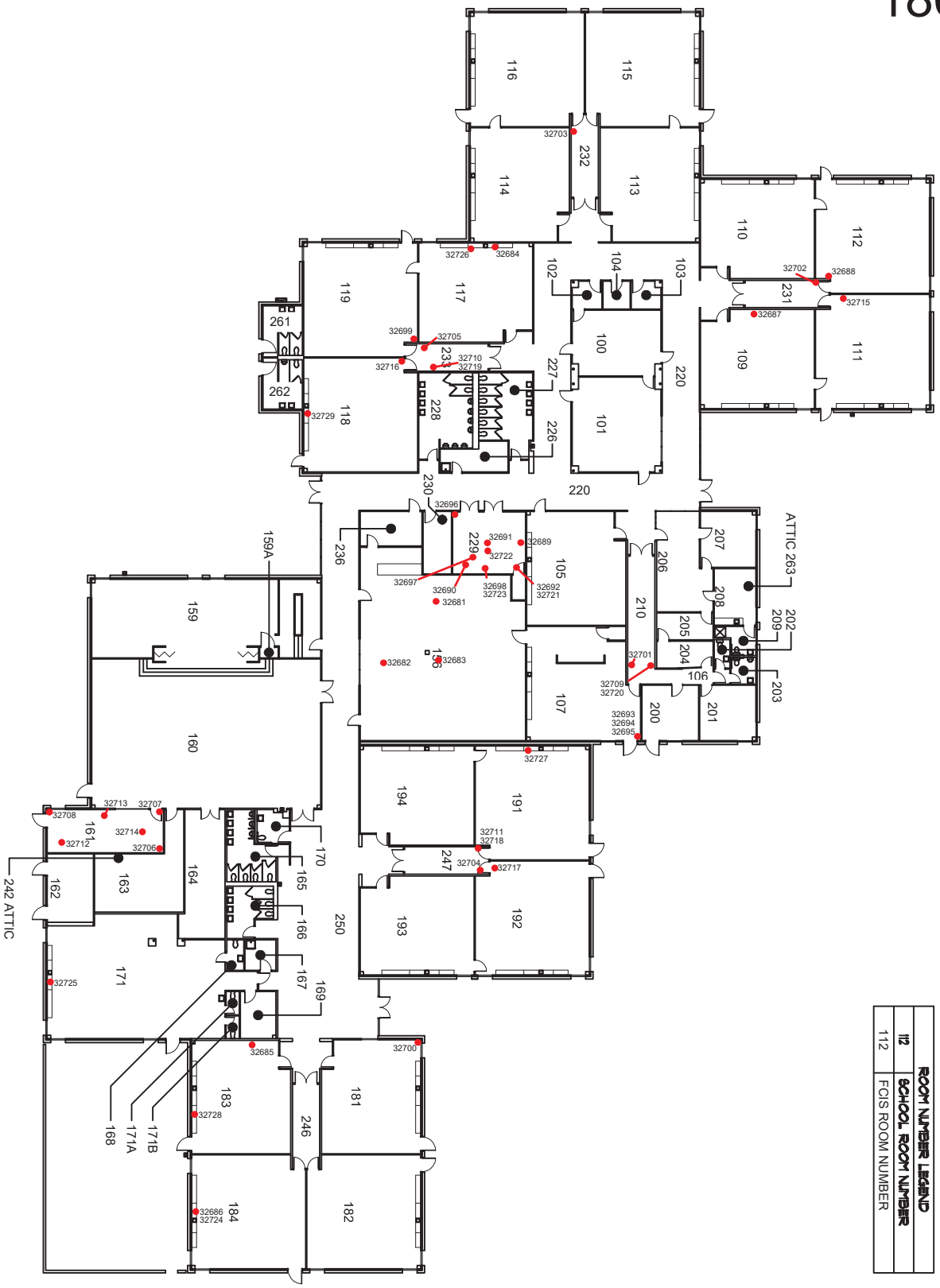


2x4 FCP – Drywall



Drywall – Orange Peel Texture

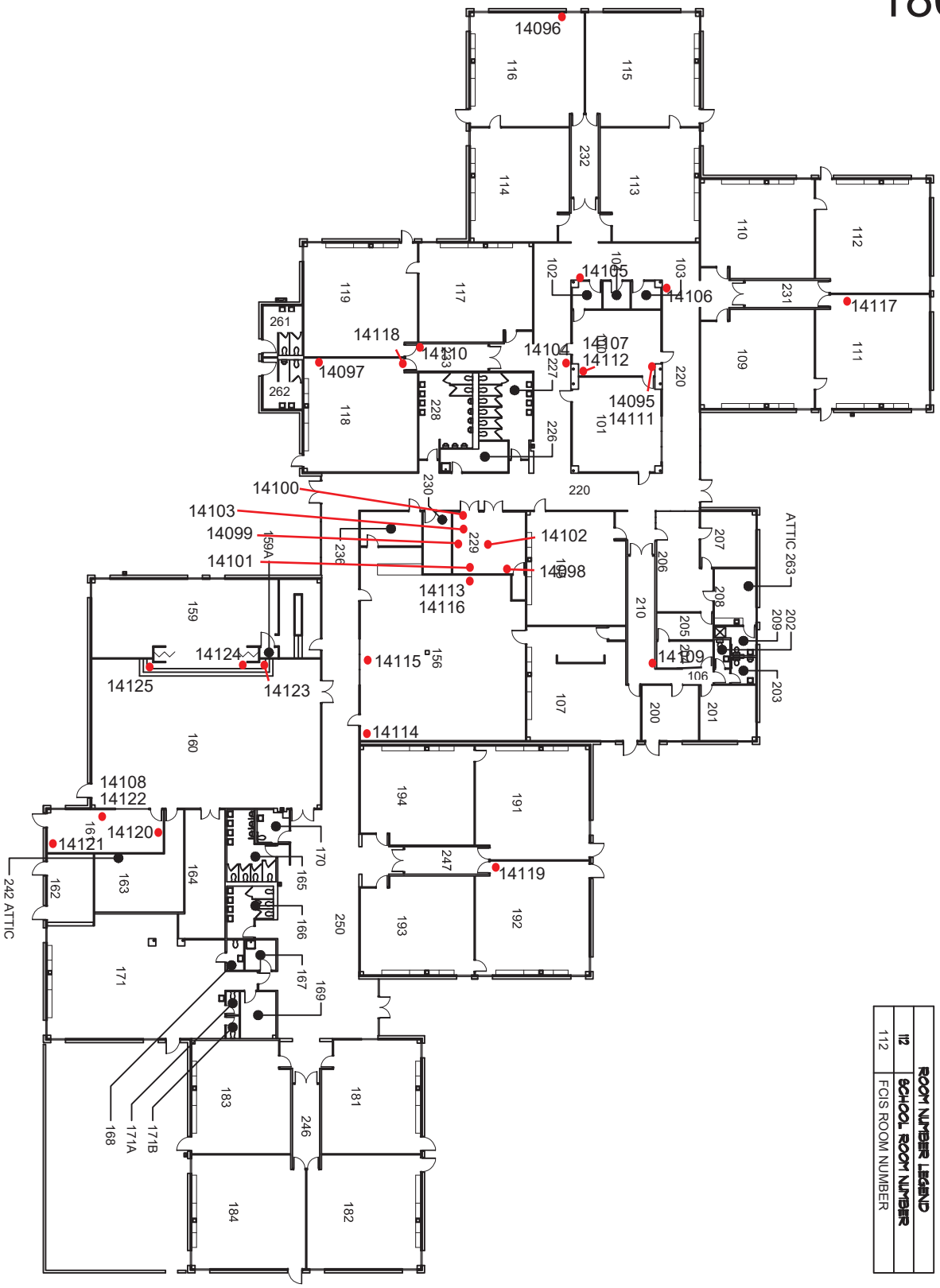
Appendix D
Sample Location Drawings



JERRY WHITEHEAD ELEMENTARY - FCIS ROOM NUMBER REFERENCE FLOOR PLAN

N.T.S.

5/22/2013 1:28:49 PM



ROOM NUMBER LEGEND	
112	SCHOOL ROOM NUMBER
112	FCIS ROOM NUMBER

5/22/2013 1:28:49 PM

JERRY WHITEHEAD ELEMENTARY - FCIS ROOM NUMBER REFERENCE FLOOR PLAN

N.T.S.

Roof Section	Size (Sq. Ft.)	Roof System	Roof Membrane	Year Installed	Manufacturer	Mfgr Warranty Expires	Mfgr Warranty Phone	Contractor	Contractor Warranty Expires	Contractor Warranty Phone	Estimated Replacement
A, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and A-9 (YR 2018 RI)	36,864	Steep Roofing	Shingles	2008	Malarkey Roofing Products	08/27/2043	(503) 240-7826	Kodiak Roofing	08/28/2010	(775) 562-3800	6-10 years
B (YR 2018 RI)	8,518	Single-ply	PVC	2008	Sika Sarnafil, Inc.	08/13/2018	(800) 451-2504	Kodiak Roofing	08/28/2010	(775) 562-3800	11+ years
C - Portable 730 (YR 2018 RI)	2,103	Steep Roofing	Asphalt shingle	2015	Unknown	-	-	Unknown	-	-	11+ years

DRAWING RECORD

REV. NO.	DESCRIPTION	DATE	BY
280A	2018 ROOF REINSPECTION PLAN	10/10/18	MW/DH

ACTION CODE LEGEND

2 FIELD MEMBRANE
- 2.60 REPLACE DAMAGED AND MISSING SHINGLE
- 2.64 RESET NAIL AND SEAL NAIL HEAD

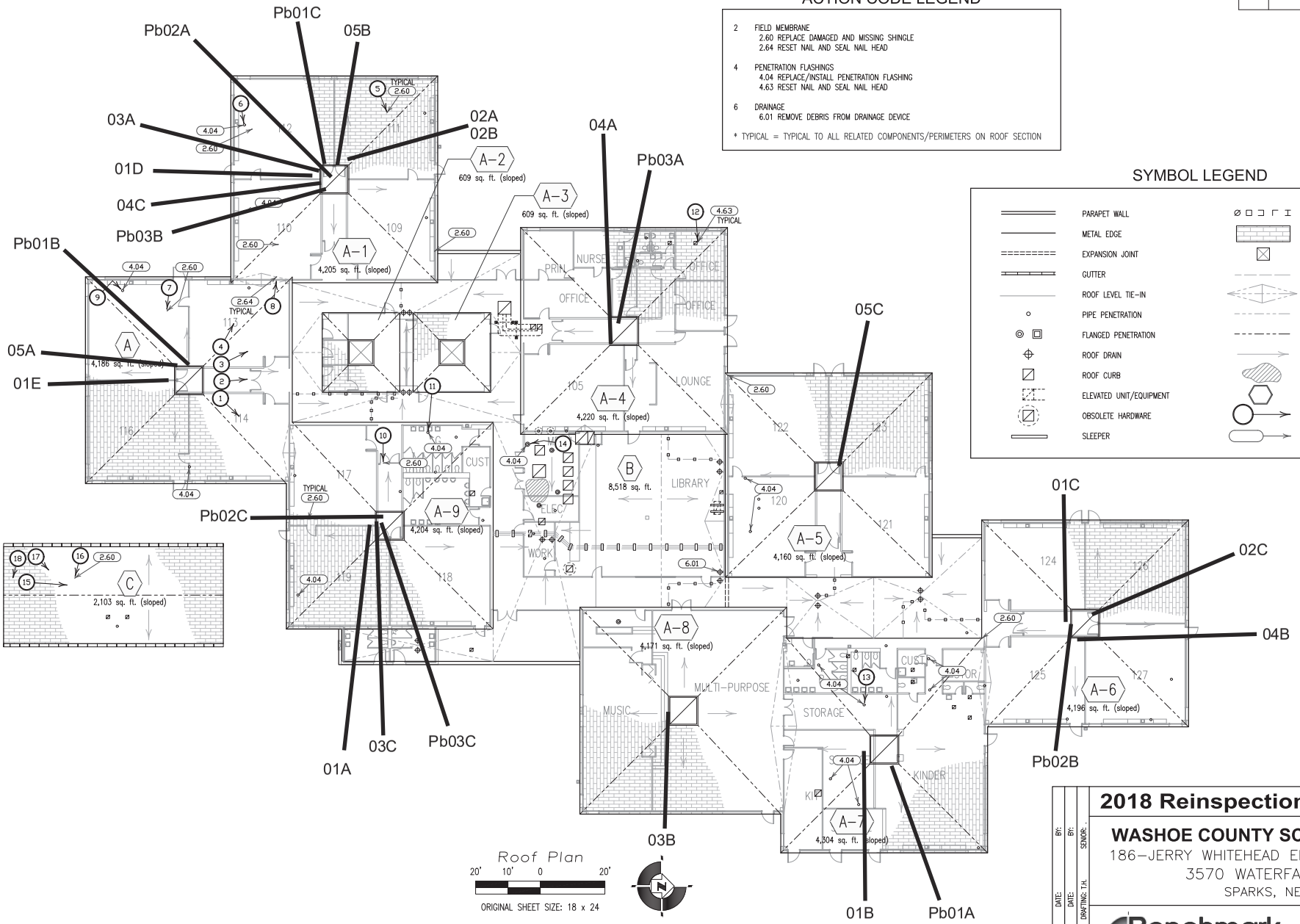
4 PENETRATION FLASHINGS
- 4.04 REPLACE/INSTALL PENETRATION FLASHING
- 4.63 RESET NAIL AND SEAL NAIL HEAD

6 DRAINAGE
- 6.01 REMOVE DEBRIS FROM DRAINAGE DEVICE

* TYPICAL = TYPICAL TO ALL RELATED COMPONENTS/PERIMETERS ON ROOF SECTION

SYMBOL LEGEND

PARAPET WALL
METAL EDGE
EXPANSION JOINT
GUTTER
ROOF LEVEL TIE-IN
PIPE PENETRATION
FLANGED PENETRATION
ROOF DRAIN
ROOF CURB
ELEVATED UNIT/EQUIPMENT
OBSOLETE HARDWARE
SLEEPER
SUPPORT LEGS
SHINGLED ROOF
SKYLIGHT
PIPING ON SUPPORTS
CRICKET/SADDLE
RIDGE/VALLEY LINE
RIDGE/VALLEY LINE (PITCHED)
SLOPE DIRECTION
PONDING
ROOF SECTION
PHOTO LOCATION
ACTION CODE



Roof Plan

20' 10' 0 20'

ORIGINAL SHEET SIZE: 18 x 24

2018 Reinspection/Overlay Plan

WASHOE COUNTY SCHOOL DISTRICT

186-JERRY WHITEHEAD ELEMENTARY SCHOOL
3570 WATERFALL DRIVE
SPARKS, NEVADA

REV. NO: DATE: BY:
REV. NO: DATE: BY:
REVIEWED BY: DRAFTING: T.H. SENIOR:

Benchmark INC
CEDAR RAPIDS, IA • WAUKESHA, WI
Phone: 319.393.9100
www.benchmark-inc.com

MANAGER:	D. HENKEL
DRAWN BY:	M. WILSON
DATE:	10/10/18
JOB NO.:	18WASO86R280A
DRAWING NO.:	
SHEET:	R-1

File: J:\Washoe County School District_WAS\Sparks-NV_-_18WASO186R280A\DWG\18WASO186R280AQ01.dwg Time: Jan 16, 2019 - 1:44pm

Appendix E
Certifications of Personnel and Laboratories

STATE OF NEVADA
DEPARTMENT OF BUSINESS AND INDUSTRY
DIVISION OF INDUSTRIAL RELATIONS
Occupational Safety and Health Administration
Asbestos Control Program

Certifies That Daniel Prado

Forensic Analytical Consulting Services

is Licensed As Asbestos Abatement Consultant

License No. IJPM-2057 Expiration Date 09/05/2024

Signature Of Licensee _____

Forensic Analytical Consulting Services, Inc.

This is to confirm that

Daniel Prado

Has attended the four-hour

AHERA Refresher Course for Asbestos Inspectors

And has completed the requisite training for

asbestos accreditation under TSCA Title II

September 05, 2023

Certificate Number: FACSBIR1523

Valid Until: 9/05/24

Cal/OSHA Approval Number: CA-025-06

FACS
Forensic Analytical
Consulting Services

Fred J. Vinciguerra, Chief Executive Officer
Forensic Analytical Consulting Services,Inc.
21228 Cabot Blvd, Hayward, CA 94545
(800) 677-1483

United States Environmental Protection Agency

This is to certify that



Daniel J Prado

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires May 01, 2026

LBP-R-I214705-2

Certification #

February 28, 2023

Issued On

Adrienne Priselac, Manager, Toxics Office

Land Division

STATE OF NEVADA
DEPARTMENT OF BUSINESS AND INDUSTRY
DIVISION OF INDUSTRIAL RELATIONS
Occupational Safety and Health Administration
Asbestos Control Program

Certifies That Zachary Ramos
Forensic Analytical Consulting Services
is Licensed As Asbestos Abatement Consultant

License No. IJM-2341 Expiration Date 09/05/2024

Signature Of Licensee

Forensic Analytical Consulting Services, Inc.

This is to confirm that

Zachary Ramos

Has attended the four-hour

AHERA Refresher Course for Asbestos Inspectors

And has completed the requisite training for

asbestos accreditation under TSCA Title II

September 05, 2023

Certificate Number: FACSBIR1520

Valid Until: 9/05/24

Cal/OSHA Approval Number: CA-025-06

FACS
Forensic Analytical
Consulting Services

Fred J. Vinciguerra, Chief Executive Officer
Forensic Analytical Consulting Services,Inc.
21228 Cabot Blvd, Hayward, CA 94545
(800) 677-1483

United States Environmental Protection Agency

This is to certify that



Zachary E Ramos

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Inspector

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires November 01, 2026

LBP-I-I255969-1

Certification #

October 18, 2023

Issued On

Adrienne Priselac, Manager, Toxics Office

Land Division

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101150-0

Schneider Laboratories Global, Inc.

Richmond, VA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2024-04-01 through 2025-03-31

Effective Dates

For the National Voluntary Laboratory Accreditation Program

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

Schneider Laboratories Global

2512 West Cary Street, Richmond, VA 23220-5117

Laboratory ID: LAP-100527

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs, LLC (AIHA LAP) accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: August 01, 2025
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: August 01, 2025
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: August 01, 2025
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:
☐	**BERYLLIUM FIELD/MOBILE**	Accreditation Expires:

Specific Field(s) of Testing/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision21: 05/15/2023

Date Issued: 08/01/2023

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101459-0

SGS Forensic Laboratories

Hayward, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique on ISO/IEC 17025).

2024-07-01 through 2025-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

SGS Forensic Laboratories

20535 S. Belshaw Ave Carson, CA 90746

Laboratory ID: LAP-101629

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: February 01, 2025
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: February 01, 2025
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: February 01, 2025
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision20: 06/07/2022

Date Issued: 01/31/2023

Right People

Right Perspective

Right Now

www.forensicanalytical.com

September 17, 2024

Mr. John Nolan, Director
Environmental, Safety, and Assessment
Washoe County School District
14101 Old Virginia Road
Reno, NV 89521

Dear Mr. Nolan:

This letter and the attached documents comprise the asbestos and lead survey information for roof areas at Washoe County School District's Whitehead Elementary School, located at 3570 Waterfall Drive in Sparks, Nevada. This survey was revised after sampling was conducted on Section A in anticipation of an upcoming HVAC upgrades project. Sampling for asbestos and lead was performed previously by Hazard Management Services, Inc. (HMS, Inc.) and the results have been incorporated as applicable into this report. Sampling of roof materials and painted components during this survey was performed by FACS personnel on August 28, 2024. This survey was completed in a manner which meets the requirements of the US EPA National Emissions Standard for Hazardous Air Pollutants and Nevada Division of Industrial Relations (OSHA) regulations.

The initial site inspection was performed by Chris Chipponeri and Sam Potter of HMS, Inc. on September 9, 2011. This inspection included Sections A, B, and two small sheds.

Sampling was conducted on Section A in anticipation of an upcoming HVAC upgrades project. This inspection was performed by Daniel Prado and Zachary Ramos of FACS on August 28, 2024.

Bulk asbestos samples collected during this survey were given a unique number, identified on a chain-of-custody, packaged, and sent via FedEx to SGS-Forensic Laboratories (SGS-FL) in Hayward, California for analysis. SGS-FL is accredited by the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program for the analysis of bulk asbestos fibers by polarized light microscopy.

Bulk lead paint chip samples were collected from paints that may be impacted by roof replacement or repair projects. Each bulk sample was given a unique number, identified on a chain-of-custody, packaged, and sent FedEx to SGS-Forensic Laboratories (SGS-FL) in Carson, California for analysis.

SGS-FL is accredited by the American Industrial Hygiene Association's Environmental Lead Laboratory Accreditation Program for the analysis of bulk lead paint chips by inductively coupled plasma.

Asbestos Results

All of the following materials sampled during this survey and during previous surveys were found to be none-detect by laboratory analysis and can be impacted by any personnel without special regard to asbestos-safe work practices.

Current Washoe County Air Quality Management Division (WCAQMD) policies would require additional sampling of materials on Section B and outbuildings at this site prior to any disturbance.

Lead Results

For the current rooftop components at this site, the following paint/coatings were found to contain lead by laboratory analysis by inductively coupled plasma:

- Rust Red Paint on Metal Enclosure (Section A)
- Tan Paint on Metal HVAC Unit (Sections A)
- White Paint on Metal Enclosure Interior (Section A)

Paints that contain a detectable concentration of lead shall only be impacted by personnel with OSHA Lead Action Level training using lead-safe work practices. No paint chips shall be allowed to fall onto unprotected surfaces and if this occurs, the area shall be HEPA-vacuumed clean immediately. All lead containing waste must be characterized prior to disposal to determine proper waste disposal requirements. Materials that are lead-containing may also be recycled, but the lead-content of such materials shall be disclosed to the recycling facility prior to submittal of materials for recycling.

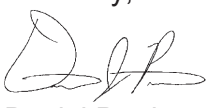
For the current rooftop components at this site, the following paints/coatings were found to be lead-free by laboratory analysis using flame atomic absorption spectroscopy:

- Brown Paint on Vent Flashing
- Red Paint on Metal Roof Cap
- Red Paint on Metal Flashing

Current WCSD policies would require additional sample analysis by ICP to confirm lead-content. Until the extra analysis is performed, these paints should continue to be handled as lead-containing to meet District requirements. Any other paints or coatings that may be impacted by a roof project that are not listed above should be handled as lead-containing until sampled and proven otherwise.

Thank you for the opportunity to perform this inspection. If you have any questions, please contact me at (775) 391-3524 or via e-mail at danny.prado@facs.com.

Sincerely,



Daniel Prado
Assistant Director, Reno Office
Nev. Lic. No. IJPM-2057
US EPA LBP-R-I214705-2

Reviewed by:



Chris Chipponeri
Director, Central Valley Offices
Nev. Lic. No. IJPM-1410
US EPA LBP-R-128230-3

FACS
Forensic Analytical Consulting Services

Bulk Material Analysis Request Form

Date: August 29, 2024
Collected by: Daniel Prado
Date Collected: August 28, 2024
Laboratory: SGS Forensic Laboratories

Contact Name: Daniel Prado
Bill: RN12
Type of Analysis: PLM w/ Dispersion Staining
Turnaround Time: 5 Day

Job ID: PJ83156
Job Site: WCSD – Whitehead ES – Section A
Special Instructions:
Send Results: danny.prado@facs.com

Sample ID	Results	Material Description and Location
PJ83156-01A		Asphalt Shingle Roofing – Red
		Section A – NW Pod
PJ83156-01B		Asphalt Shingle Roofing – Red
		Section A – SW Pod
PJ83156-01C		Asphalt Shingle Roofing – Red
		Section A – South Pod
PJ83156-01D		Asphalt Shingle Roofing – Red
		Section A – NE Pod
PJ83156-01E		Asphalt Shingle Roofing – Red
		Section A – North Pod
PJ83156-02A		Black Mastic
		Section A – NE Pod
PJ83156-02B		Black Mastic
		Section A – NE Pod
PJ83156-02C		Black Mastic
		Section A – South Pod
PJ83156-03A		Grey Sealant
		Section A – NE Pod
PJ83156-03B		Grey Sealant
		Section A – West Pod

Submitted By: _____ Date: 8/29/2024

Received By: _____ Date: _____

RECEIVED
AUG 30 2024
BY: FXb212 1030

FACS
Forensic Analytical Consulting Services

Bulk Material Analysis Request Form

Date: August 29, 2024
Collected by: Daniel Prado
Date Collected: August 28, 2024
Laboratory: SGS Forensic Laboratories

Contact Name: Daniel Prado
Bill: RN12
Type of Analysis: PLM w/ Dispersion Staining
Turnaround Time: 5 Day

Job ID: PJ83156
Job Site: WCSD – Whitehead ES – Section A
Special Instructions:
Send Results: danny.prado@facs.com

Sample ID	Results	Material Description and Location
PJ83156-03C		Grey Sealant
		Section A – NW Pod
PJ83156-04A		Grey/Black Sealant
		Section A – East Pod
PJ83156-04B		Grey/Black Sealant
		Section A – South Pod
PJ83156-04C		Grey/Black Sealant
		Section A – NE Pod
PJ83156-05A		White Sealant
		Section A – North Pod
PJ83156-05B		White Sealant
		Section A – NE Pod
PJ83156-05C		White Sealant
		Section A – SE Pod

Submitted By: _____ Date: 8/29/2024

Received By: _____ Date: _____

RECEIVED
AUG 30 2024
FX6217
BY: 10:30

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-0

Forensic Analytical Consulting Svcs
Daniel Prado
21228 Cabot Blvd.

Hayward, CA 94545

Client ID: FACS00
Report Number: B363318
Date Received: 08/30/24
Date Analyzed: 09/09/24
Date Printed: 09/09/24
First Reported: 09/09/24

Job ID/Site: PJ83156; Washoe County School District - Capital Projects & Planning 21228 Cabot Blvd., Hayward, CA 94545
Date(s) Collected: 08/28/2024

SGSFL Job ID: FACS00
Total Samples Submitted: 17
Total Samples Analyzed: 17

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-01A	12766612						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							
PJ83156-01B	12766613						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-01C	12766614						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							
PJ83156-01D	12766615						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:			**Asbestos (ND)**				
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							

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Report Number: B363318

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 09/09/24

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-01E	12766616						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Wood			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (55 %) Fibrous Glass (15 %) Synthetic (Trace)							
Comment: Bulk complex sample.							
PJ83156-02A	12766617						
Layer: Black Semi-Fibrous Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %)							
PJ83156-02B	12766618						
Layer: Black Semi-Fibrous Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %)							
PJ83156-02C	12766619						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
PJ83156-03A	12766620						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Clear Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
PJ83156-03B	12766621						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

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Report Number: B363318

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 09/09/24

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
PJ83156-03C	12766622						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-04A	12766623						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-04B	12766624						
Layer: Brown Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-04C	12766625						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-05A	12766626						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-05B	12766627						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
PJ83156-05C	12766628						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B363318

Client Name: Forensic Analytical Consulting Svcs **Date Printed:** 09/09/24

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Maria Cosper, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. SGSFL is not able to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.

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BULK MATERIAL Analysis Request Form for Hazard Management Services, Inc.

PHONE: 209-551-2000

P.O. Box 576848 Modesto, CA 95357-5657 FAX: 209-575-5657

Job I.D. M11214 CLIENT: Washoe County School District COLLECTED BY: Chris C

DATE COLLECTED: 9/9/11 DATE SUBMITTED: 9/12/11 LAB SUBMITTED TO: FALI

Special Instructions: Please e-mail to: cchipponeri@hazmange.com

ANALYSIS REQUESTED: PLM TURNAROUND TIME: 24 hr

PROJECT: Whitehead ES Roof Inspection

	SAMPLE #	Material Description/Location	Results
1	HMS-M11214-01A	Composition Shingle Roof Core-Section A	
2	HMS-M11214-02A	Single-Ply Roofing Core-Section B	
3	HMS-M11214-03A	Grey Sealant on HVAC Duct	
4	HMS-M11214-04A	Grey Sealant on Boiler Stack	
5	HMS-M11214-05A	White/Grey Mastic on U-Vent	
6	HMS-M11214-06A	Single-Ply Roofing Core-Section B	
7	HMS-M11214-07A	Composition Shingle Roofing Core-Section A	
8	HMS-M11214-08A	Composition Shingle Roofing Core-Section A	
9	HMS-M11214-09A	Composition Shingle Roofing Core-Shed 1	
10	HMS-M11214-10A	Composition Shingle Roofing Core-Shed 2	
11			

Delivered by: _____ Date: 9/11/11 Submitted Via:

Received by: _____ Date: 9-12-11 Drop Off X Fed Ex___ Courier___

@ 8am

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Hazard Mgmt Svcs-Modesto/Plst Hill
Mike Sharp
PO Box 576848

Modesto, CA 95357-6848

Client ID: 1146
Report Number: B153984
Date Received: 09/12/11
Date Analyzed: 09/13/11
Date Printed: 09/13/11
First Reported: 09/13/11

Job ID/Site: M11214 - Washoe County School District

Date(s) Collected: 09/09/2011

FALI Job ID: 1146
Total Samples Submitted: 10
Total Samples Analyzed: 10

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
HMS-M11214-01A	11166082						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							
HMS-M11214-02A	11166083						
Layer: Off-White Semi-Fibrous Material			**ND**				
Layer: White Semi-Fibrous Material			**ND**				
Layer: Grey Semi-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace) Fibrous Glass (25 %) Synthetic (5 %)							
HMS-M11214-03A	11166084						
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
HMS-M11214-04A	11166085						
Layer: Grey Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Client Name: Hazard Mgmt Svcs-Modesto/Plst Hill

Report Number: B153984
Date Printed: 09/13/11

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
HMS-M11214-05A	11166086						
Layer: Grey Mastic			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
HMS-M11214-06A	11166087						
Layer: Off-White Semi-Fibrous Material			**ND**				
Layer: White Semi-Fibrous Material			**ND**				
Layer: Grey Semi-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace) Fibrous Glass (25 %) Synthetic (5 %)							
HMS-M11214-07A	11166088						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (15 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							
HMS-M11214-08A	11166089						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							

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Client Name: Hazard Mgmt Svcs-Modesto/Plst Hill

Report Number: B153984
Date Printed: 09/13/11

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
HMS-M11214-09A	11166090						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							
HMS-M11214-10A	11166091						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (10 %) Fibrous Glass (40 %)							
Comment: Bulk complex sample.							

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Bulk Material Analysis Request Form

Date: 08-29-2024
Collected by: Zachary Ramos and Daniel Prado
Date Collected: 08-28-2024
Laboratory: SGS Forensics

Contact Name: Daniel Prado
Bill: RN12
Type of Analysis: ICP for Lead
Turnaround Time: 5 Day

Job ID: PJ83156
Job Site: Whitehead ES – HVAC Upgrades Survey
Special Instructions:
Send Results: Danny.prado@facs.com

Sample ID	Sample Size	Material Description and Location
PJ83156-Pb01A		Rust red paint on metal enclosure
		Roof A - SW pod
PJ83156-Pb01B		Rust red paint on metal enclosure
		Roof A - N pod
PJ83156-Pb01C		Rust red paint on metal enclosure
		Roof A - NE pod
PJ83156-Pb02A		Tan paint on metal unit
		Roof A - NE pod
PJ83156-Pb02B		Tan paint on metal unit
		Roof A - S pod
PJ83156-Pb02C		Tan paint on metal unit
		Roof A - NW pod
PJ83156-Pb03A		White paint on metal enclosure interior
		Roof A - E pod
PJ83156-Pb03B		White paint on metal enclosure interior
		Roof A - NE pod
PJ83156-Pb03C		White paint on metal enclosure interior
		Roof A - NW pod

Submitted By: Zachary Ramos
Date: 8-29-24
Received By: Gestle Lazaro Reyes
Date: 8/30/24 09:37 FE

Metals Analysis of Bulks - TTLC

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Forensic Analytical Consulting Svcs
Daniel Prado
21228 Cabot Blvd.

Hayward, CA 94545

Client ID: FACS00
Report Number: M262865
Date Received: 08/30/24
Date Analyzed: 09/09/24
Date Printed: 09/09/24
First Reported: 09/09/24

Job ID / Site: PJ83156; Washoe County School District - Capital Projects & Planning 21228 Cabot Blvd., Hayward, CA 94545
SGSFL Job ID: FACS00

Date(s) Collected: 08/28/24
Total Samples Submitted: 9
Total Samples Analyzed: 9

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
PJ83156-PB01A	LM274912	Pb	15	mg/kg	3	EPA 3050B/6010B
PJ83156-PB01B	LM274913	Pb	15	mg/kg	3	EPA 3050B/6010B
PJ83156-PB01C	LM274914	Pb	11	mg/kg	7	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB02A	LM274915	Pb	17	mg/kg	7	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB02B	LM274916	Pb	20	mg/kg	9	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB02C	LM274917	Pb	20	mg/kg	20	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					
PJ83156-PB03A	LM274918	Pb	11	mg/kg	6	EPA 3050B/6010B
PJ83156-PB03B	LM274919	Pb	9	mg/kg	5	EPA 3050B/6010B
PJ83156-PB03C	LM274920	Pb	20	mg/kg	20	EPA 3050B/6010B
Comment:	Sample submission below recommended weight.					

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.



Vincent To, Laboratory Supervisor, Carson Laboratory

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Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.

BULK MATERIAL Analysis Request Form for Hazard Management Services, Inc.

PHONE: 209-551-2000
P.O. Box 576848 Modesto, CA 95357-5657 FAX: 209-575-5657

Job I.D. M11214 CLIENT: Washoe County School District COLLECTED BY: Chris C

DATE COLLECTED: 9/9/11 DATE SUBMITTED: 9/12/11 LAB SUBMITTED TO: FALI

Special Instructions: Please e-mail to: cchipponeri@hazmangc.com
ANALYSIS REQUESTED: Flame AA TURNAROUND TIME: 24 hr

PROJECT: Whitehead ES Roof Inspection

	SAMPLE #	Material Description/Location	Results
1	HMS-M11214-01Pb	Red paint on metal penthouses-Section A	
2	HMS-M11214-02Pb	Red paint on metal skylight flashing-Section A	
3	HMS-M11214-03Pb	Brown paint on vent flashing-Section A	
4	HMS-M11214-04Pb	Red paint on metal roof cap-Section B	
5	HMS-M11214-05Pb	Red paint on metal flashing-Shed 1	
6	HMS-M11214-06Pb	Red paint on metal flashing-Shed 2	
7			
8			
9			
10			
11			

Delivered by: _____ Date: 9/11/11 Submitted Via:

Received by: _____ Date: 9-12-11 Drop Off X Fed Ex ___ Courier ___

8:00

Forensic Analytical Laboratories

Metals Analysis of Paints

Hazard Mgmt Svcs-Modesto/Plst Hill
Chris C
PO Box 576848

Modesto, CA 95357-6848

Client ID: 1146
Report Number: M123577
Date Received: 09/12/11
Date Analyzed: 09/13/11
Date Printed: 09/13/11
First Reported: 09/13/11

Job ID / Site: M11214 , Whitehead ES Roof Inspection . Washoe County School District
Date(s) Collected: 09/09/2011

FALI Job ID: 1146
Total Samples Submitted: 6
Total Samples Analyzed: 6

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
HMS-M11214-01PB	30414178	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
HMS-M11214-02PB	30414179	Pb	< 0.02	wt%	0.02	EPA 3050B/7420
Comment: Insufficient sample size for repeatable analysis.						
HMS-M11214-03PB	30414180	Pb	< 0.007	wt%	0.007	EPA 3050B/7420
HMS-M11214-04PB	30414181	Pb	< 0.02	wt%	0.02	EPA 3050B/7420
Comment: Insufficient sample size for repeatable analysis.						
HMS-M11214-05PB	30414182	Pb	< 0.02	wt%	0.02	EPA 3050B/7420
Comment: Insufficient sample size for repeatable analysis.						
HMS-M11214-06PB	30414183	Pb	< 0.007	wt%	0.007	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

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Roof Section	Size (Sq. Ft.)	Roof System	Roof Membrane	Year Installed	Manufacturer	Mfgr Warranty Expires	Mfgr Warranty Phone	Contractor	Contractor Warranty Expires	Contractor Warranty Phone	Estimated Replacement
A, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and A-9 (YR 2018 RI)	36,864	Steep Roofing	Shingles	2008	Malarkey Roofing Products	08/27/2043	(503) 240-7826	Kodiak Roofing	08/28/2010	(775) 562-3800	6-10 years
B (YR 2018 RI)	8,518	Single-ply	PVC	2008	Sika Sarnafil, Inc.	08/13/2018	(800) 451-2504	Kodiak Roofing	08/28/2010	(775) 562-3800	11+ years
C - Portable 730 (YR 2018 RI)	2,103	Steep Roofing	Asphalt shingle	2015	Unknown	-	-	Unknown	-	-	11+ years

DRAWING RECORD

REV. NO.	DESCRIPTION	DATE	BY
280A	2018 ROOF REINSPECTION PLAN	10/10/18	MW/DH

ACTION CODE LEGEND

2 FIELD MEMBRANE
- 2.60 REPLACE DAMAGED AND MISSING SHINGLE
- 2.64 RESET NAIL AND SEAL NAIL HEAD

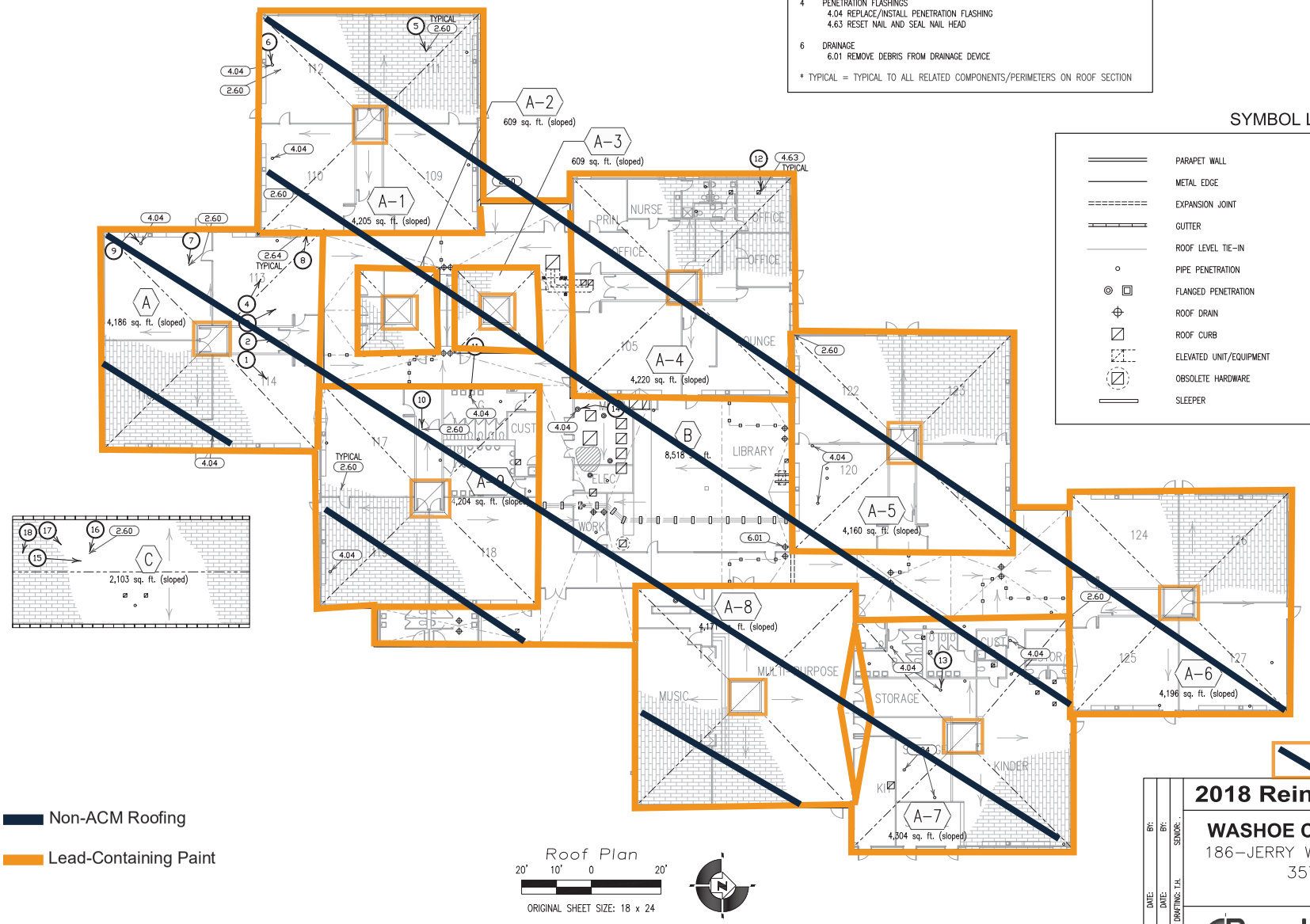
4 PENETRATION FLASHINGS
- 4.04 REPLACE/INSTALL PENETRATION FLASHING
- 4.63 RESET NAIL AND SEAL NAIL HEAD

6 DRAINAGE
- 6.01 REMOVE DEBRIS FROM DRAINAGE DEVICE

* TYPICAL = TYPICAL TO ALL RELATED COMPONENTS/PERIMETERS ON ROOF SECTION

SYMBOL LEGEND

PARAPET WALL
METAL EDGE
EXPANSION JOINT
GUTTER
ROOF LEVEL TIE-IN
PIPE PENETRATION
FLANGED PENETRATION
ROOF DRAIN
ROOF CURB
ELEVATED UNIT/EQUIPMENT
OBSOLETE HARDWARE
SLEEPER
SUPPORT LEGS
SHINGLED ROOF
SKYLIGHT
PIPING ON SUPPORTS
CRICKET/SADDLE
RIDGE/VALLEY LINE
RIDGE/VALLEY LINE (PITCHED)
SLOPE DIRECTION
PONDING
ROOF SECTION
PHOTO LOCATION
ACTION CODE



Non-ACM Roofing

Lead-Containing Paint

Roof Plan

20' 10' 0 20'

ORIGINAL SHEET SIZE: 18 x 24

2018 Reinspection/Overlay Plan

WASHOE COUNTY SCHOOL DISTRICT

186-JERRY WHITEHEAD ELEMENTARY SCHOOL
3570 WATERFALL DRIVE
SPARKS, NEVADA

REV. NO: DATE: BY:
REV. NO: DATE: BY:
REVIEWED BY: DRAFTING: T.H. SENIOR:

Benchmark INC
CEDAR RAPIDS, IA • WAUKESHA, WI
Phone: 319.393.9100
www.benchmark-inc.com

MANAGER:	D. HENKEL
DRAWN BY:	M. WILSON
DATE:	10/10/18
JOB NO.:	18WASO86R280A
DRAWING NO.:	
SHEET:	R-1

File: J:\Washoe County School District_WAS\Sparks-NV_-18WASO186R280A\DWG\18WASO186R280A00q1.dwg Time: Jan 16, 2019 - 1:44pm

Roof Section	Size (Sq. Ft.)	Roof System	Roof Membrane	Year Installed	Manufacturer	Mfgr Warranty Expires	Mfgr Warranty Phone	Contractor	Contractor Warranty Expires	Contractor Warranty Phone	Estimated Replacement
A, A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8 and A-9 (YR 2018 RI)	36,864	Steep Roofing	Shingles	2008	Malarkey Roofing Products	08/27/2043	(503) 240-7826	Kodiak Roofing	08/28/2010	(775) 562-3800	6-10 years
B (YR 2018 RI)	8,518	Single-ply	PVC	2008	Sika Sarnafil, Inc.	08/13/2018	(800) 451-2504	Kodiak Roofing	08/28/2010	(775) 562-3800	11+ years
C - Portable 730 (YR 2018 RI)	2,103	Steep Roofing	Asphalt shingle	2015	Unknown	-	-	Unknown	-	-	11+ years

DRAWING RECORD

REV. NO.	DESCRIPTION	DATE	BY
280A	2018 ROOF REINSPECTION PLAN	10/10/18	MW/DH

PJ83156-03A
PJ83156-04C
PJ83156-02A
PJ83516-02B
Pb01C
02Pb
PJ83156-01D
Pb03B
06A
03A
PJ83156-04A
07A
Pb02A
PJ83156-05B
Pb03A
01A
02A
05A
Pb01B
PJ83156-05C
PJ83156-01C
04Pb
PJ83156-01E
PJ83156-05A
Pb02B
PJ83156-02C
PJ83156-04B
01Pb
04A
10A
05Pb
09A
06Pb
PJ83156-01A
Pb03C
Pb02C
PJ83156-03C
PJ83156-03B
08A
Pb01A
03Pb
PJ83156-01B

ACTION CODE LEGEND

2 FIELD MEMBRANE
2.60 REPLACE DAMAGED AND MISSING SHINGLE
2.64 RESET NAIL AND SEAL NAIL HEAD

4 PENETRATION FLASHINGS
4.04 REPLACE/INSTALL PENETRATION FLASHING
4.63 RESET NAIL AND SEAL NAIL HEAD

6 DRAINAGE
6.01 REMOVE DEBRIS FROM DRAINAGE DEVICE

* TYPICAL = TYPICAL TO ALL RELATED COMPONENTS/PERIMETERS ON ROOF SECTION

SYMBOL LEGEND

PARAPET WALL
METAL EDGE
EXPANSION JOINT
GUTTER
ROOF LEVEL TIE-IN
PIPE PENETRATION
FLANGED PENETRATION
ROOF DRAIN
ROOF CURB
ELEVATED UNIT/EQUIPMENT
OBSOLETE HARDWARE
SLEEPER
SUPPORT LEGS
SHINGLED ROOF
SKYLIGHT
PIPING ON SUPPORTS
CRICKET/SADDLE
RIDGE/VALLEY LINE
RIDGE/VALLEY LINE (PITCHED)
SLOPE DIRECTION
PONDING
ROOF SECTION
PHOTO LOCATION
ACTION CODE

A-1 4,205 sq. ft. (sloped)
A-2 609 sq. ft. (sloped)
A-3 60 sq. ft. (sloped)
A-4 4,220 sq. ft. (sloped)
A-5 4,160 sq. ft. (sloped)
A-6 4,196 sq. ft. (sloped)
A-7 4,304 sq. ft. (sloped)
A-8 4,17 ft. (sloped)
A 4,186 sq. ft. (sloped)
A-9 1,204 sq. ft. (sloped)
B 8,518 sq. ft.
C 2,103 sq. ft. (sloped)

Non-ACM Roofing
Lead-Containing Paint

Roof Plan
20' 10' 0 20'
ORIGINAL SHEET SIZE: 18 x 24

2018 Reinspection/Overlay Plan

WASHOE COUNTY SCHOOL DISTRICT

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MANAGER:	D. HENKEL
DRAWN BY:	M. WILSON
DATE:	10/10/18
JOB NO.:	18WASO86R280A
DRAWING NO.:	
SHEET:	R-1

REV. NO: DATE: BY:
REV. NO: DATE: BY:
REVIEWED BY: DRAFTING: T.H. SENIOR:

File: J:\Washoe County School District_WAS\Sparks-NV_18WASO186R280A\DWG\18WASO186R280A00q1.dwg Time: Jan 16, 2019 - 1:44pm

ASBESTOS ABATEMENT TECHNICAL SPECIFICATIONS – EFFECTIVE 1/25/23

PART 1 – GENERAL REQUIREMENTS

1.1 LOCATION

This asbestos abatement is to take place at: Whitehead ES, HVAC Retro-fit Project, Issued 10/10/24

1.2 DESCRIPTION

The work shall include the furnishing of all labor, tools, and equipment, material, transportation, ALL waste disposal fees and services to include waste characterization sampling costs and the performance of all operations required to properly provide the work. The Contractor will be supervised by District AHERA certified personnel or District Hired Asbestos Consultants and the abatement work will be coordinated through the Regulated Systems and Assessment department. The work shall also include obtaining required permits and notifying regulating agencies as required by all applicable state, local and federal laws and regulations for the work to be performed. Notification fees and disposal manifest fees are to be paid by the Contractor. Contractors are reminded that non-friable asbestos projects may not require regulatory notification, but non-friable materials that have been made friable in the opinion of the regulatory agency require notification. Mastics removed with buffers require notification. It is the responsibility of the Contractor to determine if regulatory notification is required and any monetary citations that result from failure to notify or improperly done notifications will be fully the responsibility of the Contractor. Should the District be named in addition to the contractor, due to a Contractors failure or improper notification, the contractor shall be required to reimburse legal fees to defend the District, as well as the cost of any monetary citation that results. The work shall also include the cleanup and removal from the site of all debris resulting from the operations performed. Waste disposal of all materials removed from the site shall be performed in a manner consistent with these specifications and all applicable regulations and the Contractor is required to complete properly and pay for all waste characterization sampling costs. The Contractor shall be responsible for submitting the application for the waste disposal permit and the contractor will be responsible for the picking up and the payment of the fee for the permit. The Contractor will submit the waste application to the District prior to submittal to the Health Department for signature. It shall also be the Contractors responsibility to take all necessary safety precautions and to furnish security barricades, and/or any safety measures as may be required to properly separate the abatement areas from the public. All taxes/fees associated with the disposal of asbestos containing wastes, regulated or not, shall be the responsibility of the abatement contractor.

As the District may decide to pay a third party consultant to supervise projects, the District would have to pay the consultant additional money or pay overtime to district employees for weekend and overtime work. The work schedule of this project will be set by the Construction Department Project Manager. If the contractor must work additional time or hours not identified in the initial schedule, due to the contactors inability to man the job with enough workers, the District may require the contractor to reimburse the district for additional costs for consultants incurred by the District. **The Contractor will be required to staff this project with enough personnel to ensure completion within the required timeline.** The Contractor shall provide at all times sufficient and competent labor to carry on the work

properly and insure completion of each part in accordance with schedule and within the time agreed to. An employee of the Contractor or subcontractor, who is deemed incompetent, disorderly, or otherwise objectionable by the Owner, shall be removed promptly by the Contractor, and not re-employed on the work. Any employee of the Contractor that is observed that is not utilizing his personal protective equipment will be immediately removed from a project and not allowed on any other District projects. Should any disagreements result regarding the identification of the employee or his/her proper use of personal protective equipment, the determination of the District Regulated Systems Supervisor or District hired Consultant will be considered final and conclusive. The Contractors Asbestos Abatement Supervisors who allow employees to not utilize their personal protective equipment will be immediately removed from a project and not allowed on any other District projects. Contractors will be required to replace removed employees/Supervisors and no additional time will be allowed to complete the project.

When possible without the disturbance of asbestos-containing materials, it shall be the responsibility of the **OWNER** to remove and replace all loose and attached furniture, cabinets, bookcases, etc. before the project commences. The removal of these items, where removal impacts asbestos-containing materials, and re-hanging of doors that have to be removed because they impede removal will be the responsibility of the contractor.

The **OWNER** will be responsible for air sampling for the purpose of project clearance. The Contractor shall not include the cost associated with clearance sampling in his bid. The Contractor shall be responsible for all personal and area air monitoring required by regulation, the technical specifications or required by the Contractor's asbestos liability insurance carrier.

The **OWNER** shall be responsible for the cost associated with the initial air sample clearance requirements. If the initial sample analysis results do not pass for clearance, the Contractor will be responsible for the cost of all additional air sample analysis until clearance is achieved.
In the case that a project requires the isolation of toilet facilities it shall be the responsibility of the Contractor to provide alternative facilities as needed, if no alternative facilities are available on-site. If the Contractor utilizes District toilet facilities, the Contractor will be required to maintain the cleanliness of the designated District toilet facilities.

The contractor will be required to assign enough personnel and equipment to complete all projects scheduled for completion during each site's normal work hours. Costs to provide access to facilities after normal work hours, due to a Contractors inability to meet the schedule during normal hours will be passed on to the Contractor and deducted from a project's final payment.

There may be supplemental asbestos abatement specifications created by an outside asbestos consultant and provided to the Contractor to provide additional information. The Contractor must refer to all specifications provided in the bid package, and comply with all specification requirements. If there are any conflicts regarding asbestos abatement specification requirements, Contractors are required to comply with the most stringent requirement. Conflicts/disagreements regarding specification requirements will be settled based upon direction from the WCSD ES&A Department AHERA Project Designer certified staff.

1.3 EQUIPMENT

If requested the Contractor shall provide proof acceptable to the District that Contractors has disposal is enough equipment to support this project. Delays of up to 48 hours are to be anticipated for TEM Laboratory analysis result turnaround and abatement project schedule will reflect this delay. Additional equipment needs may result and the Contractor will be required to have enough equipment to proceed with work as schedule in spite of delays in awaiting final clearance sampling.

1.4 ASBESTOS LIABILITY INSURANCE REQUIREMENTS

The Contractor will be required to written proof by way of an insurance certificate of a minimum of Five Million Dollar ($5,000,000.) Occurrence Based Asbestos Environmental Risk Liability Insurance from a domestic Insurance company that has an A, A+ or A++ rating in Best's Insurance Guide, OAE. The Asbestos Abatement Contractor shall name the WCSD additionally insured on a primary and non-contributory basis for the contract term as well as any asbestos consultants the District may hire for job design and/or supervision and shall provide an insurance certificate specifically naming them as additionally insured, primary and stating that the policy cannot be cancelled in less than 30 days for any reason including non-payment.

1.5 LOCK OUT/TAG OUT PROGRAM

The Contractor will be required to comply with the Districts Lock Out/Tag out procedures. Requirements are available to contacting the WCSD safety officer.

1.6 WORK HOURS

The work schedule of this project will be set by the Construction Department Project Manager. Contractor must determine the work hours by reviewing the other contract documents and specifications or address these issues with the Project Manager so all Contractors are clear of the required abatement schedule prior to bidding on this project. These asbestos abatement specifications are not meant to set work hours or schedules rather the procedures to be used to abate asbestos containing materials within the district. The WCSD, ES&A department will be the entity ensuring the abatement specification are being properly being addressed by Contractors but the day to day scheduling and project specifics, not related to abatement procedures, will be administered by the Construction Department of WCSD.

SECTION 02110

ASBESTOS ABATEMENT: GENERAL

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. These specifications cover the removal of specific types of asbestos containing material for the Washoe County School District. Refer to the project drawing for exact abatement information and locations. The work may include the abatement of asbestos containing material (ACM) on floors. New flooring materials will be installed over abatement areas so mastic removal techniques employed by the abatement contractor are to be done so that installed flooring products are able to be warranted by the flooring manufactures. If the abatement contractor is being hired by a flooring contractor the abatement contractor must consult the flooring installer and ensure their employed removal techniques do not void any warranties for new installed products. It is quite possible that chemical mastic removers may not be able to be utilized to achieve this requirement. No power tools may be used to remove asbestos containing materials unless approved by the District and the applicable regulatory authority. All carpeting in the areas shall be removed and disposed of as ACM, as directed by the District. Work will require use of a negative air pressure system and depending upon personal air sampling may require Type "C" supplied air respirators. Transmission Electron Microscopy (TEM) or Phase Contrast Microscopy (PCM) will be used by the District to establish final airborne asbestos levels prior to acceptance of the work by the District; final levels of airborne asbestos fibers at the completion of the work shall be in accordance with AHERA Regulations (40 CFR Part 763).

B. Polished Concrete and Concrete Grinding: The district may be grinding and or polishing concrete in scheduled areas after a flooring asbestos abatement project has been completed. In cases that polished concrete will be a part of the scope, **or concrete grinding will be required after abatemen**t, Contractors will **not** be allowed to utilize solvent mastic removers or any other method that liquefies the matrix of the mastic which could contribute to the mastic entering into cracks, and pores of the concrete. The exception to this would be the use of a fully HEPA vacuum shrouded techniques, such as water jet or hydro blasting. The intent of this requirement is that all mastic will be removed and no liquefied mastics will remain at the conclusion of work. If grinding of the concrete is required, it will happen after the final asbestos air clearance has passed and the asbestos abatement is complete. The poly containment that has been built, during the asbestos abatement phase, might be very helpful and cost effective if it were left in place for the concrete grinding contractor to use. So once the final clearance and abatement contractor has removed all signage, asbestos contaminated materials and the negative pressure machines, the grinding contractor may want to make arrangements with the abatement contractor to leave the poly containment up. All arrangements regarding the logistics of this agreement are up to the contractors' responsibility to determine. Contractors performing concrete grinding will be required to comply with District specifications regarding silica exposure during the grinding phase.

C. INTENT

1. These specifications are intended to describe all material, labor, and equipment necessary for asbestos material removal.

2. The listing or mention of any method of installation, erection, fabrication, or workmanship shall not operate to make the Contractor an agent, but shall be for the sole purpose of setting a standard of quality for the finished work; an alternate method may be approved in writing by the District if it results in quality equal to that intended by these documents, without increasing the District's liability. Unless an alternate method is approved, all work shall be in strict accordance with all methods of installation, erection, fabrication, and ownership listed or mentioned herein. In addition, while the methods are provided, the Contractor will be required to ensure any method utilized complied with all applicable regulations.

3. It is the responsibility of the Contractor to verify the square footage of asbestos containing material that needs to be removed on this project. The Contractor shall remove all asbestos-containing material from the areas as directed.

1.02 DESCRIPTION OF WORK

A. Furnish all labor, licenses, notifications, payment of notification and waste manifest fees, permits, materials, services, insurance, associated taxes, and equipment to complete and dispose of all asbestos containing materials and asbestos-contaminated material as directed by the District. Base cove materials inhibit the removal process and trap contaminated materials, therefore all removable base cove materials must be removed as a apart of the abatement process of flooring materials.

B. CORRELATION OF DRAWINGS AND SPECIFICATIONS

1. In general, the specifications will describe the "quality" of the work. The specifications are cooperative and supplementary; however, each item of work is not necessarily mentioned in the specifications. All work necessary to complete the projects so described is to be included in this Contract.

2. In case of disagreement within the specifications, the better quality of the work shall be estimated and the matter drawn to the District's attention for decision and/or adjustment. Any work done by the Contractor without consulting with the District, when the same requires a decision, shall be done at the Contractor's risk.

3. Omissions or Errors. If any omissions or errors in technical specifications are noted, or instructions at variance with the obvious intent of the document, it is the responsibility of the Contractor to call them to the District's attention before performing the work.

C. INTERPRETATION OF "OR EQUAL"

1. The use of trade names, with a notation such as "or equal" in these specifications is to establish quality required; there is no attempt to limit competitive bidding, but, in like manner, the quality specified will be rigidly maintained.

2. The words "approved", "equal to", "as directed". etc., are interpreted and will be taken to mean "to the satisfaction of the District."

D. UTILITIES (each of the following apply to this project as stated, unless otherwise noted in the project documents.)

1. Water - Existing service is available for the Contractor's use.

2. Electrical Service

   a. Existing service is available for the Contractor's use.

   b. The Contractor shall be responsible for furnishing necessary light bulbs, temporary lighting, temporary power stations, GFI outlets and extension cords as may be essential to the execution of their respective branches of the work. In addition, for extensions of lines to sheds or to power tools and remote areas which cannot be reached with extension cords.

   c. The Contractor shall be responsible for replacement cost of transformers, panels, circuit breakers and any other item of electrical equipment and installation thereof which is destroyed or broken as a result of or during the course of the Contractor's abatement activity.

3. Utility charges for electric power and water service will be paid by the Owner.

E. GUARANTEE

1. The Contractor shall, in case of work performed by his Subcontractors and where guarantees are required, secure warranties from said Subcontractors and deliver copies of same to the District upon completion of the work and prior to final retention payment.

2. All portions of the work shall also be maintained in perfect condition during this period. Such written guarantees as may be requested shall be submitted in duplicate at the completion of the work. These will be supplementary to and not in any way canceling specific guarantees which apply to various portions of the work.

3. If, in the Contractor's opinion, any work that is called for in the specifications in such a manner as to make it impossible for him to produce and guarantee a first-class piece of work, he shall refer the same to the District in a timely manner before proceeding.

1.03 DEFINITIONS

A. GENERAL TERMINOLOGY FOR ASBESTOS ABATEMENT

1. Owner - Washoe County School District, hereinafter referred to as the Owner, or the District, or the authorized representative of the Owner, or the District's consultant.

2. Authorized Visitor - Any visitor to the site whose visit has been authorized by the District.

3. Asbestos - The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. Materials are considered to contain asbestos if any amount of asbestos is present.

4. ACM - Asbestos-containing material(s).

5. Visible Asbestos - Visible Asbestos Containing Material

6. Abatement - Procedure to control fiber release from asbestos-containing building materials. Includes encapsulation, enclosure and removal.

7. Removal - All herein specified procedures necessary to strip all ACM from the designated areas and to dispose of these materials at an acceptable site. **The preferred method of removal of flooring material mastic is by wet method utilizing a chemical mastic remover.**

8. Work Area - A room or location in which ACM is indicated to be removed by this Contract.

9. Containment Area - A work area or zone which is prepared with plastic sheeting, barriers, negative air, etc., for asbestos abatement work.

10. Enclosure - All herein specified procedures necessary to completely enclose all ACM behind airtight, impermeable, permanent barriers.

11. Encapsulation - All herein specified procedures necessary to treat ACM with an encapsulant to control the possible release of asbestos fibers into the ambient air.

12. Encapsulant (Sealant) - A liquid material which can be applied to ACM and which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). Any encapsulant installed must be compatible with any new products that will installed over the encapsulate such as flooring products.

13. Air Monitoring (Air Sampling) - The process of measuring the fiber content of a specific volume of air in a stated period of time.

14. Area Monitoring - Air monitoring of fiber concentrations within the asbestos control area and outside the asbestos control area which is representative of the ambient airborne concentration of fibers.

15. Personal Monitoring - Air monitoring of fiber concentrations within the breathing zone of an employee.

16. HEPA Filter - A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of particles greater than 0.3 micron in size.

17. Negative Air Pressure System - A local exhaust system capable of maintaining a minimum pressure differential of minus 0.03 inch of water gauge in work area relative to adjacent areas. Documentation of negative air pressure is mandatory.

18. Negative Air Machine (NAM, "HOG") - A self-contained local exhaust machine utilized in a negative air pressure system. This equipment must use HEPA filters when used in asbestos work areas to collect and retain asbestos fibers.

19. HEPA Filter Equipment - Vacuuming equipment, which uses HEPA filters capable of collecting and retaining asbestos fibers. Filters shall be of 99.97% efficiency for retaining fibers of 0.3 micron or larger in size.

20. Surfactant - A chemical wetting agent added to water to improve penetration.

21. Amended Water - water to which a surfactant has been added.

22. Removal Encapsulate - a penetrating encapsulate specifically designed for removal of asbestos-containing materials rather than for on site encapsulation.

23. Chemical Remover - A pre-mixed chemical-penetrating agent designed specifically for removal of asbestos-containing material.

24. Airlock - A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways.

25. Curtained Doorway - Device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms

26. Decontamination Facilities - A series of connected rooms, with doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment. The facility minimally consists of a clean room, a shower room, and an equipment room.

27. Clean Room - An uncontaminated area or room, which is part of the worker decontamination facility, with provisions for storage or workers' street clothes and clean or unused protective equipment.

28. Shower Room - A room between the clean room and the equipment room in the worker decontamination facility, with hot and cold running water, soap, shampoo, and suitably arranged for complete showering during decontamination.

29. Equipment Room - A contaminated area or room that is part of the worker decontamination facility, with provisions for storage of contaminated clothing and equipment.

30. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.

31. Water Filtration System - A local water-filtering system capable of trapping and retaining 99.9% of asbestos fibers greater than 5 micron in size.

32. Fixed Object - A unit of equipment or furniture in the work area which is not removed from the work area. To include chalk boards, bulletin boards, TV stands etc.

33. Movable Object - A unit of equipment or furniture in the work area, which can be feasibly removed from the work area without disassembly.

34. MSDS - Material Safety Data Sheet - OSHA Form 20 or equivalent form containing health hazard information about chemical products.

35. NESHAPS - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

36. NIOSH - National Institute for Occupational Safety and Health.

37. OSHA - Occupational Safety and Health Administration.

38. EPA - Environmental Protection Agency.

39. ASTM - American Society for Testing and Materials.

40. ULI - Underwriters Laboratories, Inc.

41. Chemical Mastic Remover - A non-flammable solvent manufactured especially for the removal of mastic materials. **The flash point of the mastic remover used on District projects must be no less than 140 degrees Fahrenheit**.

PART 2 - APPLICABLE STANDARDS AND GUIDELINES

2.01 REFERENCE DOCUMENTS AND RESOURCES

A. All work covered by these regulations shall be performed in accordance with all applicable federal, state, and local regulations, standards, and codes governing asbestos abatement, transportation, and disposal. The current issue of each document shall govern. Where conflict among requirements or with these specifications, the more stringent requirements shall apply. Requirement shall include but not be limited to:

B. Department of Transportation

- Title 49 CFR 172 – Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training requirements.
- Title 49 CFR 173 – General Requirements for Shipments and Packaging.

C. Environmental Protection Agency (EPA)

- Title 40 CFR, Part 763, Asbestos Containing Materials in Schools (AHERA)
- Title 40 CFR 61, Subparts A & M – National Emission Standard for Asbestos (Neshaps)
- Title 40 CFR, Part 763 – Revised Model Accreditation Plan

D. Federal Occupational Safety and Health Administration (OSHA)

- Title 29 CFR 1910.20 – Access to Employee Exposure and Medical Records
- Title 29 CFR 1910.38 – Emergency Procedures
- Title 29 CFR 1910.134 – Respiratory Protection
- Title 29 CFR 1926.20 – General Safety and Health Provisions
- Title 29 CFR 1926.21 – Safety Training and Education
- Title 29 CFR 1926.23 – First Aids
- Title 29 CFR 1926.24 – Fire Protection
- Title 29 CFR 1926.25 – Housekeeping
- Title 29 CFR 1926.28 – Personal Protective Equipment
- Title 29 CFR 1926.51(f) – Washing Facilities
- Title 29 CFR 1926.55 – Gases, Vapors, Fumes, Dusts, and Mists
- Title 29 CFR 1926.56 – Illumination
- Title 29 CFR 1926.57 – Ventilation
- Title 29 CFR 1926.59 – Hazard Communication Standard
- Title 29 CFR 1926.103 – Respiratory Protection
- Title 29 CFR 1926.300, 301, 302 – Hand and Power Tools
- Title 29 CFR 1926.451 – Scaffolding
- Title 29 CFR 1926.500, 502, 503 – Fall Protection
- Title 29 CFR 1926.1101 – Asbestos Standard for the Construction Industry

E. Nevada Division of Environmental Protection (NDEP)

- NAC 444.965 to 444.976 – Sanitation of Asbestos

F. Nevada Occupational Safety and Health Enforcement Section (OSHES)

- NAC 618.850 to 618.907 – Abatement of Asbestos, General Provisions
- NAC 618.910 to 618.948 – Abatement of Asbestos, Licensing and Accreditation to Perform Services
- NAC 618.950 to 618.962 – Abatement of Asbestos, Performance of Activities for Abatement
- NAC 618.970 to 618.986 – Abatement of Asbestos, Disciplinary Action

G. Washoe County District Health Department, Environmental Health Services Division. (WCHD)

- 030107A to 030.107C – District Board of Health Regulations Governing Air Quality Management (regarding asbestos)
- 030.184 to 030.185 - District Board of Health Regulations Governing Solid Waste Management

H. STATE AND LOCAL REQUIREMENTS

1. The Contractor shall comply with the State of Nevada, Division of Occupational Safety and Health Regulations for construction and handling of asbestos. All Contractor personnel will have the applicable Nevada OSHES card on their person at all times during the completion of the project. Personnel will be required to present the license to District personnel upon request. Personnel without their Nevada OSHES card, or with unreadable or mutilated cards, or expired cards will not be allowed to work on the project until a readable, unexpired card is produced.

2. The Contractor shall comply with the Federal Environmental Protection Regulations pertaining to handling and disposal of asbestos-containing materials as well as the State of Nevada and any local governmental agencies which have delegated responsibility for the administration and enforcement of NESHAPS and other federal regulations.

3. The Contractor shall comply with all requirements of the EPA approved landfill which is selected as the disposal site.

I. OTHER REQUIREMENTS

- ANSI - American National Standards Institute: ANSI Z9.2 Fundamentals Governing the Design and Operation of Local Exhaust Systems.

J. The Contractor shall comply with said regulations, requirements, and standards (noted in B through I) and require and be directly responsible for compliance therewith on the part of his agents, employees, and subcontractors; and shall directly receive and be responsible for all citations, assessments, fines or penalties which may be incurred by reason of his agents, employees, or subcontractors failing to so comply.

PART 3 - REQUIRED DOCUMENTATION

3.01 SUBMITTALS AND NOTICES

A. PRIOR TO COMMENCEMENT OF WORK, ALL THE FOLLOWING MUST BE SUBMITTED TO THE WCSD, ES&A DEPARTMENT

1. Notification in writing of proposed asbestos work, with copy to the WCSD, ES&A Department, the EPA Regional Office, OSHA or OSHA Regional Office, local air pollution agency, and local authority with responsibility for enforcement of occupational health and safety regulations and enforcement of NESHAPS regulations and with jurisdiction in the State in which this project is located, not fewer than ten (10) working days before work commences on this project. Courtesy notifications will be submitted on **all** projects regardless of the regulatory requirement.

2. Submit proof satisfactory to the WCSD, ES&A Department that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing materials, supplies and the like have been obtained.

3. Submit documentation to the WCSD, ES&A Department indicating that all employees have had medical examinations (See Section 02110, PART 3, 3.01, B, 6) and instruction on the hazards of asbestos exposure, use of protective clothing, on use of showers, on entry and exit from work areas, on work procedures and protective measures, and on all aspects of 29 CFR 1910.134 (See also Section 02130, PARTS 3 and 4).

4. Submit documentation to the WCSD, ES&A Department that fifty (50) percent of the work force (exclusive of job foremen, superintendents, etc.) have at least one year's experience in asbestos abatement work for any employee not already approved and verified.

5. Submit to the WCSD, ES&A Department documentation that all superintendents, and supervisors have been certified as supervisors for at least two (2) year's and possess two (2) years' experience supervising asbestos abatement projects in that capacity for any employee not already approved and verified.

6. Submit documentation that **all** of the work force members are licensed by the State of Nevada in the field of asbestos control. Personnel will be required to present the license to District personnel upon request. Personnel without their Nevada OSHES card, with unreadable or mutilated cards, or expired cards will not be allowed to work on the project until a readable unexpired card is produced.

7. Submit documentation that each negative air machine and HEPA vacuums have been "thermally DOP tested" by a "third party" testing agency within a 6 month period prior to the start of each project. The "third party" testing must be conducted by a testing agency with its own testing equipment and may have no relationship with the contractor. The District's decision regarding the issue of when a testing agency meets the "third party"

requirement will be regarded as final and conclusive. The Contractor will be required to submit DOP test result certification for each unit prior to its use. The DOP testing company will be required to strictly comply with the manufacture procedures and testing media. The District may require access to review the DOP testing conducted during the contract period**. Any negative air machine or vacuums that are to be exhausted outside of a negative pressure enclosure must be DOP tested on-site prior to the start of any project. In addition equipment inside a containment larger than 2000 square feet will require on-site DOP testing of all negative air machines and vacuums prior to the start of the project.** Contractor will be required to add this delay for DOP testing into the project schedule and supplement the workforce accordingly to maintain the required abatement schedule.

8. Submit documentation that each negative air recording device (manometer) has been calibrated within 12 months prior to the start of each project.

9. Various manufacturers' information, including MSDS's, for approval, prior to its use on any project. In addition to submitting a copy to the ES&A department, Contractors will also be required to provide to the site's administration office and the Site Coordinator (head custodian) one complete copy of all MSDS's for all chemicals used on site.

10. Proof of insurance coverage prior to the start of each project.

11. Submit documentation from the Contractors asbestos liability insurance company, information on all area and personal area monitoring requirements. A complete copy of the insurance policy including any riders must be provided.

12. Submit documentation to the District indicating that all employees have taken the required AHERA training for the type of work they will be performing. Legible copies of each employee's initial training class and copies of the most recent refresher must be submitted. All employees will be required to have in their possession when performing abatement work the original copies of the initial training and refresher training certificates. District inspectors will review certificates in the field. Personnel without their AHERA training certificates, with unreadable or mutilated certificates, or expired certificates will not be allowed to work on the project until a readable initial or unexpired refresher certificate is produced.

B. The following procedure is to be implemented in an effort to reduce the time and cost to submit worker/employee training certs, Nevada State license, and physical documentation, items #3, #6 and #12 listed above. The required compliance will reduce the time the Contractor must put forth submitting training/physical documents as well as reduce the time it takes to review and approve the documents submitted. Contractors **will not** submit duplicate documentation to the ES&A department or representatives in the field that the ES&A department already has on file. Contractor can request a complete list of documents the ES&A department has on-file by calling the ES&A department at 851-5675 and one will be provided.

1. **<u>At least two weeks prior to the start of the project</u>**, contractor shall provide all worker/employee training certs and physical documentation for employees not already in the WCSD training database, to the ES&A Department at 7495 South Virginia Street, Reno, Nevada. To do this electronic copies will be provided through e-mail to the ES&A department Administrative Secretary. Contact the ES&A department Administrative Secretary. At 851-5675 if you do not their e-mail address. The ES&A Department will review the submitted training documentation and pre-approve workers and supervisors so they can work on the assigned WCSD project.

2. New workers added to the project after the start of the project will be approved by the ES&A department within one 8 hour period of the standard Monday thru Friday normal work schedule. Certification submittal will be serviced by the ES&A Department on a first come, first served basis. Delays to review the documentation will be anticipated and taken into account on any project schedule developed.

3. Workers or technicians will not report to the job site until they have been added to the ES&A database and properly documented on the contractors training report which is provided to ES&A or lead supervisory consulting staff in the field. ny way that requires certification on that project.

4. Contractors should request and will be provided a copy of the most current WCSD Company Training Report for their company which will identify training and physical documentation on file with WCSD for each employee. This database should be kept current by perspective bidders by providing to the ES&A department any new documentation when it is received for their employee so no delays are encountered due to a contactor not keeping this companies documentation current. Do not wait till you get a bid to provide updated data for your employees otherwise delays can occur.

5. ES&A staff in the field or environmental lead consulting staff will not be allowed to let anyone work or show up to the job site of they are not up to date on their documentation as identified on the WCSD Company Training Report.

C. The Contractor shall submit to the WCSD, ES&A Department, upon request, any other information the District may require, including, but not limited to, the following:

1. Weekly work schedule.
2. Type and brands of materials for worker protection.
3. Method of application and materials to be used.
4. Medical examination results of all employees (OSHA 1910.1001), including chest roentgenogram, pulmonary function and forced expiratory volume at one second (Contractor is responsible for obtaining the appropriate medical releases).
5. Schedule for changing filters in negative air pressure system and water filtration system.
6. Copies of all OSHA Form 101 or equivalent accident/injury/incident reports.

D. The Contractor shall submit directly to the WCSD, ES&A Department, **not Capital Projects Construction personnel**, or the Districts Consultant, upon each jobs completion And prior to final invoice submittal, a complete original documents job package including the following, **this is in addition to any other contract required documentation or documentation requested by others like asbestos consultants:**

1. Asbestos Removal Certification Letter signed and dated by the Contractors representative with language certifying that all asbestos materials have been properly removed in accordance with all Federal, State and Local regulations.
2. Asbestos insurance certificates
3. Manometer documentation that records air pressure differential between work areas and external air).
3. Copies of all daily manpower, work logs, and containment sign in logs indicating area(s) and type of work performed.
4. An original copy of all certifications of disposal.
5. Copies of permits.
6. Copy of the submitted notifications or courtesy notifications
7. Personal air sampling logs and an original air sampling results of each personal air sample taken on the project. The submitted log and sample results must include all the required data listed under air monitoring, Section 02120, part 2 of the technical specifications on page 23 and 24. The submittal of all personal sampling data identified above is in addition to the submittal of daily sample logs.

E. It is the Districts intention that the Contractors are responsible for supplying to the WCSD ES&A Department all Contractor generated documents. WCSD District-hired asbestos abatement consultants will be required to supply the following documents as a minimum, to the WCSD ES&A Department, at the end of the project and prior to final billing. The cost for development and submittal of the following is to be included in the asbestos consulting cost estimates provided to WCSD. Any costs for asbestos consultants to gather and/or submit a duplications of Contractor items listed above is not to be added to the Consultant's cost estimate. The District will not pay for this service twice, as the document submission of Contractor documents will be included in a Contractor's bid.

1. Summary letter explaining what was done, with a certification statement that observed work was done in accordance with Contract Specifications.

2. Drawing identifying what was done with post abatement notes, with information as required to identify all abatement work done.

3. Consultant's Daily logs documenting what was done, notes and narratives of the daily progress of the Contractor, and the steps taken to enforce contract specifications. Important project milestones should be addressed, as well in these daily logs, and pictures are encouraged.

4. Clearance air sampling maps identifying the outline of the abatement containment, date that the samples were taken, times that pumps were turned on and off, and flow measurements for each set of clearance air samples.

5. Copy of each clearance air sample laboratory chain of custody forms.

6. A copy of each clearance air sample laboratory results.

7. Area air sampling maps identifying the location samples were taken, date that the samples were taken, times that pumps were turned on and off, and flow measurements for each set of area air samples.

8. Copy of each area air sample laboratory chain of custody forms.

9. A copy of each area air sample laboratory results.

10. Bulk sampling map(s) identifying the locations any bulk samples were taken (if applicable).

11. Copy of any bulk sample laboratory chain of custody forms (if applicable).

12. A copy of each bulk sample laboratory results (if applicable).

F. The Contractor will submit daily by fax or e-mail to the WCSD, ES&A Department a copy of a daily air monitoring log with the numbers of all air monitoring cassette taken that day and the location taken or activity conducted by the personnel wearing the sample. A copy of each projects sample logs will not be acceptable. The daily sampling data listed above must be combined from all projects and listed on one daily air-monitoring log.

G. The Contractor shall have his laboratory e-mail or fax within **48 hours** of the date the sample was taken final laboratory result documents for air monitoring to the WCSD, ES&A Department. No hand written result report will be allowed. The laboratory reports will reference the air monitoring cassette's factory assigned number and the personal air monitoring results must be properly applied to an 8 hour time weighted average. Failure to submit results within the required 72 hour period may result in the District temporarily stopping the applicable abatement projects until results are received. Continued failure may also result in the termination of this contract.

H. The contractor may only invoice for a percentage of the project as agreed upon by the WCSD Project Manager & Contractor at the completion of work. but prior to submitting the final complete job package to the WCSD, ES&A Department at the Contrator discretion. The remaining agreed upon % may not be invoiced, and will not be authorized for payment until a complete job package has been submitted to the WCSD, ES&A Department and the completed package has been reviewed for correctness and accepted and all restoration of damage has been completed.

I. The Contractor will submit **daily** by fax or e-mail to the WCSD, ES&A Department an activity log with the location that contractor conducted activities that day, with a complete listing of workers assigned to each project.

J. Upon submittal, job packages will be reviewed for completeness by the WCSD, ES&A Department. In the event that a job package must be returned more than once, due to omissions or corrections, the contractor shall deduct a $200.00 processing fee from the projects final invoice, one fee per each occurrence after the first that the WCSD ES&A Department, district consultant or WCSD project Manager must contact the contractor due to omissions or errors.

PART 4 - SPECIAL PROCEDURES

4.01 ACCEPTANCE CRITERIA

A. Before any building or section of any building can be occupied by any personnel without respiratory protection, the level of airborne fibers must be less than or equal to the AHERA clearance level.

B. After the final cleaning, projects will be cleared by laboratory analysis of 5 air monitoring cassettes taken by the Owner, or Owner representative, inside the containment using aggressive methods. The analysis of cassettes from projects under 160 square feet will be analyzed by Phase Contrast Microscopy (PCM), NIOSH 7400. Projects over 160 square feet will analyzed by Transmission Electron Microscopy (TEM). Acceptable clearance levels for PCM analysis is all samples must be less than or equal to .01 fibers/cc. The Acceptable clearance level for TEM analysis is the average of the 5 samples taken inside the containment must be equal to or less than 70 asbestos structures per square millimeter. Fiber levels outside of the containment **cannot** be deducted from samples inside the containment to meet clearance criteria. It is the Contractor's responsibility to filter make-up air if so deemed necessary. Failure to filter a containments make up air will not relieve the Contractor from reimbursing the District for additional clearance samples that exceed clearance levels and fibers from outside the containment are suspected.

C. In the event that the initial clearance samples do not meet with the above protocol for air sampling clearance, the Contractor shall bear all costs required to perform additional sampling.

D. The District or Districts hired asbestos consultant will only perform as many air clearances as time allows. All attempts will be made to accommodate all requested requests for air clearance but the Contractor will be required to anticipate this requirement. Any delays or equipment tie ups due to the Contractors requiring more clearance samples then time allows on any given District work day is solely the responsibility of the Contractors and no additional fees will be paid to the contractor by the District. The Contractor will be required to have enough equipment available to maintain the required schedule in spite of any delays due the contractor requiring more samples then time allows. Locations requiring clearance sampling must be scheduled with the District one (1) day in advance by mail or fax. The containment must be ready for clearance sampling by 12:00 PM or earlier the day the samples are scheduled to be taken or the samples will be taken the next day. Contractor will anticipate an up to a 48 hour delay in receiving from the District TEM laboratory results.

4.02 STOPPING THE WORK

A. If, at any time, the WCSD, ES&A Department decides that work practices are violating pertinent provisions of the Contract, endangering workers, innocent bystanders, or endangering District facilities, they will immediately notify the Contractor in writing that operations shall cease until corrective action is taken and the Contractor shall take such corrective action before proceeding with the work.

B. If, at any time, the negative air pressure system is not operating in compliance with Sections 02120, PART 3, 3.02 and 02140, PART 1, 1.01H, and/or units are non-operational, operations shall cease until corrective action is taken and the Contractor shall take such corrective action before proceeding with the work.

C. Delays caused by inappropriate work practices as noted in 4.02A or 4.02B (Section 02110, PART 4) and/or excessive airborne fiber concentrations (defined as concentrations in excess of 0.2 fibers/cc, TWA) shall be at the Contractor's expense. No later claims for extra compensation which result from action taken under 4.02A, 4.02B or 4.02C (Section 02110, PART 4), or other delays caused by the Contractor failure to comply this Contract specifications will be recognized by the District.

D. In case of disagreement between the District and the Contractor regarding the analysis of any air monitoring data, either personal or area, the results of the District will be regarded as final and conclusive.

4.03 SITE SECURITY

A. The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees, employees of subcontractors, District employees and representatives, State and local inspectors and any other designated individuals. The Contractor is responsible to ensure that the security of the building is not diminished and install all outside negative air machine exhaust ports in a secure manner. Failure to provide adequate security measures will leave the Contractor responsible to loss or damage of property if it is determined that access was gained through an inadequate security measure employed by the Contractor. A list of authorized personnel shall be established prior to job start and posted in the clean room of the worker decontamination facility and in the Contractor's office. The Contractor will not restrict access to District asbestos personnel to any asbestos containment at any time.

1. Contractor shall be notified by the District of any other authorized visitors prior to their entry to the job site.

B. Entry into the work area by unauthorized individuals shall be reported immediately to the District by the Contractor.

C. A log sheet shall be maintained in the clean-room area of the worker decontamination system or Contractor's office. Anyone who enters the work area must record name, affiliation, time in, and time out for each entry (See Section 02140, PART 1, 1.04G).

D. Should any keys that have been signed out to the Contractor become lost and cannot be found, the Contractor may be responsible for all cost associated with re-keying all locks at the site that the lost key opened.

4.04 EMERGENCY PLANNING

A. Emergency planning and procedures shall be developed by the Contractor prior to abatement initiation and agreed to by the Contractor and District.

B. Emergency procedures shall be in written form and prominently posted in the clean change area and equipment room of the worker decontamination area. All employees must read and sign these procedures to acknowledge receipt and understanding of work site layout, location of emergency exits and emergency procedures.

C. Emergencies may arise during the progress of work which may require special effort or require extra shifts of personnel to continue the work beyond the normal working hours. Be prepared in case of such emergency to do all necessary work promptly, at no additional cost to the District.

D. The Contractor shall file with District the names, addresses and telephone numbers of local personnel who can be contacted at any time in case of emergency. These persons must be fully authorized and equipped to correct unsafe conditions on short notice.

E. The Contractor shall provide the District with means to contact the Contractor or his representative, available 24 hours a day, in the case of emergencies while asbestos projects are in progress. Acceptable means would be a home or office phone plus a cell phone or beeper for when the Contractor is out of the home or office. Vehicle phone will not be acceptable. If the Contractor assigns this responsibility to one of his employees, the employee must have authorization and the ability to perform any emergency response requested.

4.05 PRE-CONSTRUCTION MEETING

A. The Contractor shall attend as specified a pre-construction job meeting at a time agreed upon by the Contractor and the District. Attending this meeting will be representatives of the District who will actually participate in the District's asbestos project monitoring program. The preconstruction meeting may be held via the telephone at the District's option. This meeting may be waived at the Districts discretion.

B. At this meeting or prior to starting work, the Contractor shall provide all submittals as required in Section 02110, PART 3. They shall be prepared to discuss the following information:

1. Preparation of work area.
2. Personal protective equipment including respiratory protection and protective clothing.
3. Employees who will participate in the project, including delineation of experience, training, and assigned responsibilities during the project.
4. Decontamination procedures for personnel, work area and equipment.
5. Abatement methods and procedures to be utilized.
6. Required air monitoring procedures.
7. Procedures for handling and disposing of waste materials.
8. Procedures for final decontamination and clean-up.
9. Detailed work and performance schedule.
10. Emergency procedures.

SECTION 02120

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 It should not be inferred that all materials, tools and equipment listed in Part 2 are required or that all required materials, tools and equipment necessary are listed herein.

PART 2 - MATERIALS

2.01 Deliver all materials in the original packages, containers or bundles bearing the name of the manufacturer, the brand name, and labeling as required by 29 CFR 1910.1200.

A. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.

2.02 Polyethylene sheeting of a **true** 4 mil and 6 mil thickness unless otherwise specified, clear in color and in sizes to minimize the frequency of joints. All Polyethylene sheeting will be **Fire retardant.**

2.03 Polyethylene bags, properly labeled, of a **true** 6 mil thickness, clear in color, for disposal of asbestos debris.

2.04 Tape - capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under dry and wet conditions, including use of amended water, chemical removers, or removal encapsulant.

2.05 Surfactant (wetting agent) - shall consist of 50% polyoxyethlene ester and 50% polyoxyethlene ether, or equivalent and shall be mixed with water to provide a concentration of 1.25 kg/cubic meter of water.

2.06 Chemical Remover - suitable to aid in removal of ACM such as EPA 55 or equivalent.

2.07 Removal Encapsulant - suitable to aid in removal of ACM such as Asbestite 1000, Serpiflex Shield #4, BWE 5000, or equivalent; the removal encapsulant shall act as its own solvent and be capable of binding and encapsulating individual asbestos fibers.

2.08 Impermeable containers (Drums) - suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. (The containers shall be labeled in accordance with OSHA Regulations 29 CFR 1910.1001).

2.09 Warning labels and signs - as required by Regulation.

2.10 Encapsulant - Penetrating type, such as Asbestite 2000, American Coatings' Cable Coating 22p, SK 13-1C, BWE 3000, or equivalent. The encapsulant should have a coverage of 80 square feet per gallon and shall be compatible with new applications of flooring mastic. The encapsulant **must** be **clear** in color.

2.11 Encapsulant - Bridging type, such as American Coating FNE High Temperature Sealant, Ocean 666, or equivalent. Bridging encapsulant shall have a coverage of 25 square feet per gallon. Any encapsulant installed must be compatible with any new products that will installed over the encapsulate such as flooring products.

2.12 Spray Poly - Spray applied water resistant film with minimum coverage of 16 mil thickness when wet, such as Isotek Spray Poly or equivalent.

2.13 Other Materials - provide all other materials as specified in drawings; also, other materials such as lumber, nails, and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the work area.

2.14 Chemical Mastic Remover - A non-flammable solvent manufactured especially for the removal of mastic materials such as Control Low Odor, Sentinel 747, or equivalent. The flash point shall be no less than 140 degrees Fahrenheit.

PART 3 - TOOLS AND EQUIPMENT

3.01 Provide suitable tools for asbestos removal. The minimum acceptable amount of equipment to support this contract is estimated at 4 recording manometers, 4 standard incline manometers, 4 shower and water filter units, and twenty four 1500 cfm negative air units. This is an estimate of the minimum equipment and additional equipment may be required to comply with Contract Specifications and Documents.

A. If the Contractor is unable to keep up with the requested work schedule due to the lack of required equipment or inoperable equipment, the District reserves the right to purchase or rent equipment which will then be supplied to the Contractor. The Contractor will then be responsible to reimburse the District for the cost associated with the rental or procurement. The District would only exercise this option in the event the Contractor fails to take reasonable steps on his own to repair his own equipment or rent or procure equipment necessary to keep up with the requested schedule.

B. Under no circumstance will contaminated tools or equipment, be placed inside of a District room outside of a containment. Contaminated tools and equipment will be sealed in impermeable plastic bags (minimum of six-mil think) and **immediately** transported into the containment from the transporting vehicle directly into a containment that has already had its critical barriers completed and is under negative pressure. This includes equipment or tools that is placed in bags or sealed in plastic.

3.02 Negative Air Pressure System - a negative pressure must be established in the work area by means of a local exhaust system. The equipment shall exhaust through a **three** or more stage HEPA filtration system to the outside of the work area. The equipment shall be in operation for 24 hours per day until decontamination and final clean-up of the work area is completed. A recording device shall be used to provide documentation of the pressure differential of 0.03 inches of water gauge. The system shall have the following additional characteristics:

A. Filtration equipment in compliance with ANSI Z9.2, Local Exhaust Ventilation.

B. Capable of maintaining a minimum pressure differential of minus 0.05 inch of water gauge in the work area relative to adjacent areas. The 0.05 inch of water gauge requirement must be maintained throughout the removal process including the waste load out and during the entrance and exit of the containment through the Decon. It is suggested that this is considered when calculating the negative air requirements of each containment.

C. Negative air pressure system units shall be employed in sufficient quantity to provide no less than **eight** (**8**) air changes per hour in the work area.

D. Negative pressure units **must** be exhausted to the outside of the building through a reinforced **Owner** approved opening. In the event a window or door to the outside is removed, the opening installed will be vandal proof and not reduce the security of the building. As a minimum, when a window or door is removed, the contractor must install a plug constructed of 1/2" plywood. The plug must be larger than the hole and secured inside the opening with two or more wood 2 x 4s installed crosswise and secured with 3/8" tamper proof bolts.

E. **Pre-fabricated** metal reinforced exhaust tube will be utilized to exhaust all negative air machines. The exhaust tubing utilized must be the same size throughout the exhaust run and the same size as the negative air machine exhaust port. Continuous runs of tubing without splices are required for runs less than twenty-five feet (25'). The Pre-fabricated exhaust tubes will be replaced at the first signs of wear. Contaminated, taped or damaged tubes will not be allowed to be used. The Districts decision regarding when an exhaust tube requires replacement will be regarded as final and conclusive.

F. At the discretion of the Owner and at no extra cost the contractor may be required to install an extension to the negative air exhaust tube where it exits a containment. The extension will be constructed of metal reinforced exhaust tubing. Typically the extension would extend from the plug to a point on the roof determined by the District inspector.

G. The negative air machine exhaust tubing will be routed as per the direction of the District inspector. The routing of the negative air machine exhaust tubing through rooms not included in the containment will not be allowed unless there are no exterior windows or doors present inside the containment area. In the case of inoperable windows, Contractors will be required to hire a window company or perform the work themselves to remove and properly re-install inoperable windows as required so the negative air machine exhaust tubing is routed through windows. Only the WCSD ES&A department AHERA Project Designer certified staff are allowed to sign off on any instance, where a negative air machine tube is routed through a room that is not a part of the asbestos abatement containment area, instead of using a window or other exterior openings. No exceptions and Contractors must bid accordingly.

3.03 Water Filtration System - Water used for showering in the decontamination area and any other asbestos-contaminated water must be filtered prior to disposal as waste water. The system shall contain at a minimum a three-stage filtering system with the following additional characteristic:

A. Capable of trapping and retaining 99.9% of asbestos fibers greater than 3 microns in size.

B. All water systems equipment to include showers and filter systems will comply with all (including the District's) applicable backflow/cross connection prevention requirements. The District will enforce all backflow/cross connection prevention requirements

3.04 Airless Pump - Encapsulant, if spray-applied, shall be applied with an airless pump in order to minimize fiber dispersion during the decontamination process. The tip shall have an orifice of .019 to .026 or as required by the manufacturer of the encapsulant selected for use.

3.05 Type "C" Supplied Air System - A continuous flow or pressure-demand, supplied air respirator, NIOSH/MSHA certified or other suitable air filtration system, as required by OSHA regulations for performance of work of this nature, is suggested for all workers. Type "C" system shall have visual and audible alarms to warn of carbon monoxide levels in excess of 20 ppm. Such system shall meet all criteria prescribed by OSHA for supplied air respirators. It also must be fully certified for hose length combinations up to 300 feet. Either half-mask or full facepiece units fitted with HEPA filter back-up units are acceptable.

3.06 Temporary electrical cords and outlets shall be of an approved type and connected to a source of power outside of the work area as directed by the District (see Section 02140, 1.01). All temp power cords must be plugged into a ground fault interrupter equipped power source.

SECTION 02130

COMPLIANCE REQUIREMENTS

PART l - PERSONAL PROTECTION

1.01 RESPIRATORY PROTECTION

A. Provide workers with clean and properly maintained respiratory equipment approved by NIOSH/MSHA as specified in Section 02120, PART 3, 3.05. The Contractor must present documentation of no less than five (5) similar projects with personal sampling results indicating that employee exposure levels were at “clean air levels” (0.01 f/cc) inside the respirator. Half-mask air-purifying respirators equipped with high-efficiency particulate air (HEPA) filters may be utilized with written permission of the Owner. Initially, temporary approval for the use of half-mask respirators will be granted after receipt of the proof requested above. Continued authorization will be considered based thereafter on personal monitoring samples taken on projects completed under this contract. If the Contractor consistently maintains personal monitors levels at or below “clean air levels” (0.01 f/cc inside the respirator) on a 8 hour time weighted average, continued use of half-mask respirators will be authorized. Should the personal monitoring or area monitoring levels show the contractor is unable to maintain levels at the “clean air levels” (0.01 f/cc), inside the respirator, the half-mask authorization will be rescinded. Area or personnel monitoring level above 1.0 fibers/cc TWA will require that personnel utilize type "C" respiratory protection. The Contractor will be responsible for providing sample results that have been applied over the 8 hour time weighted average. When utilized, the Contractor shall provide a sufficient quantity of filters during the work day. The clean respirator filters shall be stored at the job site in the change room and shall be totally protected from exposure to asbestos prior to their use.site in the change room and shall be totally protected from exposure to asbestos prior to their use.

1. Single-use or disposable respirators will not be permitted at the job site.

2. Contractor shall also monitor and provide documentation indicating that the workers are properly protected against over exposure to any of the chemicals contained in the chemical mastic remover(s).

3. Additional air filter protection will be required when chemical solvents are used.

1.02 PROTECTIVE CLOTHING

A. Provide workers with sufficient sets of protective full-body clothing. Such clothing shall consist of full-body coveralls and headgear. Provide eye protection and hard hats as required by applicable safety regulations. Non-disposable type protective clothing and footwear shall be left

in the Contaminated Equipment Room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste, or shall be thoroughly cleaned of all asbestos or asbestos-containing material. Disposable type protective clothing, headgear, and footwear may be used and shall be disposed of as asbestos waste. Bare feet will not be permitted.

1.03 WORKER PROTECTION PROCEDURES

A. Each worker shall, upon entering the job site: Remove street clothes in the clean change room, put on a respirator and clean protective clothing before entering the equipment room or work area, except that workers intending to rewear contaminated protective clothing stored in the equipment room shall enter equipment room wearing respirators.

B. Each worker shall, each time he leaves the work area: Remove gross contamination from clothing before leaving the work area; proceed to the equipment room and remove all clothing except respirators; still wearing the respirator, proceed to the showers; clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves, remove filters (where required) and place them in the container provided for the purpose; and wash and rinse the inside of the respirator.

C. Following showering, each worker shall proceed directly to the clean change room and dress in clean clothes at the end of each day's work, or before eating, smoking or drinking. Before re-entering the work area from the clean change room, each worker and authorized visitor shall put on a clean respirator with filters (where required) and shall dress in clean protective clothing, except that workers intending to rewear contaminated protective clothing stored in the equipment room shall enter the equipment room wearing respirators.

D. Contaminated work footwear shall be stored in the equipment room when not in use in the work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from equipment and access area. Store contaminated protective clothing in the equipment room for reuse or place in receptacles for disposal with other asbestos contaminated materials.

E. Workers shall not eat, drink, smoke or chew gum or tobacco, or utilize sanitary (toilet) facilities at the worksite except in established locations outside the work and containment areas, and enclosures.

F. Workers shall be fully protected with respirators and protective clothing immediately prior to the first disturbances of asbestos-containing or contaminated materials and until final clean-up is completed. This includes removal of fixtures, ceilings, or anything else which may disturb the ACM.

PART 2 - AIR MONITORING

2.01 Throughout the removal and subsequent cleaning operations AMBIENT (AREA) MONITORING may be conducted by the District to ensure that the Contractor is complying with all regulations and is conducting the work in a manner which minimizes airborne asbestos levels as well as minimizes the contamination of the District's facilities.

A. The Contractor is responsible to complete all regulatory required area monitoring and all area monitoring that is required by the Contractors liability insurance company.

2.02 Throughout the removal and subsequent cleaning operations, PERSONAL AIR MONITORING shall be conducted by the Contractor. Such samples shall be taken in order to establish an 8-hour TWA (for example, a minimum time of 480 minutes at 2.0 lpm) and exposure for each type of employee operation. Analytical results of personal air samples shall be sent to the Districts ES&A Department and provided to the Districts asbestos consultant on a 72 hour turn-around basis. Electronic PDF final reports shall be e-mailed directly to the District ES&A department directly from the Contractor's laboratory. Personal monitoring will be conducted on 50% of the workers. The workers shall wear personal monitoring devices, and all sampling will be conducted in each workers breathing zone only. Asbestos Consultants hired by WCSD, and supervising asbestos abatement projects, are required to strictly enforce these Personal Air Monitoring requirements, so Contractors must plan accordingly. Failure for the Contractor to provide air sampling results within 72 hours requires that the District's consultant supervising the project must stop the job. No exceptions. To that end, District Consultants must monitor the situation and provide the Contractor a written 24 hours notification, after 48 hours that results have not been received. After these 24 hours have transpired, the Consultant must stop the job awaiting submittal of required sampling results. No exceptions.

A. For each set of air samples submitted to a laboratory by the Contractor for analysis, the Contractor shall submit a blank cassette for analysis (minimum of 10 percent). Each blank cassette shall be submitted as a part of the Contractor's quality control program.

B. Any PCM air sample submitted by the Contractor for analysis shall be to an independent laboratory currently enrolled in the AIHA/NIOSH proficiency Analytical Testing (PAT) program.

C. The Contractor shall use factory pre-numbered air monitoring cassettes and note each cassette's numbers on the daily log or a separate monitoring cassette log. The number on each cassette shall be recorded **PRIOR** to use. Each cassette's number will also be listed on the laboratory analysis request form and also be referenced on the Laboratory sample analysis report. A copy of the daily log or separate monitoring cassette log will be e-mailed to the ES&A department **and** the District's asbestos consultant **daily** for all projects in progress. Asbestos Consultants hired by WCSD and supervising asbestos abatement projects are required to strictly enforce these requirements so they must monitor and document this process as a part of the Consultants project monitoring process.

D. Daily project personal air sample logs must be kept and submitted. As a minimum the sample log must include, date sample taken, air flow measurements taken at the start and finish of the sampling duration, time started and stopped, the factory assigned cassette number, employee sampled, and the activity of the employee. Legible sample logs will be submitted in the completed job package along with an original laboratory analysis report. Consultants hired by WCSD and supervising asbestos abatement projects are required to strictly enforce these requirements so they must monitor and document this process as a part of the Consultants project monitoring process.

E. A credit of $25.00 per sample will be deducted from the Contractors final invoice for each documented case, that a required sample per contract specifications (50% of the workforce is NOT monitored) was not taken or submitted for analysis. In addition, this credit will also apply to samples that were not taken properly or the data required by contract specifications is not provided. Consultants hired by WCSD and supervising asbestos abatement projects are required to strictly enforce these requirements so they must monitor and document this process as a part of the Consultants project monitoring process.

PART 3 - SUPPORT ACTIVITIES AND PERSONNEL

3.01 TRAINING

A. Training by a EPA accredited training provider shall be provided by the Contractor to **all** employees or agents or subcontractors who may be required to disturb asbestos-containing or asbestos-contaminated materials for abatement and auxiliary purposes and to all Contractor supervisory personnel who may be involved in planning, execution, or inspection of abatement projects. **No on-line training certificates for Lead or Asbestos training will be accepted.**

B. Training shall provide, at a minimum, information on the following topics:

1. The health hazards of asbestos including the nature of various asbestos related diseases, routes or exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency periods for disease and health basis for standards.

2. The physical characteristics of asbestos including fiber size, aerodynamic properties, physical appearance and uses.

3. Employee personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the facepiece-to-face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures,

variations between laboratory and field fit factors, factors that affect respirator fit (e.g., facial hair), selection and use of disposable clothing, non-skid shoes, gloves, eye protection, and hard hats.

4. Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring, and employee access to records.

5. Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples, and current standards with recommended changes.

6. Work practices for asbestos abatement including purpose, proper construction and maintenance of plastic barriers, job set-up of airlocks, worker decontamination systems and waste transfer airlocks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste cleanup, and storage and disposal procedures.

7. Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, and chewing in the work area.

8. Special safety hazards that may be encountered including electrical hazards, air contaminants (CO, wetting agents, encapsulant, materials from Owner's operation), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress, and noise.

9. Workshops affording both supervisory personnel and abatement workers the opportunity to see (and experience) the construction of containment barriers and decontamination facilities.

C. Training is to have occurred within 12 months prior to the initiation of abatement activities.

D. Contractor must document training by providing date(s) of training, training entity, course outline, and names and qualifications of trainers.

E. Submit documentation to the District indicating that all employees have taken the required AHERA training for the type of work they will be performing per Section 02110, Part 3, 3.01, B, of these specifications.

F. An employee of the Contractor or subcontractor who is deemed incompetent, disorderly, or otherwise objectionable by the Owner, shall be removed promptly by the Contractor, and not re-employed on the work. Any employee of the Contractor that is observed that is not utilizing his personal protective equipment will be immediately removed from a project and not allowed on any other District projects. Should any disagreements result regarding the identification of the employee or his/her proper use of personal protective equipment, the determination of the District AHERA Program Supervisor/ Technicians or District hired Consultant will be considered final and

conclusive. The Contractors Asbestos Abatement Supervisors who allow employees to not utilize their personal protective equipment will be immediately removed from a project and not allowed on any other District projects. Contractors will be required to replace removed employees/Supervisors and no additional time will be allowed to complete the project.

PART 4 - MEDICAL MONITORING

A. Medical monitoring must be provided by the Contractor to any employee or agent that may be exposed to asbestos in excess of background levels during any phase of the abatement project. The purposes of a medical monitoring program, in addition to meeting the requirements of the law, are to document the state of health of workers for workers' compensation and to determine work relatedness of disease as well as to ensure fitness for duty, particularly ability to wear a respirator. Smokers should be made aware of the synergistic effects of cigarette smoking and asbestos exposure. The medical monitoring program provides the appropriate setting to share this information. Employers should also be aware of the potential cost of this additional risk. Medical monitoring shall include at a minimum the requirements of OSHA 29 CFR 1910.1001 (1).

1. A work/medical history to elicit symptomatology of respiratory disease (see CFR 1910.1001), Appendix D, Medical Questionnaires).

2. A chest X-ray (posterior-anterior, 14 x 17 inches) taken by a certified radiology technician and evaluated by a certified B-reader.

3. A pulmonary function test, including forced vital capacity (FVC) and forced expiratory volume at one second (FEV.), and FEV/FVC ratio (administered by a NIOSH or A.T.S. Certified Pulmonary Technician and interpreted and compared to standardized normals by a Board Certified Occupational Physician or Pulmonary Specialist).

4. Employees shall be given the opportunity to be evaluated by a physician to determine their capability to work safely while breathing through the added resistance of a respirator. (Examining physicians shall be aware of the nature of respiratory protective devices and their contributions to breathing resistance. They shall also be informed of the specific types of respirators the employees shall be required to wear and the work they will be required to perform, as well as special workplace conditions such as high temperatures, high humidity, and chemical contaminants to which they may be exposed. Evaluation of groups of workers should take into consideration epidemiologic principals as suggested by the American Thoracic Society in their statement on the work relatedness of disease adopted in 1982).

SECTION 02140

EXECUTION

PART 1 - PREPARATION

1.01 WORK AREA;

A. The following procedures are to be utilized to establish a work area and containments for all projects except mini work areas and mini-containments;

1. Shut down electrical power as necessary. When and where required, provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements and provide safety lighting and ground fault interrupter circuits as power source for electrical equipment.

2. Shut down and isolate heating, cooling, ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. During the work, vents or openings within the work area shall be sealed with tape and at least 2 layers of 6 mil poly sheeting.

3. As directed by the District, pre-clean fixed objects within the proposed work areas using HEPA filtered vacuum equipment and wet cleaning methods, and enclose all fixed objects with a minimum of clear 6 mil plastic sheeting sealed with tape. This is in addition to the splash protection layer specified in item F below. All edges of the 6 mil will sealed with duct tape.

4. As directed by the District, pre-clean the proposed work areas using HEPA-filtered vacuum equipment and wet cleaning methods. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters shall not be used. Failure to pre-clean may increase the nuisance fiber level inside the containment and thereby raise personal monitoring results.

5. Seal off all openings with critical barriers, including, but not limited to, windows, corridors, doorways, skylights, duct, grille, or diffuser openings and any other penetrations of the work areas, with clear 6 mil plastic sheeting sealed with tape. Doorways, windows and corridors which will not be used for passage during work must be sealed with two layers of 6 mil plastic barriers. Doors and windows can be taped around the edges and then covered with one layer of clear 6 mil plastic to achieve the two layer requirement. Any opening that requires support such as hallways or large opening or other large criticals must be supported with 2x4 studs, 24 inches on center

6. All doors will be left in place unless approved by the ES&A Director. Doors are much more secure than plastic critical which is why these will not allowed to be removed. If there is tile/mastic under the door in the door opening the following is the only procedure that will be allowed. The contractor shall create the entire containment except for sealing the doors that have tile under them. The containment and negative air will be in place and running and the containment, other than the doors will have been inspected and

approved. Once this has happened, the contractor shall have a worker don proper personal protective equipment (PPE) and then do a spot abatement in the area under the door using manual methods. The worker shall complete spot abatement under the door and the door will be secured and sealed per #5 above. No abatement shall take place inside the containment, other than doorway spot abatement. The number of doorways that can be spot abated at one time will be no more than two at a time.

7. If the Contractor is removing asbestos containing materials, and the flooring material within the containment is not identified for abatement, cover floor surfaces with at least 2 layers of 6 ml poly. Use a minimum of two layers of clear 6 mil poly. Cover the floor **first** so that the 2 layers of plastic that extends at least 12 inches up on the walls. Depending on the material of the roof and its practicality of being wet wiped the Owner may require that one clear layer of 4 or 6 mil plastic layer be installed for a ceiling.

8. Cover wall surfaces with plastic sheeting sealed with tape. Use a minimum of one (1) clear layer of 4 mil plastic on walls. Cover walls so that the plastic extends eight (8) feet above the area of work. Seams should overlap a minimum of six (6) inches.

9. Build airlocks at entrances to and exits from the work area. Airlocks should be built in a manner which allows for in-flow air. The installation of air locks which restrict the air flow of make-up air through the Decon will not be permitted. Additional make-up air, if required to achieve eight (8) air changes, shall be admitted through specially constructed vents which prevent contaminated air from leaving the work area.

10. Contractor may be required to install one clear layer of 4 or 6 mil plastic layer for a ceiling in the containment depending upon the ceilings construction, asbestos design considerations, and its air permeability and the ability to maintain negative pressure inside the containment.

11. Establish negative air pressure system which produces no less than eight (8) air changes per hour in the work area and maintains a pressure differential of 0.05 inch water gauge between the inside and outside of the work area. The location and identification of each individual negative air unit shall be provided to the District for each work area. The District, as certified Project managers reserves the right to direct the contractor to relocate the negative air machines. Identification (for example, labels) shall be clearly visible in the work area and at the unit's exhaust location.

12. The Contractor shall provide two manometers, located as directed by the Owner. The first manometer shall be a continuous printout type with an adjustable set-point audible alarm. The alarm may not be deactivated. The second shall be a standard inclined manometer, Dwyer Model 250.5 AF or approved equal.

13. As directed by the District, remove and clean ceiling or wall mounted objects, such as lights and other items not previously sealed off, that interferes with asbestos abatement. Use localized water spraying or HEPA filtered vacuum equipment during fixture removal to reduce the fiber dispersal.

14. Maintain emergency and fire exits from the work areas, or establish adequately marked alternative exits satisfactory to the District. The contractor will have on site before the start of the project a fire extinguisher and first aid kit.

15. The Contractor shall place a job board with all MSDS, emergency numbers (24 Hour), safety procedures, air monitoring results, etc., at an accessible location to employees and visitors. The job board may be placed in the clean room overnight if the entrance to a containment is outside and the board's security is in question.

16. Contractor shall provide a clear 18" x 18" plexi-glass view windows at locations designated by the Owner. Contractor will add or move viewing windows at any time throughout the project at the Owners request. View windows will never be covered once installed.

17. Use smoke methods to test effectiveness of barriers and the negative pressure system when directed by the District.

B. The following procedures shall be utilized to establish a work area and mini-containment for small scale/short duration projects. The Owner shall determine if a mini-containment is more practical or cost affective then the containment of the entire room space;

1. Prior to the construction of the mini-containment enclosure, the Contractor will consult with the Owner and receive Owner approval of the containments proposed design prior to the start of a mini-containment enclosure.

2. Contractor shall construct a 2 layer, clear 6 mil poly enclosure with walls, a roof and a floor. The containment will be supported by means of wooden studs, PVC pipe, or other rigid materials. It will be sufficiently supported to ensure that negative pressure will not damage the containment. It will be large enough to ensure the material can be removed without puncturing the containment.

3. Negative pressure inside the mini-containment will be provided by a small adjustable flow negative air machine. All mini-containments will require negative pressure and a HEPA vacuum cleaner will not be allowed to provide negative pressure except in very small mini-containments and only with prior written approval of the Owner.

4. A two cell decontamination enclosure shall be installed to provide access to the containment and serve as a decontamination enclosure. Air-locks shall be installed at the entrance to the decontamination cell and the abatement containment. Minimum size of the decontamination enclosure shall be six feet high by 5 feet wide.

5. Waste load-out and double bagging will be accomplished in the decontamination enclosure.

6. All other provisions of these contract documents and specifications apply to mini-containment enclosures except for the modification to the work area, decontamination enclosure and waste load-out addressed in 1 thru 4 above.

C. The following procedures shall be utilized to establish a work area and perform abatement for windows and window sealant abatement. The following window procedure will be utilized to remove the window frame with possible asbestos containing putty, and asbestos containing window sealant (Caulking) from WCSD window openings.

1. From the inside of the school, inside of each classroom install Plywood ½" over the window opening. Install 2 layers of 6-mil polyethylene plastic (poly) on the exterior surface of the plywood, to assist with clean up of the plywood surface prior to installation of the plywood. After the plywood is installed, install 2 layers of 6 mil poly over the interior surface extending out past the edge of the plywood, and attach with tape in an adequate fashion to completely seal off the exterior window opening from the inside of the building. The removal cannot proceed until an airtight poly seal has been created between the inside and the outside of the window opening. This contractor will not be able to proceed with any removal until District's ES&A personnel or District's asbestos consultant approves the prep of each window. This will be documented in the contractor's daily log and initialed by the District's ES&A personnel or the District's asbestos consultant.

2. Washoe County Health Department personnel can be expected to visit the abatement site. The contractor will be required to cooperate and comply with all WCHD requests.

3. Isolate the HVAC for the entire wing or area being abated, prior to the start of abatement.

4. It may be necessary to isolate the wings adjacent to the building being abated, based upon the discretion of the District's ES&A personnel or assigned asbestos consultant.

5. Install 6-mil poly drop that extends out at least 20'out and adjacent from each window opening. If any window debris leaves the poly drop area, the contractor will be required to HEPA vacuum the ground as directed by the District's ES&A personnel or the District's asbestos consultant.

6. Place safety tape to isolate the area of the broken window from the public. At least 50 ' has to be isolated. Contractor will need to ensure that only abatement workers or the District's ES&A personnel or the District's asbestos consultant enter this area during abatement. No personnel or school staff will be allowed to work on the same side of the school wing when abatement activates are taking place. If a wing is directly across from the abatement activity that wings classrooms on the side of the abatement cannot be occupied.

7. As needed, use a glasscutter to score the inside of window glass to ease with glass removal. **A power tool cannot be used** for the removal of the window frame. Hand tool may be utilized.

8. As needed, remove glass by tapping on scored part of glass breaking it out, remove all glass present except the pieces behind putty. This makes it easier and safer to remove the frame without the glass being in the way.

9. Damage to and disturbance to the putty and sealant should be limited to the extent possible, and removed as intact as possible.

10. Pick up and dispose of the glass, asbestos debris and frame, in contractor's vehicle or dumpster for transport for proper asbestos disposal at a remote site. Do not dispose of debris in the District dumpster.

11. From the outside, clean up the internal area of the window frame, ledge and window jamb up to the poly window opening seal of any debris. The block opening will need to scraped, so that no sealant material is left behind before the window frame will pass a visual clearance, conducted by the District's ES&A personnel or the District's asbestos consultant. HEPA vacuum all areas of abatement surfaces, including the inside of the window opening prior to requesting a visual clearance.

12. When the window frame has been completely removed and the removal passes a visual clearance conducted by the District's ES&A personnel or District's asbestos consultant, carefully roll up the exterior poly drop that is on the ground, with the debris in it, and dispose at a remote location as asbestos waste. Do not dispose of any window poly/debris in the District dumpster.

13. Spray on encapsulate will be sprayed onto the window opening and poly surface of the plywood on the exterior side of the window opening.

14. Air Quality Air Samples may be taken once a wing is completed inside a number of the classrooms inside the wings by the District's ES&A personnel or the District's asbestos consultant and analyzed by TEM analysis. No personnel except the District's ES&A personnel or the District's asbestos consultant properly protected will be allowed inside the building being abated prior to receiving air sampling results or visual clearance. The plywood on the window openings will be left in place, and secured until air-sampling results or a visual clearance is received from the District's ES&A personnel or the District's asbestos consultant.

15. The window replacement contractor can work in the window opening, once the removal has passed a visual clearance, but cannot enter the area of demarcation or work on the same side of a building, while abatement is being conducted. Once abatement activities have been completed for the day, the replacement contractor could then work on that side of the building until abatement activities are resumed.

1.02 DECONTAMINATION ENCLOSURE SYSTEM AND WASTE LOAD-OUT AREA

A. Construct a worker decontamination enclosure system contiguous to the work area as follows:

1. The decontamination enclosure shall be constructed of two layers of 6 mil poly sealed with tape. At the discretion of the Owner the contractor may be required to construct a decontamination enclosure outside of the building. The exterior Decon shall be constructed with a minimum of 2x4 studs 24 inches on center and 1/2 inch plywood and to a standard which insures the security of the building. The outside chamber shall have a solid lockable door that shall remain locked whenever the Contractor is not on site. A key will be given to the Owner. The location of any decontamination enclosures will be determined by the Owner.

2. An equipment or dirty room with two doorways, one to the work area and one to the shower room. Pop-up Decon chambers typically will not be approved for use by the District. The use of Pop- up Decon Chambers will be reviewed on a case by case basis and the District reserves the right to require that they not be used.

3. A **metal** shower room with two doorways, one to the equipment room and one to the clean room. The shower room shall contain at least one shower with hot and cold water. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind. Ensure a supply of soap and shampoo at all times in the shower room. Clean and dry towels shall be available for employees and owner-authorized visitors and personnel. A three-stage water filtration system must be employed prior to release of shower water into the local sewage system. The shower must comply with all applicable backflow prevention/cross connection requirements including the Districts. Any shower or water device that does not meet the minimum air gap requirement will have to be fitted with the appropriate backflow prevention device. Proof of the required testing of any employed backflow prevention assembly will be required. Non-metal pop up showers are not acceptable.

4. A clean room with one doorway into the shower and one entrance or exit to non-contaminated areas of the building or outside. The clean room shall have sufficient space for storage of the workers' street clothes, towels and other non-contaminated items. Individual lockers shall be available to workers within the clean room. Pop-up Decon chambers typically will not be approved for use by the District. The use of Pop- up Decon Chambers will be reviewed on a case by case basis and the District reserves the right to require that they not be used.

B. As directed by the District, construct using (2) two layer of 6 mil. Poly, a waste load-out area contiguous to the work area which is utilized for transportation of ACM to a landfill.

1. The decontamination enclosure may only be used as a waste load out area with Owner approval, and only when it exits to the exterior of a building and there are no other exterior doors inside the containment. All waste load out activities will be accomplished through a waste load out enclosure exiting an exterior door whenever one is available.

The Decontamination enclosure will only be considered for use as a waste load out enclosure when all other avenues of exit are not deemed practical by the Owner.

1.03 MAINTENANCE OF ENCLOSURE SYSTEMS:

A. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

B. Visually inspect enclosures and negative air units at the beginning of each work period or shift. Details of the inspections are to be included in the Contractor's daily log. The contractor will be required to note the manometer readings of the containment in the daily log at the start and end of the shift and every 1/2 hour while on the job site. **The Contractor will be required to inspect containments at locations that are awaiting final clearance sampling results twice daily, once in the morning and once late in the afternoon before the building is scheduled to be locked up.**

C. Use smoke methods to test effectiveness of barriers and the negative air pressure system when directed by the District.

1.04 ASBESTOS REMOVAL WORK SHALL NOT COMMENCE UNTIL;

A. Arrangements have been made for disposal of waste at an acceptable site.

B. Arrangements have been made for containing and/or disposal of waste water resulting from showering and other abatement activities.

C. Work areas, decontamination enclosure system, and waste load-out area are effectively segregated.

D. Tools, equipment and material waste receptacles are on-site.

E. The Type "C" supplied air respirator system(s) or other approved air filtration system is (are) on-site and fully operative, when required by the District.

F. All other preparatory steps have been taken and applicable notices posted and permits obtained.

G. A visitor and employee log-in/log-out system is in place at the job site. All persons entering the site will be required to sign-in and sign-out.

H. Plexi-glass view windows have been installed in all locations requested by the Owner.

I. The containment has been inspected and written approval has been given by the Owner.

PART 2 - ASBESTOS REMOVAL

2.01 ORDER OF OPERATIONS

A. In general, work shall progress in the following order of operations; this listing is not provided to suggest that abatement sequences or additional requirements may not be required of the Asbestos Abatement Contractor to comply with regulatory requirements depending on the specific nature of each particular asbestos abatement projects:

1. Site preparations (See Section 02140, PART 1).

2. Removal of all asbestos debris and contaminated fixtures from the work site.

4. Rough clean and remove all remaining asbestos debris.

5. Detail clean and removal all asbestos containing asbestos debris and residual asbestos contaminants.

4. Encapsulate all areas from which asbestos was removed. Any encapsulant installed must be compatible with any new products that will installed over the encapsulate such as flooring products. Encapsulation will be done prior to taking air clearance samples or after air samples have been sampled to ensure that the project encapsulation activity complies with Nevada regulations. (See Section 02140, Part 2, 2.03)

5. Clean up site (See Section 02140, PART 2, 2.04).

6. Remove final (splash protection) layer of polyethylene sheeting from walls.

7. Nothing in Section 02140, PART 2, 2.01 is meant to supersede the inspection procedures noted in Section 02150, PART 2.

2.02 REMOVAL PROCEDURES

A. Floor covering may be removed physically, mechanically, or chemically. The work may include the abatement of asbestos containing material (ACM) on floors. New flooring materials will be installed over abatement areas so mastic removal techniques employed by the abatement contractor are to be done so that installed flooring products are able to be warranted by the flooring manufactures. If the abatement contractor is being hired by a flooring contractor the abatement contractor must consult the flooring installer and ensure their employed removal techniques do not void any warranties for new installed products. It is quite possible that chemical mastic removers may not be able to be utilized to achieve this requirements. No power tools may be utilized to remove flooring materials. As feasible, all removal shall be conducted using wet methods to reduce the release of fibers. If chemical mastic removers are used, follow

the manufacturers recommended procedures.

B. Remove the asbestos material in small sections. As it is removed, pack the wetted material in impermeable plastic bags (2) of 6 mil minimum thickness. Plastic waste bags will be then placed into waste containers prior to removal from the abatement area. Material shall not be allowed to leak out or dry out prior to insertion into the containers.

1. Contractor shall adhere to disposal authorities' size and weight requirements for containers (bags or packages).

2. All ACM or asbestos-contaminated material that has been removed shall be bagged at the end of each work shift (that is, debris on the floor cannot be allowed to accumulate).

3. All ACM or asbestos-contaminated material which has been bagged or wrapped in the work area cannot be allowed to accumulate; all bagged or wrapped material must be placed in the dumpster after every shift.

C. Remove bagged or wrapped material to waste load-out area. Re-bag or re-wrap all material in a second impermeable 6 mil bag or second 6 mil layer of plastic, respectively and then place into a waste container, except carpet rolls. Clean external surfaces of bags by wet sponging prior to being put into the waste container. The exterior of the containers shall be wet wiped inside the waste load out decon and place caution labels on containers in accordance with OSHA regulation 29 CFR 1926.58. **No abatement activities may be taking place inside the containment during waste load out. The decon shall be sealed up during waste load out.** Egress through the decon shall take place prior to or after waste load out.

1. **Under no circumstance will waste bags or containers be allowed to be stored inside a building.** The waste will be removed from the containment and **immediately** be transported outside the building and placed into the waste disposal receptacle.

D. In the event that no work is performed in a given area for any period which exceeds thirty-six (36) hours, all visible ACM on the plastic walls and all bagged and containered ACM or asbestos-contaminated material shall be locked and secured in the dumpster. If the amount of material exceeds the storage capacity of the dumpster, all material must be properly disposed of at the landfill prior to that 36-hour, non-work period.

E. The chemical mastic remover(s) shall be used in accordance with the manufacturer's directions at all times. Due to the combustible nature of chemical mastic removers, the District reserves the right to limit the amount of mastic remover used at any one time.

2.03 ENCAPSULATION PROCEDURES:

A. On friable asbestos abatement projects, the State of Nevada requires that air clearance samples be taken prior to encapultaion. Contractors will take direction from the District ES&A personnel

or District hired asbestos consultant to determine if encapsdulation will be done prior to taking air clearance samples or after air samples have been sampled to ensure that the project encapsulation activity complies with Nevada regulations. Prior to air clearance sampling or after and upon approval by the Owner, either Contractor shall apply a penetrating encapsulant to bind any remaining non-visible asbestos fibers; encapsulant shall be applied according to manufacturer's directions. Contractor shall submit product information for prior approval by the District.

B. The encapsulant shall be clear in color. Any encapsulant installed must be compatible with any new products that will installed over the encapsulate such as flooring products.

2.04 CLEAN-UP

A. Remove all visible accumulations of asbestos material and debris. Wet clean all surfaces within the work area.

B. The windows, doors, and HVAC vents shall remain sealed and any HEPA filtered negative air pressure systems, waste load-out, and decontamination enclosure systems shall remain in service.

1. All equipment used in the work area shall be included in the clean-up and shall be removed from work areas via the decontamination enclosure system or waste load-out, at appropriate times in the cleaning sequence.

2. **Under no circumstances will contaminated materials, tools or equipment that has been removed from the containment be allowed to be placed inside a building outside containment.** All items will be **immediately** transported to a lockable storage unit or placed inside a Contractor's vehicle. Items will also not be allowed to accumulate outside of a building.

C. As directed by the District, clean all remaining surfaces in the work area (including the HVAC system, see Section 02160) and any other contaminated areas with water and with HEPA filtered vacuum equipment. After cleaning the work area, wait an appropriate period of time to allow for settlement of dust, and again wet clean a second time and clean with HEPA filtered vacuum equipment all surfaces in the work area. After completion of the second cleaning operation, perform a complete visual inspection of the work area to ensure that the work area is free of visible asbestos debris.

1. If the District, after the second cleaning finds visible accumulations of asbestos debris in the work area, the Contractor shall repeat the wet cleaning until the work area is in compliance, all at the Contractor's expense.

2. Wet clean as necessary.

3. Remove splash guards as directed by the District.

4. Nothing in this section is meant to relieve the Contractor of his responsibility to meet the

final clean criteria as established by these contract documents or any other applicable laws or regulations.

D. When a final inspection determines that the work area is free of accumulations of visible asbestos debris, and fiber levels continue to remain at or below .010 fibers/cc the District will proceed with the final TEM clearance sampling (see criteria as set forth in Section 02110, PART 4, 4.01).

E. WHEN CLEAN-UP IS COMPLETE, AFTER AIR CLEARANCE IS RECEIVED;

1. Remove final polyethylene barriers from windows, doors, corridors, and so on; remove negative air pressure system from area.

2. Relocate objects moved to temporary locations in the course of the work to their former positions.

3. Where applicable, establish HVAC, mechanical and electrical systems in proper working order. Install new filters, furnished by the Owner, and dispose of used filters as asbestos-contaminated waste.

4. When more than one work or containment area is required, install new clean barriers (6 mil plastic or better) to separate adjoining areas.

5. Contractor shall mop the abatement area floor with two coats of a product that will remove any residue but does not void and product being installed over the abatement areas such as flooring materials. Additional coats of clear water will then be mopped onto the floor until the product utilized to do the final wash residue is removed.

2.05 DISPOSAL

A. As the work progresses, and to prevent exceeding available dumpster storage capacity on site, remove asbestos waste and dispose of such at an authorized disposal site in accordance with the requirements of the disposal authority. Submit documentation regarding disposal to the District. Contractor is responsible for all costs regarding waste including waste characterization sampling.

1. All ACM or asbestos-contaminated material must be double-bagged (or wrapped) in 6 mil bags and then placed into a waste container (drum). All materials that are generated from the asbestos containment must be disposed of as asbestos waste to include the poly containment materials or any other materials used to create the containment that are present inside or with surfaces that are inside the containment.

2. All ACM or asbestos-contaminated material must be damp when delivered to the disposal site.

3. **Under no circumstance will waste bags or containers be allowed to be stored inside a building.** The waste will be removed from the containment and **immediately** be transported outside the building and placed into the waste disposal receptacle.

4. Chemical mastic remover will be separated from the asbestos waste and disposed of in accordance with all applicable regulations. It is the Contractors responsibility to determine the proper disposal based upon the type and amount of mastic remover.

5. All waste load out activities will be scheduled for and inspected by the Owner.

B. Sealed plastic bags may be dumped into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled.

C. Dumpsters or any EPA-approved hazardous waste container system capable of being totally secured can be used in lieu of drums for transport to the disposal site. Absolutely no uncovered, unlockable dumpsters will be allowed to be used as a waste container system. This includes dumpster for construction debris that is associated with an asbestos abatement project. Open dumpsters, vehicles or trailers with wood covering installed will not be allowed for use as a waste container system.

1. All loads are to be delivered in an enclosed vehicle. No open pick-ups will be allowed.

D. Each load must be accompanied by a Uniform Hazardous Waste Manifest (EPA Form-22) or equivalent and any other certificate required by State or local agencies.

1. Original copies of the Hazardous Waste Manifest shall be provided to the District.

SECTION 02150

WORK SCHEDULE AND INSPECTION PROCEDURES

PART 1 - WORK SCHEDULE

1.01 The work is to be carried out diligently to completion with utmost speed. The Contractor shall furnish to the District a final working schedule showing anticipated starting and completion dates for each removal zone or area. This schedule shall be furnished to the District within at least five (5) calendar days from issuance of the District's written Notice to Proceed.

1.02 If, in the opinion of the District, it becomes necessary to work additional men for maintaining the schedule and for the completion of any phase of the project within the specified time, the Contractor must immediately do so upon written request by the District.

1.03 Work shall proceed immediately upon receipt of Contractor's Notice to Proceed from the District. Facilities shall be available to the Contractor as agreed upon. All work must be completed no later than agreed upon.

PART 2 - INSPECTIONS BY THE DISTRICT

2.01 The District shall inspect the site preparation work within the building as outlined in Section 02140, PART 1 to ensure that the facility is adequately sealed off, the negative air pressure system is functioning properly, the decontamination enclosure system, and waste area are in place. The Contractor SHALL NOT PROCEED with the gross removal until such time as the District has inspected the site preparation work and given the Contractor a Notice to Proceed (PREP).

2.02 The District shall inspect the removal work and work area upon its completion within the building or section thereof to ensure that all visible ACM or asbestos-contaminated material has been removed. The Contractor SHALL NOT PROCEED with the next phase of the work or spray any materials on the building systems until such time as the District has inspected the facility and given the Contractor a Notice to Proceed (REMOVAL AND DETAIL).

2.03 After encapsulation, the District will inspect the adequacy of encapsulation within each building or section thereof. The Contractor SHALL NOT PROCEED with final clean-up until a Notice to Proceed has been issued (ENCAPSULATION).

2.04 The District will inspect the facilities on a daily basis as necessary to ensure compliance with this Contract. Representatives of the District may be on-site at all times during the performance of this Contract.

A. The District is not limited by the inspection requirements as noted above in Sections 2.01 through 2.03; additional safety and health inspections as well as inspections by the Owner will occur randomly. Contractor will not attempt to control access to asbestos containments to District asbestos personnel.

SECTION 02160

MECHANICAL

PART 1 - SCOPE OF WORK

1.01 Remove as directed all HVAC ventilation grilles and registers, including ceiling or wall access panels. Each shall be wet-cleaned and stored by the Contractor except those designated to be disposed of as asbestos waste. Or seal all grilles, registers, and ceiling or wall access panels in plastic sheeting.

1.02 Contractor will ensure that the all equipment has been properly locked out and all procedures to secure all equipment, including mechanical equipment, will comply with all requirements of the OSHA and the Districts Lock out/tag out procedures.

1.03 As directed by the District, during final cleaning, wet-clean and vacuum all HVAC ventilation ducts with HEPA filtered vacuum equipment.

A. Cleaning may include, but is not limited to, the first six feet of all supply, return and exhaust air ducts adjacent to the work area.

SECTION 02170

ELECTRICAL

PART 1 - SCOPE OF WORK

1.01 Disconnect all circuits in the work area at the main panel box and lock out same as approved by the District.

1.02 Where required, remove all existing electrical fixtures including, but not limited to, ceiling and wall lights, clocks, alarms, and sound system fixtures. Each shall be wet-cleaned, location tag attached and store as directed by the District.

A. Nonfunctional electrical fixtures or systems shall be brought to the attention of the District in writing prior to commencement of work. Failure to notify the District in writing of any nonfunctional electrical fixtures or systems will not act to relieve the Contractor of the provisions of Section 02170, PART 2, 2.04.

1.03 Protect all exposed wires.

1.04 Contractor will ensure that the all equipment has been properly locked out and all procedures to secure all equipment, including electrical equipment, will comply with all requirements of the OSHA and the Districts Lock out/tag out procedures.

SECTION 02180

RESTORATION

PART 1 - RESTORATION WORK

1.01 Existing conditions disturbed by the Contractor's operations shall be restored to a condition satisfactory to the District and shall match existing adjacent surfaces. Damage due to tape, staples, nails, spray-poly, water, including unforeseen actions, is the responsibility of the Contractor and must be restored to the prior to final acceptance of the facility by the District.

1.02 The Contractor shall survey and detail all existing damage to walls, floors and floor coverings, fixtures and so on. This survey shall be submitted to the District in writing prior to set-up and preparation of the worksite.

1.03 All restoration must be completed within two weeks after the abatement project containment is torn down. Failure to complete the restoration in the two week time frame will result in the District hiring an outside vendor to complete the restoration. The cost of services for the restoration will be deducted from the projects final payments or any payments outstanding to the contractor.

1.04 The contractor is responsible for supplying all labor and materials to properly perform the restoration.

1.05 The contractor is responsible for the security of items removed by the contractor that require reinstallation. The District assumes not responsibility for the security of items left in District facilities. The contractor is responsible for replacing at no cost to the District any item removed by the contractor that is found to be missing or damaged at the time of reinstallation.

PART 2 - WALL AND FLOOR COVERING

2.01 It is the Contractor's responsibility to ensure that all wall areas are adequately sealed with 6 mil plastic in order to prevent water accumulation and asbestos contamination. Any wall material which is stained or otherwise damaged during any phase of the work shall be replaced in its entirety with materials of equal quality and selected by the District.

2.02 The Contractor shall restore all painted, varnished, lacquered, paneled or enameled surfaces (including factory finished surfaces) should damage occur from tape, staples, nails, water, and so on. Should such procedures be unacceptable to the District, the District may require, at its option, the entire replacement, refinishing, repainting or resurfacing of the damaged surface area.

PART 3 - FIXTURES

3.01 Any electrical fixtures, HVAC grilles, registers, and access doors lost or damaged by the Contractor shall be replaced at Contractor's expense.

3.02 Any other fixtures, furniture, appliances, and equipment not specifically mentioned must be replaced or repaired at Contractor's expense if lost or damaged.

PART 4 - SEWER SYSTEM

4.01 Should the Contractor, his employees, or subcontractors utilize existing sewer facilities for disposal of any ACM, asbestos contaminated material, or asbestos contaminated water, Contractor shall thoroughly clean the entire building's sewage system including, but not limited to, all sink, shower, floor, and toilet drains and traps, all primary and secondary sewage lines, and all lines wherever located and extending underground to the main sewer service connection.

PART 5 - EXTERIOR OF BUILDING

5.01 It is the Contractor's responsibility to repair or replace any and all damaged external areas of the building including, but not limited to, walls, doors, sidewalks, driveways, parking lots, concrete curbs, shrubbery, grass, sprinkler systems, and so on.

A. Damaged areas will be repaired or replaced at the option of the District.

5.02 Any ground areas external to the building which may become contaminated with asbestos shall be decontaminated at the Contractor's expense.

A. Decontamination procedures shall require removal of dirt to a depth of 4 inches which shall be disposed of as asbestos waste.

B. All areas from which soil was decontaminated shall be restored to its original condition at the option of the District.

SECTION 02190

TRANSITE SUPPLEMENTAL SPECIFICATIONS

Asbestos Abatement Specifications
Washoe County School District
Transite Panels at District Sites

Background

Washoe County School District (WCSD) will be performing the abatement of transite wall, ceiling panels, pipes and/or window panels at various District sites. This supplemental spec as well as the District specs will apply to the removal of all transite materials. The abatement contractor shall be prepared to abate the transite materials as identified in the site-specific architectural drawings provided for the individual site or information provided prior to bidding.

The contractor will need to note when additional asbestos-containing materials are to be abated within the same containment area and perform that work within the same negative pressure enclosure, if applicable. The contractor's onsite supervisor, or project estimator during bidding, will need to confer with either WCSD or the District's independent third-party consultant, for the expected containment areas and number of containments at a particular site.

Scope of Work

The contractor awarded the project will be responsible for all costs associated with the abatement of the transite.

The project scope shall be determined by the site-specific architectural drawings prepared for the individual site. The Contractor is responsible for reviewing the architectural drawings and the WCSD Regulated Systems and Assessment (ES&A) Material Disturbance Permit to determine which materials, including any sealants, in the project area are asbestos-containing.

The District has retained an independent third-party abatement consultant to draft these specifications, who may provide oversight during the projects, conduct visual clearance inspections and collect clearance air samples at the conclusion of these abatement projects. All oversight or additional oversight and collection of air samples may be performed by the District's ES&A Department as well at their discretion.

In addition to complying with these supplemental specifications, the Contractor must also comply with all other asbestos abatement requirements listed in these asbestos abatement specifications. If Contractors find any conflicting information in the supplemental specifications, the Contractor must comply with the requirements listed herein that are deemed most stringent by the District or District hired asbestos consultant supervising the abatement.

Project Requirements

Contractor shall be approved by the WCSD ES&A Department to perform asbestos abatement activities within the District. **Approval of firms that have not performed activities impacting asbestos for the District previously, will need to submit all necessary documentation outlined in the WCSD ES&A Technical Specifications for the project at least ten (10) business days prior to work commencing for approval.**

All workers certifications – asbestos training and licensing and medical clearance – shall be submitted to the WCSD ES&A at least five (5) working days prior to project commencement at minimum for approval. Contractor is responsible for reviewing WCSD ES&A worker roster for the company to assure all workers to be used on the project have been approved prior to arrival onsite. Workers not identified on the approved worker list for the contractor will not be allowed to perform any activities onsite, even if documentation is provided onsite at time of the project commencement.

The abatement contractor's onsite supervisor shall have a copy of these Specifications onsite at all times and be familiar with the project requirements prior to arrival onsite at the project. Failure to follow requirements of these Specifications, or lack of knowledge of requirements to be followed during the project, are grounds for replacement of the abatement contractor's onsite supervisor.

Only the abatement contractor will be allowed to occupy the project area once abatement activities are scheduled to start. This applies to all WCSD non-ES&A staff/personnel and site staff/personnel. The area shall only be occupied by the abatement contractor, WCSD ES&A staff, and District's independent third-party abatement consultant. Other personnel will not be allowed to occupy the building during asbestos abatement activities.

Contractor shall adhere to the requirements of these Specifications, WCSD ES&A Technical Specifications, Federal, State, and Local regulations.

Water and Electricity

Water and electricity are available onsite, but long hoses and cords may be necessary. The contractor is responsible for any damage to water or power systems caused by their use of those systems.

Contractor shall provide a GFI at the primary plug-in of all electrical trains used for electrical equipment. Hose washers shall be provided at all hose connections to prevent leakage of water and potential damage to District facilities.

Pre-Cleaning

Pre-cleaning is not expected to be necessary; however, Contractor may need to remove some debris or clean surfaces to facilitate building containment area.

Notifications

Contractor is responsible for timely notifications (including courtesy notifications if applicable) to Nevada Division of Industrial Relations and Washoe County Health Department. Notifications shall be filed in advance of any waiting periods in lieu of the proposed project start date or other requirements for pre-work notification. Any revisions to notifications including project scope, start date, duration of project, or any other changes are the Contractor's responsibility. Valid notifications shall be posted onsite during the project, and copies shall be provided to the District's onsite third-party consultant.

Equipment

Contractor is responsible for providing all necessary equipment in sufficient quantities to complete the project in the schedule provided for the project. All equipment must arrive onsite clean and in proper functioning order. Any equipment that arrives onsite dirty or not in proper functioning order shall be removed from the project site for cleaning and/or repairs.

Training

Workers performing asbestos abatement activities as part of this project must have AHERA Worker training with at least one worker trained to the AHERA Contractor-Supervisor level. All workers shall be licensed by the Nevada DIR for asbestos work. The crew lead Contractor-Supervisor may not leave the site anytime asbestos abatement operations are being performed.

As noted previously, all workers certifications must be approved by the WCSD ES&A prior to arrival onsite to start work. Copies of the worker certs shall be provided to the District's onsite third-party consultant as well.

Personal Protection Equipment

The contractor is responsible for adhering to Nevada Division of Industrial Relations and OSHA requirements for worker respiratory protection. At a minimum, workers shall wear half-face, negative pressure respirators with HEPA (P-100) filters during any activities which disturb asbestos-containing materials.

Workers shall wear Tyvek-level disposable coveralls, hard hats, work gloves, and safety glasses (if not using a full face-piece respirator.) Street clothes may be worn under disposable coveralls.

All employees shall have a valid medical clearance and fit test for respirators to be used. Medical clearance shall be provided for approval to the WCSD ES&A prior to the project commencement. Copies of the medical clearance and fit test shall be provided to the District's onsite third-party consultant as well.

Personal Air Monitoring

The contractor is responsible for the collection of personal air samples on workers during all abatement activities for asbestos. Personal air samples shall be collected in accordance with OSHA sampling protocols and analyzed by a laboratory with the proper accreditation.

Laboratories to be used for personal air sample analysis must be approved by WCSD ES&A.

Copies of the personal air sampling results, along with laboratory accreditation, shall be submitted to the WCSD ES&A and District's independent third-party consultant.

In addition, the contractor will comply with all requirements regarding personal air monitoring listed in Section 02130, Part 2- - Air Monitoring, 2.02.

Security and Safety

The contractor is responsible for security of all equipment and safety of all employees. Contractor shall provide any storage containers or security needed for tools and equipment if needed.

Contractor is responsible for all worker safety and following all applicable regulations, namely Nevada and Federal OSHA, including for asbestos and respirable crystalline silica exposures.

Occupancy

As noted previously, the project area will be limited to the abatement contractor, WCSD ES&A staff, and District's independent third-party consultant once abatement activities are ready to commence. Once the area has been cleared, other parties may occupy.

Emergency services may also occupy areas in the event of an emergency during the project.

Challenge Testing

All HEPA-filtered equipment to be used on this project shall have been challenge tested (DOP or equivalent) within the previous 30 days prior to use onsite. Copies of the challenge testing results shall be provided to the WCSD ES&A and/or District's independent third-party consultant.

Asbestos Abatement Containment and Abatement Requirements

ALL POLY USED ON PROJECT SHALL BE 6-MIL AND FIRE-RETARDANT UNLESS EXEMPTED IN REQUIREMENTS BELOW.

WHERE POSSIBLE, TRANSITE PANELS SHALL BE REMOVED FROM THE EXTERIOR SIDE.

Interior Transite Panel Abatement

1. Contractor shall seal all critical barriers (HVAC, windows, doors, etc.) in each area with one layer of 6-mil poly. Doors leading outside of the containment area shall remain in place for security.

2. All walls, floors, and any fixed objects that cannot be removed from the containment shall be covered with one layer of 6-mil poly. An additional layer of 4-mil poly may be applied to covered surfaces for use as a cleaning barrier. Vertical barriers may be installed to decrease the size of containment areas; however, such barriers shall be constructed with wood framing and ½" plywood backing.

3. Poly critical barriers with wood framed ½" plywood backing shall be installed on the exterior side of the transite panel to contain the interior space and secure the wall opening. Two layers of poly shall be used to cover the plywood with an additional two layers installed on exterior side of the plywood which will extend out 2" on each side of the plywood.

4. A minimum three-stage decontamination unit with operable shower shall be contiguous with each containment. See "Decontamination Chamber Requirements" in this specification for further requirements.

5. Negative pressure shall be established and a recording manometer shall be attached to each containment. Copies of the manometer recordings shall be provided on 8.5"x11" paper by the Contractor.

6. An air pressure differential of -0.050" WC must be established and maintained throughout all phases of abatement and through receipt of passing air clearance.

7. Workers shall wet all materials prior to, and during, removal using amended water.

8. Transite panels shall be removed intact wherever possible.

9. Any sealants at edges of transite panels, or other suspect materials that may need to be disturbed by the transite panel removal shall be considered to be asbestos-containing materials unless sampled and proven otherwise.

10. Following removal of all transite panels, all poly shall be wet-wiped or HEPA-vacuumed clean as part of detail cleaning. Any 4-mil poly cleaning barriers may be removed as part of this detail cleaning.

11. All waste shall be placed into two separate waste bags of 6-mil thickness. The outer waste bag shall be sealed in a "goose-neck" fashion to create a leak-tight container.

Exterior Transite Panel Abatement

1. Contractor shall seal all critical barriers (HVAC, windows, doors, etc.) within 20 feet of the work area with one layer of 6-mil poly.

2. Poly drop sheets shall be installed in the work area, extending 20 feet out from any transite panel to be removed, and this work area shall be demarcated with warning signs / tape. The Contractor shall control access to this regulated area to a distance of 50 feet out, demarcating the perimeter with caution tape.

3. Poly critical barriers with wood framed ½" plywood backing shall be installed on the interior side of the transite panel to seal off the interior space and secure the wall opening. The plywood will be covered with two layers of 6-mil poly on both the interior and exterior side. The interior poly barriers shall extend out two inches on each side.

4. Decontamination facilities shall be sited adjacent to the work area, and shall include a drop sheet. A water source shall be provided, along with soap and towels. Dirty water shall be contained. A privacy barrier shall also be installed as needed.

5. Workers shall wet all materials prior to, and during, removal using amended water.

6. Transite panels shall be removed intact wherever possible.

7. Any sealants at edges of transite panels, or other suspect materials that may need to be disturbed by the transite panel removal shall be considered to be asbestos-containing materials unless sampled and proven otherwise.

8. Following removal of all transite panels, all poly shall be wet-wiped or HEPA-vacuumed clean as part of detail cleaning.

9. All waste shall be placed into two separate waste bags of 6-mil thickness. The outer waste bag shall be sealed in a "goose-neck" fashion to create a leak-tight container.

Decontamination Requirements

A three stage decon unit including a shower is required for any interior asbestos containments. Each chamber of the decon must have self-closing Z-flaps that seal air tight. A four-inch barrier must exist at the floor of each chamber to prevent the transfer of water and debris from chamber to chamber. This barrier will also provide a seal for the flaps between each chamber. Equipment and bag out chambers do not require a shower, but a washing station must exist and they must be three-stages. The washing station must be constructed in a manner that prevents water from splashing or traveling out of the central decon chamber. Equipment and bag out chambers must also have flaps that seal air tight.
Shower units must be equipped with an overflow pan to catch water which overfills the drain system, or is splashed out of the chamber during employee showers. Showers must be supplied with hot water, soap, shampoo, and towels for the workers. Showers shall be sited in the central decon chamber. Showers and washing station must also be equipped with a filtering system that includes a 0.5 micron filter. If filtering system is not available or is not functioning correctly, shower water must be bagged and disposed of as asbestos-containing waste.
All chambers of the decon, including the clean chamber, must be kept clean and dry (except shower) at all times. Abatement work will be stopped if decon is not kept in acceptable condition.

Regulated Area Signage
Asbestos Danger signs shall be posted at all entrances or exits to the containment area, even if the entrance or exit is sealed as a critical barrier. Signs shall also be posted on the flap leading into the shower station of

decontamination chambers. Signage will be set once a pre-start visual is passed and work may begin in the containment, but no work will start until all signs are posted.
Signage shall meet the revised requirements set forth in 29 CFR 1926.1101(k)(7).

Air Pressure Differential – Full Containment Areas Only

Air pressure differential must be established and maintained at -0.05 inches water differential or better before start of abatement and air pressure differential must be maintained through all phases of project, including collection of clearance air samples and receipt of results. A minimum of eight air changes per hour is required for the project. Work will be halted if the air pressure drops below -0.05 inches water differential and can resume when air pressure differential of -0.05 inches is established again.
Air pressure differential must be displayed and recorded on a properly calibrated and fully functioning manometer. Copies of the manometer recording must be provided by the contractor on 8.5" x 11" paper at completion of project.
All negative air machines must be exhausted to the exterior of the building using wire-reinforced flex duct. All negative air machines must be used inside containment. No machines shall be attached to the exterior of the containment with the intake only inside.
Any exterior or interior barricades need to be constructed of a minimum ½" plywood and shall be made secure.

Make-Up Air Sources

Available, but may need to be HEPA-filtered. Any make-up holes in critical barriers must be equipped with a challenge/DOP-tested HEPA filter. Placing a pre-filter in the make-up air hole will not be allowed.

Disposal Requirements

All asbestos waste generated on this project will need to be double-bagged in 6-mil poly waste bags, or double-wrapped in 6-mil polyethylene sheeting. All waste bags must be sealed in a "gooseneck" fashion and "burrito-wrapped" materials shall have staggered seams. All non-friable debris shall be properly labeled and identified for disposal as an asbestos-containing waste. Materials that have become friable or which removal methods have made friable shall be labeled and identified for disposal as regulated asbestos-containing material (RACM).

The contractor will need to provide a lockable waste bin for all waste created on this project. Waste bin will need to be labeled with asbestos signage once the waste is loaded into the bin. Waste bins shall be lined with one layer of 6-mil poly prior to waste being loaded.

Waste bins will need to arrive onsite clean of debris or any other waste and in proper functioning order. Waste bins may be rejected by WCSD ES&A staff or District's independent third-party consultant if these conditions are not met, with no extra charge to the District.

Clearance

Upon completion of asbestos abatement activities, a final visual inspection will be performed by either WCSD ES&A staff or District's independent third-party consultant. This inspection will be performed only after the abatement contractor crew supervisor has performed their own final visual clearance. Areas must be free of all three-dimensional material with all surfaces clean of dust and debris and all materials abated within the containment area.

The visual inspection will serve as final clearance for exterior transite panel removal. Following a successful visual clearance inspection, the Contractor shall apply a lock-down encapsulant, then remove containment drop sheets, signage, equipment, etc. The barriers at window / wall openings shall be left in place.

For interior removal of transite panels within full containment, final clearance shall be through aggressive air sampling conducted by the District's independent third-party consultant. A set of five air samples will be collected inside the containment to be analyzed in accordance with AHERA completion of response action criteria using either phase contrast microscopy (PCM) or transmission electron microscopy (TEM), depending on the quantity of materials abated.

Clearance criteria for PCM sample analysis, in accordance with AHERA, is 0.01 fibers per cubic centimeter (0.01 f/cc) or less for each of the five samples.

Clearance criteria for TEM sample analysis, in accordance with AHERA, is an average of 70 structures per square millimeter (70 s/mm^2) or fewer for the inside-containment set of five samples.

Contractor shall return to the site to apply a lock-down encapsulant, remove poly barriers and equipment upon notification of passing clearance air samples. The barriers at window / wall openings shall be left in place.

SECTION 02200

SUPPLEMENTAL FLOOR TILE & MASTIC SPECIFICATIONS
Asbestos Abatement Specifications
Washoe County School District
Floor Tile and Mastic at District Sites

Background

Washoe County School District (WCSD) will be performing the abatement of vinyl floor tile (VFT) and mastic at various District sites. This supplemental spec as well as the District specs will apply to the removal of all Floor Tile and Mastic materials. The abatement contractor shall be prepared to abate flooring materials as identified in the site-specific architectural drawings provided for the individual site or information provided prior to bidding.

The contractor will need to note when additional asbestos-containing materials are to be abated within the same containment area and perform that work within the same negative pressure enclosure. The contractor's onsite supervisor, or project estimator during bidding, will need to confer with either WCSD or the District's independent third-party consultant, for the expected containment areas and number of containments at a particular site.

Scope of Work

The contractor awarded the project will be responsible for all costs associated with the abatement of flooring materials.

The project scope shall be determined by the site-specific architectural drawings prepared for the individual site. The Contractor is responsible for reviewing the architectural drawings and the WCSD Regulated Systems and Assessment (ES&A) Material Disturbance Permit to determine which materials, including baseboards and mastic, in the project area are asbestos-containing.

The District has retained an independent third-party abatement consultant to draft these specifications, who may provide oversight during the projects, conduct visual clearance inspections and collect clearance air samples at the conclusion of these abatement projects. All oversight or additional oversight and collection of air samples may be performed by the District's ES&A Department as well at their discretion.

In addition to complying with these supplemental specifications, the Contractor must also comply with all other asbestos abatement requirements listed in these asbestos abatement specifications. If Contractors find any conflicting information in the supplemental specifications, the Contractor must comply with the requirements listed herein that are deemed most stringent by the District or District hired asbestos consultant supervising the abatement.

Most floors in the District are concrete, but wood floors may be encountered. Since cleaning flooring mastics are difficult if not impossible on wood floors, whenever there is more than is one layer of flooring sub-floor, one layer will be removed as a part of the abatement process and properly disposed as asbestos containing materials.

Project Requirements

Contractor shall be approved by the WCSD ES&A Department to perform asbestos abatement activities within the District. **Approval of firms that have not performed activities impacting asbestos for the District previously, will need to submit all necessary documentation outlined in the WCSD ES&A Technical Specifications for the project at least ten (10) business days prior to work commencing for approval.**

All workers certifications – asbestos training and licensing and medical clearance – shall be submitted to the WCSD ES&A at least five (5) working days prior to project commencement at minimum for approval. Contractor is responsible for reviewing WCSD ES&A worker roster for the company to assure all workers to be used on the project have been approved prior to arrival onsite. Workers not identified on the approved worker list for the contractor will not be allowed to perform any activities onsite, even if documentation is provided onsite at time of the project commencement.

The abatement contractor's onsite supervisor shall have a copy of these Specifications onsite at all times and be familiar with the project requirements prior to arrival onsite at the project. Failure to follow requirements of these Specifications, or lack of knowledge of requirements to be followed during the project, are grounds for replacement of the abatement contractor's onsite supervisor.

Only the abatement contractor will be allowed to occupy the project area once abatement activities are scheduled to start. This applies to all WCSD non-ES&A staff/personnel and site staff/personnel. The area shall only be occupied by the abatement contractor, WCSD ES&A staff, and District's independent third-party abatement consultant. Other personnel will not be allowed to occupy the building during asbestos abatement activities.

Contractor shall adhere to the requirements of these Specifications, WCSD ES&A Technical Specifications, Federal, State, and Local regulations.

Water and Electricity

Water and electricity are available onsite, but long hoses and cords may be necessary. The contractor is responsible for any damage to water or power systems caused by their use of those systems.

Contractor shall provide a GFI at the primary plug-in of all electrical trains used for electrical equipment. Hose washers shall be provided at all hose connections to prevent leakage of water and potential damage to District facilities.

Pre-Cleaning

Pre-cleaning is not expected to be necessary; however, Contractor may need to remove some debris or clean surfaces to facilitate the building of negative pressure enclosure.

Notifications

Contractor is responsible for timely notifications (including courtesy notifications if applicable) to Nevada Division of Industrial Relations and Washoe County Health Department. Notifications shall be filed in advance of any waiting periods in lieu of the proposed project start date or other requirements for pre-work notification. Any revisions to notifications including project scope, start date, duration of project, or any other changes are the Contractor's responsibility. Valid notifications shall be posted onsite during the project, and copies shall be provided to the District's onsite third-party consultant.

Equipment

Contractor is responsible for providing all necessary equipment in sufficient quantities to complete the project in the schedule provided for the project. All equipment must arrive onsite clean and in proper functioning order. Any equipment that arrives onsite dirty or not in proper functioning order shall be removed from the project site for cleaning and/or repairs.

Training

Workers performing asbestos abatement activities as part of this project must have AHERA Worker training with at least one worker trained to the AHERA Contractor-Supervisor level. All workers shall be licensed by the Nevada DIR for asbestos work. The crew lead Contractor-Supervisor may not leave the site anytime asbestos abatement operations are being performed.

As noted previously, all workers certifications must be approved by the WCSD ES&A prior to arrival onsite to start work. Copies of the worker certs shall be provided to the District's onsite third-party consultant as well.

Personal Protection Equipment

The contractor is responsible for adhering to Nevada Division of Industrial Relations and OSHA requirements for worker respiratory protection. At a minimum, workers shall wear half-face, negative pressure respirators with HEPA (P-100) filters during any activities which disturb asbestos-containing materials.

Workers shall wear Tyvek-level disposable coveralls, hard hats, work gloves, and safety glasses (if not using a full face-piece respirator.) Street clothes may not be worn under disposable coveralls.

All employees shall have a valid medical clearance and fit test for respirators to be used. Medical clearance shall be provided for approval to the WCSD ES&A prior to the project commencement. Copies of the medical clearance and fit test shall be provided to the District's onsite third-party consultant as well.

Personal Air Monitoring

The contractor is responsible for the collection of personal air samples on workers during all abatement activities for asbestos. If removal activities or methods are expected to disturb any substrates which contain silica, the contractor is also responsible for collection of personal air samples for respirable crystalline silica

exposure. Asbestos and silica personal air samples shall be collected in accordance with OSHA sampling protocols and analyzed by a laboratory with the proper accreditation.

Laboratories to be used for personal air sample analysis must be approved by WCSD ES&A.

Copies of the personal air sampling results, along with laboratory accreditation, shall be submitted to the WCSD ES&A and District's independent third-party consultant.
In addition, the contractor will comply with all requirements regarding personal air monitoring listed in Section 02130, Part 2- - Air Monitoring, 2.02.

Security and Safety

The contractor is responsible for security of all equipment and safety of all employees. Contractor shall provide any storage containers or security needed for tools and equipment if needed.

Contractor is responsible for all worker safety and following all applicable regulations, namely Nevada and Federal OSHA, including for asbestos and respirable crystalline silica exposures.

Occupancy

As noted previously, the project area will be limited to the abatement contractor, WCSD ES&A staff, and District's independent third-party consultant once abatement activities are ready to commence. Once the area has been cleared, other parties may occupy.

Emergency services may also occupy areas in the event of an emergency during the project.

Challenge Testing

All HEPA-filtered equipment to be used on this project shall have been challenge tested (DOP or equivalent) within the previous 30 days prior to use onsite. Copies of the challenge testing results shall be provided to the WCSD ES&A and/or District's independent third-party consultant.

Asbestos Abatement Containment and Abatement Requirements

ALL POLY USED ON PROJECT SHALL BE 6-MIL AND FIRE-RETARDANT UNLESS EXEMPTED IN REQUIREMENTS BELOW.

Vinyl Floor Tile and Mastic Abatement

1. Contractor shall seal all critical barriers (HVAC, windows, doors, etc.) in each containment area with one layer of 6-mil poly. Doors leading outside of the containment area shall remain in place for security.

2. The contractor shall setup a regulated area and abate those areas of tiles that extend below door threshold prior to sealing of doorways as critical barriers as applicable.

3. All walls and any fixed objects that cannot be removed from the containment shall be covered with one layer of 6-mil poly. One additional layer of 4-mil poly may extend up from the floor to a height of 4' to act as a cleaning barrier.

4. A false-ceiling, minimum of 4-mil poly, shall be installed as directed by the owner or if needed to achieve and maintain sufficient negative air pressure differential as noted below. Mastic to be removed by hydro-blasting or grinding will require installation of a 4-mil poly ceiling. See hydro-blasting and grinding sections below.

5. A minimum three-stage decontamination unit with operable shower shall be contiguous with each containment. See "Decontamination Chamber Requirements" in this specification for further requirements.

6. Negative pressure shall be established and a recording manometer shall be attached to each containment. Copies of the manometer recordings shall be provided on 8.5"x11" paper by the Contractor to the District and third-party independent consultant.

7. An air pressure differential of -0.050" WC must be established and maintained throughout all phases of abatement and through receipt of passing air clearance.

8. Workers shall wet all materials prior to, and during, removal using amended water.

9. Baseboard removal shall not take place until containment is established.

10. At the conclusion of abatement, the floor surface shall be HEPA-vacuumed clean and all mastic removed. The criteria for mastic removal shall be no three-dimensional material, including mastic that may have become liquefied and entered slab divots, joints, or any other areas during the removal process.

11. All poly shall be wet-wiped or HEPA-vacuumed clean as part of detail cleaning. The 4-mil poly cleaning barrier may be removed as part of this detail cleaning unless required for maintaining sufficient air pressure differential.

12. All waste shall be placed into two separate waste bags of 6-mil thickness. The outer waste bag shall be sealed in a "gooseneck" fashion to create a leak-tight container.

For the hydro-blasting of the concrete substrate to remove mastic and for areas which must have the top surface of the concrete removed, as directed by the flooring subcontractor(s), the following requirements must be met by the Contractor:

1. For hydro-blasting, a full negative pressure containment must be constructed, including a ceiling of 4-mil poly.

2. All critical barriers must be sealed with one layer of 6-mil poly. Any fixed objects that cannot be moved out of the containment area shall be covered with one layer of 6-mil poly.

3. Contractor shall use a hydro-blasting unit to "power wash" the floors clear of mastic, including any cracks or seams in the concrete slab. This system shall have a man-operated unit that will capture the water with vacuum pressure at the front of the machine as it is operating to prevent the build-up of water in the containment.

4. The hydro-blasting unit shall be set to remove mastic on the substrate surface, cracks, and seams, without damage to the concrete slab. For areas where the top surface layer of the concrete is to be removed, at the direction of the flooring subcontractor(s), the abatement contractor shall set the hydro-blasting unit to remove the surface to a depth specified by the flooring subcontractor(s).

5. The abatement contractor shall anticipate the unit not being able to hydro-blast all areas of the containment (corners, along walls) and shall plan to use alternate methods to remove mastic or the top concrete surface in such areas. Any mechanical means to remove the mastic will need to have HEPA-filtered local exhaust.

6. At the conclusion of the hydro-blasting, the abatement contractor shall clean the floor of the containment using HEPA-vacuums followed by wet-cleaning, and HEPA-vacuuming again to assure that surfaces have been cleaned sufficiently.

7. All poly surfaces, including the ceiling, shall be wet-wiped clean as part of detail cleaning.

8. Contractor shall perform treatment of waste water prior to discharge if water will not be treated as a hazardous waste. Waste water must meet the levels of requirements provided in City of Reno Municipal Code 12.16.565.

9. Contractor shall follow all requirements, including collection of any necessary permits, for the discharge of contaminated water as required by City of Reno Municipal Code 12.16.

10. If abatement contractor will dispose of all water, they shall be responsible for profiling water for disposal. Copies of the waste profile results, along with chain of custody, shall be provided to HMS, Inc. Project Manager prior to disposal.

For the grinding of concrete floor surfaces, the work shall be performed within the same containment erected for floor tile and mastic abatement (as applicable). If areas being ground are not within a contained area (such as non-asbestos floor removal), a negative pressure enclosure shall be constructed as listed in the hydro-blasting section above. In addition to the requirements as noted above, the following engineering controls shall be met by the contractor performing the grinding of floor surfaces.

1. All power equipment to be used for the grinding of concrete floor surfaces shall have an approved shroud system that provides local exhaust.

2. A HEPA-vacuum shall be attached to the shroud system to provide the local exhaust.

3. An airless sprayer or equivalent shall be used to provide water for the suppression of any visible emissions that may be released by the work and to keep surfaces wet prior to cleaning.

4. All slurries or dust remaining within the containment area shall be HEPA-vacuumed cleaned. Additional wet-wiping to assure all dust has been cleaned in the containment area may be required.

Decontamination Requirements

A three stage decon unit including a shower is required for asbestos containments. Each chamber of the decon must have self-closing Z-flaps that seal air tight. A four-inch barrier must exist at the floor of each chamber to prevent the transfer of water and debris from chamber to chamber. This barrier will also provide a seal for the flaps between each chamber. Equipment and bag out chambers do not require a shower, but a washing station must exist and they must be three-stages. The washing station must be constructed in a manner that prevents water from splashing or traveling out of the central decon chamber. Equipment and bag out chambers must also have flaps that seal air tight.

Shower units must be equipped with an overflow pan to catch water which overfills the drain system, or is splashed out of the chamber during employee showers. Showers must be supplied with hot water, soap, shampoo, and towels for the workers. Showers shall be sited in the central decon chamber. Showers and washing station must also be equipped with a filtering system that includes a 0.5 micron filter and heated water. If a filtering system is not available or is not functioning correctly, shower water must be bagged and disposed of as asbestos-containing waste with no extra compensation being given to the Contractor.

All chambers of the decon, including the clean chamber, must be kept clean and dry (except shower) at all times. Abatement work will be stopped if decon is not kept in acceptable condition.

Regulated Area Signage

Asbestos Danger signs shall be posted at all entrances to the containment area, even if the entrance is sealed as a critical barrier. Signs shall also be posted on the flap leading into the shower station of decontamination chambers. Signage will be set once a pre-start visual is passed and work may begin in the containment, but no work will start until all signs are posted.
Signage shall meet the revised requirements set forth in 29 CFR 1926.1101(k)(7).

Air Pressure Differential

Air pressure differential must be established and maintained at -0.05 inches water differential or better before start of abatement and air pressure differential must be maintained through all phases of project, including collection of clearance air samples and receipt of results. A minimum of eight air changes per hour is required for the project. Work will be halted if the air pressure drops below -0.05 inches water differential and can resume when air pressure differential of -0.05 inches is established again.

Air pressure differential must be displayed and recorded on a properly calibrated and fully functioning

manometer. Copies of the manometer recording must be provided by the contractor on 8.5" x 11" paper at completion of project.

All negative air machines must be exhausted to the exterior of the building using wire-reinforced flex duct. All negative air machines must be used inside containment. No machines shall be attached to the exterior of the containment with the intake only inside.

Any exterior barricades need to be constructed of a minimum ½" plywood and lockable for security. Contractor is responsible for providing a lock to any exterior barricades, and keys shall be provided to WCSD site facilities coordinator and District's independent third-party consultant.

Make-Up Air Sources

Available, but may need to be HEPA-filtered. Any make-up holes in critical barriers must be equipped with a challenge/DOP-tested HEPA filter. Placing a pre-filter in the make-up air hole will not be allowed.

Disposal Requirements

All asbestos waste generated on this project will need to be double-bagged in 6-mil poly waste bags. At least one of the waste bags must be sealed in a "gooseneck" fashion. All non-friable debris shall be properly labeled and identified for disposal as an asbestos-containing waste. Materials that have become friable or which removal methods have made friable shall be labeled and identified for disposal as regulated asbestos-containing material (RACM).

The contractor will need to provide a lockable waste bin for all waste created on this project.

Waste bin will need to be labeled with asbestos signage once the waste is loaded into the bin. Waste bins shall be lined with one layer of 6-mil poly prior to waste being loaded.

Waste bins will need to arrive onsite clean of debris or any other waste and in proper functioning order. Waste bins may be rejected by WCSD ES&A staff or District's independent third-party consultant if these conditions are not met, with no extra charge to the District.

Clearance

Upon completion of asbestos abatement activities, a final visual inspection will be performed by either WCSD ES&A staff or District's independent third-party consultant. This inspection will be performed only after the abatement contractor crew supervisor has performed their own final visual clearance. Areas must be free of all three-dimensional material with all surfaces clean of dust and debris and all materials abated within the containment area. Once the containment has been successfully visually inspected and cleared, the Contractor shall apply a lock-down encapsulant to contaminated surfaces in the containment area. The contractor will need to use care to not apply encapsulant to floor surfaces which may prevent adhesion of new flooring materials.

Final clearance shall be through aggressive air sampling conducted by the District's independent third-party

consultant or a District AHERA certified technician. A set of five air samples will be collected inside the containment to be analyzed in accordance with AHERA completion of response action criteria using either phase contrast microscopy (PCM) or transmission electron microscopy (TEM), depending on the quantity of materials abated.

Clearance criteria for PCM sample analysis, in accordance with AHERA, is 0.01 fibers per cubic centimeter (0.01 f/cc) or less for each of the five samples.

Clearance criteria for TEM sample analysis, in accordance with AHERA, is an average of 70 structures per square millimeter (70 s/mm^2) or fewer for the inside-containment set of five samples.

Contractor shall return to the site to remove poly barriers and equipment upon notification of passing clearance air samples. Contractor is also responsible for washing the floor using an approved detergent cleaner and water to provide a clean surface for the new floor installation.

In the event that floor grinding is required to be completed within the same containment area, clearance air samples will be collected at the conclusion of grinding and cleaning of the surfaces within the containment area.

Supplemental Asbestos Abatement Specifications
Washoe County School District
Thermal System Insulation at District Sites

Background

Washoe County School District (WCSD) will be performing the abatement of thermal system insulation (TSI) materials at various District sites. This supplemental spec as well as the District specs will apply to the removal of all asbestos containing Thermal System Insulation. The abatement contractor shall be prepared to abate TSI materials as identified in the site-specific architectural drawings provided for the individual site or information provided prior to bidding.

The contractor will need to note when additional asbestos-containing materials are to be abated within the same containment area and perform that work within the same negative pressure enclosure. The contractor's onsite supervisor, or project estimator during bidding, will need to confer with either WCSD or the District's independent third-party consultant, for the expected containment areas and number of containments at a particular site.

Scope of Work

The contractor awarded the project will be responsible for all costs associated with the abatement of TSI materials.

The project scope shall be determined by the site-specific architectural drawings prepared for the individual site. The Contractor is responsible for reviewing the architectural drawings and the WCSD Regulated Systems and Assessment (ES&A) Material Disturbance Permit to determine which TSI materials in the project area are asbestos-containing and will be required to be abated.

The District has retained an independent third-party abatement consultant to draft these specifications, who may provide oversight during the projects, conduct visual clearance inspections and collect clearance air samples at the conclusion of these abatement projects. All oversight or additional oversight and collection of air samples may be performed by the District's ES&A Department as well at their discretion.

In addition to complying with these supplemental specifications, the Contractor must also comply with all other asbestos abatement requirements listed in these asbestos abatement specifications. If Contractors find any conflicting information in the supplemental specifications, the Contractor must comply with the requirements listed herein that are deemed most stringent by the District or District hired asbestos consultant supervising the abatement.

Project Requirements

Contractor shall be approved by the WCSD ES&A Department to perform asbestos abatement activities within the District. **Approval of firms that have not performed activities impacting asbestos for the District previously, will need to submit all necessary documentation outlined in the WCSD ES&A Technical Specifications for the project at least ten (10) business days prior to work commencing for approval.**

All workers certifications – asbestos training and licensing and medical clearance – shall be submitted to the WCSD ES&A at least five (5) working days prior to project commencement at minimum for approval. Contractor is responsible for reviewing WCSD ES&A worker roster for the company to assure all workers to be used on the project have been approved prior to arrival onsite. Workers not identified on the approved worker list for the contractor will not be allowed to perform any activities onsite, even if documentation is provided onsite at time of the project commencement.

The abatement contractor's onsite supervisor shall have a copy of these Specifications onsite at all times and be familiar with the project requirements prior to arrival onsite at the project. Failure to follow requirements of these Specifications, or lack of knowledge of requirements to be followed during the project, are grounds for replacement of the abatement contractor's onsite supervisor.

Only the abatement contractor will be allowed to occupy the project area once abatement activities are scheduled to start. This applies to all WCSD non-ES&A staff/personnel and site staff/personnel. The area shall only be occupied by the abatement contractor, WCSD ES&A staff, and District's independent third-party abatement consultant. Other personnel will not be allowed to occupy the building during asbestos abatement activities.

Contractor shall adhere to the requirements of these Specifications, WCSD ES&A Technical Specifications, Federal, State, and Local regulations.

Water and Electricity

Water and electricity are available onsite, but long hoses and cords may be necessary. The contractor is responsible for any damage to water or power systems caused by their use of those systems.

Contractor shall provide a GFI at the primary plug-in of all electrical trains used for electrical equipment. Hose washers shall be provided at all hose connections to prevent leakage of water and potential damage to District facilities.

Pre-Cleaning

Pre-cleaning of debris may be required during setup and prior to abatement of TSI.

If required, cleanup will be performed once HVAC is shut down and tagged out by the contractor, with District approval, and critical barriers are sealed with 6-mil poly. Workers performing pre-cleaning will use HEPA-vacuums to vacuum debris and dust from the area. Workers will need to wear half-mask respirator fitted with HEPA (P-100) filters and tyvek quality disposable coveralls with attached hood and boots.

Notifications

Contractor is responsible for timely notifications (including courtesy notifications if applicable) to Nevada Division of Industrial Relations and Washoe County Health Department. Notifications shall be filed in advance of any waiting periods in lieu of the proposed project start date or other requirements for pre-work notification. Any revisions to notifications including project scope, start date, duration of project, or any other changes are

the Contractor's responsibility. Valid notifications shall be posted onsite during the project, and copies shall be provided to the District's onsite third-party consultant and ES&A Department.

Equipment

Contractor is responsible for providing all necessary equipment in sufficient quantities to complete the project in the schedule provided for the project. All equipment must arrive onsite clean and in proper functioning order. Any equipment that arrives onsite dirty or not in proper functioning order shall be removed from the project site for cleaning and/or repairs.

Training

Workers performing asbestos abatement activities as part of this project must have AHERA Worker training with at least one worker trained to the AHERA Contractor-Supervisor level. All workers shall be licensed by the Nevada DIR for asbestos work. The crew lead Contractor-Supervisor may not leave the site anytime asbestos abatement operations are being performed.

As noted previously, all workers certifications must be approved by the WCSD ES&A prior to arrival onsite to start work. Copies of the worker certs shall be provided to the District's onsite third-party consultant as well.

Personal Protection Equipment

A tight-fitting powered air-purifying respirator (PAPR) fitted with HEPA filters shall be worn for respiratory protection when performing TSI abatement.

A full facepiece, supplied-air respirator operated in the pressure-demand mode shall be worn by workers performing Class 1 work if the negative exposure assessment, or air sampling performed by ES&A or the District's third-party consultant, indicates that the exposure level will be above 1 f/cc as an 8-hour TWA.

Workers shall wear Tyvek-level disposable coveralls, hard hats, and work gloves. Street clothes may not be worn under disposable coveralls.

All employees shall have a valid medical clearance and fit test for respirators to be used. Medical clearance shall be provided for approval to the WCSD ES&A prior to the project commencement. Copies of the medical clearance and fit test shall be provided to the District's onsite third-party consultant as well.

Personal Air Monitoring

The contractor is responsible for the collection of personal air samples on workers during all abatement activities for asbestos. These samples shall be collected in accordance with OSHA sampling protocols and analyzed by a laboratory with the proper accreditation.

Laboratories to be used for personal air sample analysis must be approved by WCSD ES&A.

Copies of the personal air sampling results, along with laboratory accreditation, shall be submitted to the WCSD ES&A and District's independent third-party consultant.

In addition, the contractor will comply with all requirements regarding personal air monitoring listed in Section 02130, Part 2- - Air Monitoring, 2.02.

Security and Safety

The contractor is responsible for security of all equipment and safety of all employees. Contractor shall provide any storage containers or security needed for tools and equipment if needed.

Contractor is responsible for any ladder, scaffolding, or any other worker safety measures needed to facilitate the TSI abatement as required by state or Federal regulation.

Contractor is responsible for all worker safety and following all applicable regulations, namely Nevada and Federal OSHA.

Occupancy

As noted previously, the project area will be limited to the abatement contractor, WCSD ES&A staff, and District's independent third-party consultant once abatement activities are ready to commence. Once the area has been cleared, other parties may occupy.
Emergency services may also occupy areas in the event of an emergency during the project.

Challenge Testing

All HEPA-filtered equipment to be used on this project shall have been challenge tested (DOP or equivalent) within the previous 30 days prior to use onsite. Copies of the challenge testing results shall be provided to the WCSD ES&A and/or HMS, Inc.

Asbestos Abatement Containment and Abatement Requirements

ALL POLY USED ON PROJECT SHALL BE 6-MIL AND FIRE-RETARDANT UNLESS EXEMPTED IN REQUIREMENTS BELOW.

1. The Contractor shall develop a regulated area that meets the requirements of OSHA regarding posting and limited access.

2. The Contractor shall follow the procedures recommended by the manufacturer of the glovebags, and the specifications required by OSHA regulations.

3. All critical openings within the regulated area shall be sealed prior to set up of the containment using two layers of 6 mil poly.

4. At least one layer of 6 mil poly must be used to contain the abatement area, including ceiling. Two layers of 6 mil poly shall be placed on the floor of the containment. The bottom layer of floor poly must be black to assist with visual clearance.

5. Stationary objects in the immediate area of the room which cannot be removed from the work area must be covered with at least one layer of 6 mil poly sheeting after being pre-cleaned.

6. A minimum three stage decontamination unit with a shower shall be contiguous with the containment. See “Decontamination Chamber Requirements” in this specification for further requirements.

7. Negative pressure shall be established and a recording manometer shall be attached to the containment. Copies of the manometer recordings shall be provided on 8.5”x11" paper by the Contractor.

8. A HEPA-filtered vacuum shall be in the immediate area for use in conjunction with the bags or in case of a spill.

9. Glovebags may not be used on surfaces where temperatures exceed 150 degrees Fahrenheit.

10. Glovebags will be utilized only used inside of a full negative pressure containment.

11. Glovebags may be used only once, and may not be moved or slid for removal of a second section of TSI.

12. At least two persons shall perform glovebag removal.

13. Before beginning the operation, loose and friable material adjacent to the glovebag operation shall be wrapped and sealed in two layers of 6 mil poly sheeting or otherwise rendered intact using encapsulating cloth.

14. The Contractor shall apply a sufficient volume of amended water to wet all pipewrap removed from the pipes while it is enclosed in the glovebag.

15. Prior to placement in the disposal bag, glovebags shall be collapsed by removing air within them using a HEPA-vacuum.

16. Upon detachment, the glovebag must be immediately placed into a 6 mil thick disposal bag. The disposal bags must be sealed using the "gooseneck" sealing technique. Waste bags shall be properly labeled as a regulated asbestos containing waste.

17. Where pipes enter walls, floors, or ceilings which are not within the scope of the project, the pipewrap shall be removed at least 1" into the structure and the pipewrap end must be sealed with bridging encapsulant and/or wettable cloth.

18. The Contractor shall be responsible for ensuring the piping system remains adequately supported at all times. This may be achieved by readjusting existing hanger brackets as insulation is removed, or by other approved methods, such as inserting wood blocks to replace the thickness of the removed insulation.

Decontamination Requirements

A three stage decon unit including a shower is required for asbestos containments. Each chamber of the decon must have self-closing Z-flaps that seal air tight. A four-inch barrier must exist at the floor of each chamber to prevent the transfer of water and debris from chamber to chamber. This barrier will also provide a seal for the flaps between each chamber. Equipment and bag out chambers do not require a shower, but a washing station must exist and they must be three-stages. The washing station must be constructed in a manner that prevents water from splashing or traveling out of the central decon chamber. Equipment and bag out chambers must also have flaps that seal air tight.

Shower units must be equipped with an overflow pan to catch water which overfills the drain system, or is splashed out of the chamber during employee showers. Showers must be supplied with hot water, soap, shampoo, and towels for the workers. Showers shall be sited in the central decon chamber. Showers and washing station must also be equipped with a filtering system that includes a 0.5 micron filter. If filtering system is not available or is not functioning correctly, shower water must be bagged and disposed of as asbestos-containing waste.

All chambers of the decon, including the clean chamber, must be kept clean and dry (except shower) at all times. Abatement work will be stopped if decon is not kept in acceptable condition.

Regulated Area Signage

Asbestos Danger signs shall be posted at all entrances to the containment area, even if the entrance is sealed as a critical barrier. Signs shall also be posted on the flap leading into the shower station of decontamination chambers. Signage will be set once a pre-start visual is passed and work may begin in the containment, but no work will start until all signs are posted.

Signage shall meet the revised requirements set forth in 29 CFR 1926.1101(k)(7).

Air Pressure Differential

Air pressure differential must be established and maintained at -0.05 inches water differential or better before start of abatement and air pressure differential must be maintained through all phases of project, including collection of clearance air samples and receipt of results. A minimum of eight air changes per hour is required for the project. Work will be halted if the air pressure drops below -0.05 inches water differential and can resume when air pressure differential of -0.05 inches is established again.

Air pressure differential must be displayed and recorded on a properly calibrated and fully functioning manometer. Copies of the manometer recording must be provided by the contractor on 8.5" x 11" paper at completion of project.

All negative air machines must be exhausted to the exterior of the building using wire-reinforced flex duct. All negative air machines must be used inside containment. No machines shall be attached to the exterior of the containment with the intake only inside.

Any exterior barricades need to be constructed of a minimum ½" plywood and lockable for security. Contractor is responsible for providing a lock to any exterior barricades, and keys shall be provided to WCSD site facilities coordinator and HMS, Inc. Project Manager.

Make-Up Air Sources

Available, but may need to be HEPA-filtered. Any make-up holes in critical barriers must be equipped with a challenge/DOP-tested HEPA filter. Placing a pre-filter in the make-up air hole will not be allowed.

Disposal Requirements

All asbestos waste generated on this project will need to be double-bagged in 6-mil poly waste bags, or double-wrapped in 6-mil polyethylene sheeting. All waste bags must be sealed in a "gooseneck" fashion. All waste shall be properly labeled and identified for disposal as a regulated asbestos-containing material (RACM).

The contractor will need to provide a lockable waste bin for all waste created on this project.Waste bin will need to be labeled with asbestos signage once the waste is loaded into the bin. Waste bins shall be lined with one layer of 6-mil poly prior to waste being loaded.

Waste bins will need to arrive onsite clean of debris or any other waste and in proper functioning order. Waste bins may be rejected by WCSD ES&A staff or District's independent third-party consultant if these conditions are not met, with no extra charge to the District.

Clearance

Upon completion of asbestos abatement activities, a final visual inspection will be performed by either WCSD ES&A staff or District's independent third-party consultant. This inspection will be performed only after the abatement contractor crew supervisor has performed their own final visual clearance. Areas must be free of all three-dimensional material with all surfaces clean of dust and debris and all materials abated within the containment area.

Final clearance shall be through aggressive air sampling conducted by the District's independent third-party consultant. A set of five air samples will be collected inside the containment to be analyzed in accordance with AHERA completion of response action criteria using either phase contrast microscopy (PCM) or transmission electron microscopy (TEM), depending on the quantity of TSI abated.

Clearance criteria for PCM sample analysis, in accordance with AHERA, is 0.01 fibers per cubic centimeter (0.01 f/cc) or less for each of the five samples. Clearance criteria for TEM sample analysis, in accordance with AHERA, is an average of 70 structures per square millimeter (70 s/mm^2) or fewer for the inside-containment set of five samples.

Contractor shall return to the site to apply a lock-down encapsulant, remove poly barriers and equipment upon notification of passing clearance air samples.

BID FORM

Washoe County School District - Purchasing Department
14101 Old Virginia Road - Reno, Nevada 89521
Phone: 775-850-8025 Email: solicitations@washoeschools.net

Bid #: 25-111-B-05-DA
PWP #: WA-2025-378

Having carefully examined all of the Bid Specifications entitled **Mechanical Upgrades at Jerry Whitehead Elementary School,** dated May 21, 2025; and the Drawings dated April 16, 2025; the addenda numbered _____; as well as the premises and the conditions affecting the work, the undersigned proposes to furnish for the stipulated sum of:

ITEM	DESCRIPTION	AMOUNT
A.	BASE BID 1	$
B.	FORCE ACCOUNT	$540,000.00
C.	**TOTAL – BASE BID 1 AND FORCE ACCOUNT (The Sum of Box A + Box B)**: All labor and materials for the **MECHANICAL UPGRADES AT JERRY WHITEHEAD ELEMENTARY SCHOOL** as drawn and specified, the sum of _____ _____Dollars ($_____).	

If there is a mathematical error between the Base Bid amount and the Force Account amount and the total of those two items added together, the Base Bid amount will govern.

Any bid submission will be disqualified and rejected if the bid submission is not signed.

Bids shall be submitted on the provided Bid Form (PUR-F523) only, and all of the blank spaces shall be completed; numbers shall be stated both in writing and in figures, the signature shall be in longhand; and the completed form shall be without interlineation, alteration or erasure. Washoe County School District only accepts signatures done manually (also known as a wet signature) or electronic digital signatures that are certified. Non-certified electronic digital signatures will NOT be accepted. A typed signature, even in cursive font, DOES NOT meet the requirements of an official digital signature. A digital signature must be accompanied by a certified digital stamp issued through programs like Adobe Acrobat, Docu-Sign or other similar programs that produce a digital stamp certifying the electronic digital signature. Any signatures on required forms that do not meet these requirements will not be accepted and the Contractor's submission will be deemed "Non-Responsive" and will be rejected. If you have any questions about this requirement, please submit your question by the question deadline, so that it can be answered prior to quote submission deadline. In the event of a discrepancy on the Bid Form, NRS 104.3114 Contradictory terms of instrument states that, "If an instrument contains contradictory terms, typewritten terms prevail over printed terms, handwritten terms prevail over both, and WORDS PREVAIL OVER NUMBERS." **WCSD will record the bid amount stated in WORDS in Box C**. Only bids on the form(s) provided will be accepted. No additional pages containing

inclusions, exclusions or clarifications will be accepted as part of the bid. Any clarifications, additions or exclusions made by the Washoe County School District (WCSD/ OWNER) will be considered incorporated into the specifications.

Bidder shall proofread his/her bid carefully for errors.

WCSD reserves the right to award the bid for the best proposal for each individual item or to award on the best total proposal, whichever is deemed by the Owner to be in their best interests. WCSD also reserves the right to reject any or all bids and to waive irregularities or informalities in any bid for any reason whatsoever.

If they be notified of the acceptance of this proposal within forty-five (45) days of the time set for opening of bids, Contractor agrees to execute a contract for the above work for the above-stated compensation in the form of the contract attached within these bid specifications and to commence the physical work no fewer than ten (10) days after the execution thereof.

The undersigned agrees, if awarded the contract, work is to be commenced as phased in the Special Notifications and shall be completed on or before August 1, 2026. The commencement date for the physical work shall be coordinated by the Capital Projects Department upon the receipt of said Notice to Proceed. The undersigned further agrees that the Owner may retain from the monies due the Contractor Two Thousand Five Hundred Dollars ($2,500) per day as a direct result of the Contractor's delay for not completing the project in the required time allowance plus approved time extensions.

The undersigned agrees, if awarded the contract, to execute and deliver to the Owner, within ten (10) calendar days after delivery of notice of award of contract, an executed contract, satisfactory insurance, a performance bond for each awarded contract, and a labor & materials bond for each awarded contract in accordance with the specifications.

Enclosed is a bid bond or other surety in the amount of five percent (5%) of each total proposal (must be provided for each individual base bid item), as required in the Instructions to Bidders.

Enclosed, on the attached form, is a complete listing of the names of each subcontractor who will provide labor or a portion of the work or improvement to the prime contractor for which the subcontractor will be paid equal to or exceeding 5 percent of the prime contractor's total bid. The prime Contractor shall also add his/her name if they are performing any portion of work, including supervision, equal to or exceeding 5 percent of the total bid.

Within two (2) hours after the completion of the opening of the bids, the contractors who submitted the three lowest bids must submit on the form attached a list of each subcontractor who will provide labor or a portion of the work or improvement to the prime contractor for which they will be paid an amount equal to or exceeding 1 percent of the prime contractor's total bid or $50,000, whichever is greater, and the number of the license issued to the subcontractor pursuant to chapter 624 NRS. If a prime contractor fails to submit such a list within the required time, their bid shall be deemed not responsive.

I have read and acknowledge that our company is in compliance with all WCSD Drug & Alcohol Requirements specified in Section 00800 – Supplementary General Conditions.

NOTE: **Any bid submission will be disqualified and rejected if the bid submission is not signed.** Washoe County School District only accepts signatures done manually (also known as a wet signature) or electronic digital signatures that are certified. Non-certified electronic digital signatures will NOT be accepted. A typed signature, even in cursive font, DOES NOT meet the requirements of an official digital signature. A digital signature must be accompanied by a certified digital stamp issued through programs like Adobe Acrobat, Docu-Sign or other similar programs that produce a digital stamp certifying the electronic digital signature. Any signatures on required forms that do not meet these requirements will not be accepted and the Contractor's submission will be deemed "Non-Responsive" and will be rejected. If you have any questions about this requirement, please submit your question by the question deadline, so that it can be answered prior to bid submission deadline.

Interested parties may NOT contact anyone else regarding this solicitation. Any interested Bidder contacting any other individual including, but not limited to, WCSD staff, officials, evaluation committee members, or Board of Trustees may have their Bid submission rejected from evaluation and award consideration.

BID #: 25-111-B-05-DA

FIRM NAME:	NEVADA LICENSE #:
NAME OF AUTHORIZED REPRESENTATIVE:	
ADDRESS:	
PHONE #:	FAX #:
EMAIL ADDRESS:	DATE:
SIGNATURE:	

5% LIST

To be submitted with the bid in accordance with Article 5.2.1 of the General Conditions as modified and Chapter 338.141 of NRS. **If the Prime Contractor is performing any work, including Supervision, that is 5% or greater they must list themselves per NRS 338.**

PROJECT NAME: **MECHANICAL UPGRADES AT JERRY WHITEHEAD ELEMENTARY SCHOOL**

BID #: **25-111-B-05-DA**

DESCRIPTION OF WORK	SUBCONTRACTOR	LICENSE #

Signature: _____
Authorized Firm Representative

Title: _____ Date: _____

1% LIST

To be submitted within two (2) hours after bid opening in accordance with Chapter 338.141 of NRS. Since all Subcontractors listed on the Bidder's 5% List are over 1% of the Bid amount, those Subcontractors shall automatically be deemed incorporated into this 1% List and need not be re-listed below. **If there are no further Subcontractors to list, please write "NONE or "N/A" and sign document.**

PROJECT NAME: **MECHANICAL UPGRADES AT JERRY WHITEHEAD ELEMENTARY SCHOOL**

BID #: **25-111-B-05-DA**

DESCRIPTION OF WORK	SUBCONTRACTOR	LICENSE #

Signature: _____
Authorized Firm Representative

Title: _____ Date: _____

PREFERENTIAL BIDDER STATUS AFFIDAVIT FOR BIDS SUBMITTED IN ACCORDANCE WITH NRS 338.0117 VALUED $250,000 OR MORE

Although Washoe County School District prefers this form is submitted with the bid response, this form may be submitted within two (2) hours of the bid opening.

Note: The Certificate of Eligibility for Preferential Bidder Status issued by the State Contractor's Board must be submitted with the bid response.

I, _____ ("Affiant"), on behalf of _____ ("Contractor"), swear and affirm that in order to be in compliance with NRS 338.0117, and be eligible to receive a preference in bidding for Project No._____, Project Name _____ ("Project"), certify that for the duration of the project, collectively, and not on any specific day:

(a) At least 50 percent of the workers employed on the public work, including, without limitation, any employees of the contractor, applicant or design-build team and of any subcontractor engaged on the public work, will hold a valid driver's license or identification card issued by the Department of Motor Vehicles of the State of Nevada;

(b) All vehicles used primarily for the public work will be:

(1) Registered and partially apportioned to Nevada pursuant to the International Registration Plan, as adopted by the Department of Motor Vehicles pursuant to NRS 706.826; or

(2) Registered in this State;

(c) If applying to receive a preference in bidding pursuant to subsection 3 of NRS 338.1727 or subsection 2 of NRS 408.3886, at least 50 percent of the design professionals working on the public work, including, without limitation, employees of the design-build team and of any subcontractor or consultant engaged in the design of the public work, will have a valid driver's license or identification card issued by the Department of Motor Vehicles of the State of Nevada; and

(d) The contractor, applicant or design-build team and any subcontractor engaged on the public work will maintain and make available for inspection within this State his or her records concerning payroll relating to the public work.

If the contractor fails to comply with any requirements of this Affidavit, a public body may recover, by civil action against the party responsible for a failure to comply with a requirement of this affidavit, a penalty as described below for a failure to comply with a requirement of this affidavit. If a public body recovers a penalty pursuant to this subsection, the public body shall report to the State Contractors' Board the date of the failure to comply, the name of each entity which failed to comply and the cost of the contract to which the entity that failed to comply was a party. The Board shall maintain this information for not less than 6 years. Upon request, the Board shall provide this information to any public body or its authorized representative.

If a contractor, applicant or design-build team submits this affidavit, receives a preference in bidding described in this affidavit and is awarded the contract as a result of that preference, the contract between the contractor, applicant or design-build team and the public body, each contract between the contractor, applicant or design-build team and a subcontractor and each contract between a subcontractor and a lower tier subcontractor must provide that:

a) If a party to the contract causes the contractor, applicant or design-build team to fail to comply with a requirement of this affidavit, the party is liable to the public body for a penalty in the amount of 1 percent of the cost of the largest contract to which he or she is a party;

b) The right to recover the amount determined pursuant to paragraph (a) by the public body pursuant to this affidavit may be enforced by the public body directly against the party that caused the failure to comply with a requirement of this affidavit; and

c) No other party to the contract is liable to the public body for a penalty.

By:_____ Title:_____
(Print Name of Affiant)

Signature of Affiant: _____ Date: _____

Signed and sworn to (or affirmed) before me on this _____ day of _____, 20_____, by_____ (name of Affiant).

State of _____)
)ss.
County of _____)

_____
Notary Signature
STAMP & SEAL

Proof of Authorization to Sign Affidavit

The person must establish his/her actual authority to act on behalf of the business organization. The individual must be the person indicated in the table below and provide written documentation clearly indicating the person's position within that business organization. If the individual signing the Affidavit is an employee of the business organization, written documentation, on organization letterhead, clearly indicating the person's authority to act on behalf of the business organization must be provided. The written documentation must be signed by the authorized person identified on the table.

If the individual making application for the business organization is not one of the persons identified in the table or an authorized employee, a valid power of attorney executed by an authorized person on behalf of the business organization must be provided. The power of attorney must be made not more than 90 days before the Affidavit is signed.

BUSINESS ENTITY	PERSON WHO HAS AUTHORITY TO COMPLETE AFFIDAVIT
Sole Proprietorship	Sole Proprietor
Partnership	A Partner
Corporation	1. Director, if Authorized 2. Executive Officer as indicated in the Article of Incorporation
Limited Liability Company	1. Member, if Member-Managed LLC 2. Manager, if Manager-Managed LLC

WASHOE COUNTY SCHOOL DISTRICT PUBLIC DISCLOSURE FORM

VENDOR/CONTRACTOR

THIS IS A REQUIRED FORM TO BE COMPLETED, SIGNED, AND SUBMITTED BY THE VENDOR/CONTRACTOR

VENDOR/CONTRACTOR (EMPLOYEE) FIRST/LAST NAME: _____

VENDOR/CONTRACTOR NAME: _____

I understand that per NRS 281A.020, a public office is a public trust and shall be held for the sole benefit of the people, and a public officer or employee must commit themself to avoid conflicts between the private interests of the public officer or employee and those of the general public whom the public officer or employee serves.

Furthermore, I understand that pursuant to Washoe County School District (WCSD) Board of Trustees Policy 4505 and per NRS 281A.400, WCSD employees (as public officers) shall not seek and/or accept any gift, work/service, favor, employment, engagement, emolument, and/or economic opportunity, including, but not limited to, unlawful compensation, salary, retainer, augmentation, expense allowance, commission, personal profit, pecuniary interest in the course of performing WCSD duties. In addition, WCSD employees (as public officers) shall not use their positions to secure and/or grant unwarranted privileges, preferences, exemptions, and/or advantages for the public officer or employee with any business entity.

By signing this form, I certify and acknowledge that I am a duly authorized agent of the VENDOR/CONTRACTOR named above and that failure to disclose all facts relative to a conflict and/or potential conflict of interest (ethical standards) with regard to the specific solicitation, project, and/or contract to which the VENDOR/CONTRACTOR named above is submitting to WCSD may result in a rejection of said solicitation, project, and/or submission and/or termination of any resulting contract should the above-named VENDOR/CONTRACTOR be selected and/or awarded. Furthermore, I also certify that I have completed the following and have provided true and accurate information to the best of my knowledge:

A. I certify that, to the best of my knowledge, **NO** current or former WCSD employees, officers, or trustees have a private pecuniary interest in the VENDOR/CONTRACTOR. ☐ **AGREE** ☐ **DISAGREE**

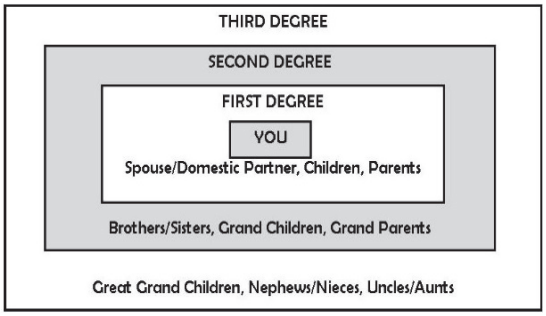
If you DISAGREE and cannot certify, then please explain:

_____
_____
_____

B. To the third degree of consanguinity (refer to the chart below), I have listed all of my and the principal(s) and key personnel of my organization's personal relationships, partnerships, correlations, and relatives (by blood and/or marriage) between WCSD, Officers of WCSD, key employees of WCSD, current and former WCSD Board of Trustees members and any other current and former WCSD personnel. ☐ **AGREE** ☐ **DISAGREE**

If you DISAGREE and cannot certify, then please explain:

_____
_____
_____



SIGNATURE: _____ **DATE**: _____

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____, as Principal, and _____ as Surety, are hereby held and firmly bound unto the Board of Trustees, Washoe County School District, as Owner, in the sum of _____ _____ Dollars ($_____) for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____ day of _____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to the Board of Trustees, Washoe County School District, a certain bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing for: _____ _____.

NOW, THEREFORE, if said bid shall be rejected, or in the alternative, if said bid shall be accepted and the Principal shall execute and deliver a Contract in the form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a Bond for its faithful performance of said Contract, and a Bond for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the contract created by the acceptance of said Bid, then this obligation shall be void.

Otherwise, the same shall remain in force and effect, and the sum herein specified paid over to the Owner; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within

which the Owner may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their officers, the day and year first set forth above.

_____

_____

Principal

(Seal) By: _____

_____

Surety

By: _____

Address:

(Seal)

_____

_____

_____

Phone: _____

LABOR AND MATERIALS BOND

KNOW ALL PERSONS BY THESE PRESENTS: That WHEREAS, the Board of Trustees, Washoe County School District in the State of Nevada has awarded to_____, hereinafter designated as “Principal”, a contract dated _____, for _____ _____ a copy of which contract is attached hereto and by reference made a part hereof, and hereinafter referred to as the “Contract”.

And WHEREAS, said Principal is required under the terms of said Contract and by law under the provisions of N.R.S. 339 to furnish a Bond for the labor and materials used in said Contract;

NOW, THEREFORE, we, the Principal, and _____ _____, as Surety, are held and firmly bound unto the Board of Trustees, Washoe County School District in the State of Nevada in the sum of _____ 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 will 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-bounden Principal, or its heirs, executors, administrators, successors or assigns shall fail to pay for any materials, provisions, 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 N.R.S. 339, the Surety hereon will pay for the same within thirty (30) calendar days an amount not exceeding the sum specified in this bond, and the above obligation shall then be null and void. Otherwise, it shall remain in full force and virtue.

THE 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 to the specifications accompanying the same, shall in any way affect 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 or to the work, or to the specifications.

And the said Surety, for value received, further stipulates and agrees that should the Board of Trustees, Washoe County School District, or other obligees, incur attorney's fees or other expenses for the enforcement of the Contract or this bond, the same shall be paid by the Surety to the contracting body, subcontractors, workmen laborers, mechanics and furnishers of material as their interests may appear.

IN WITNESS WHEREOF, the above-bounded 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

(Seal) By: _____

_____
Surety

By: _____

Address:

(Seal)

_____

_____

_____

Phone: _____

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: That WHEREAS, the Board of Trustees, Washoe County School District in the State of Nevada has awarded to _____,
Hereinafter designated as “Principal”: a contract dated _____,
for _____
_____
a copy of which contract is attached hereto and by reference made a part hereof, and hereinafter referred to as the “Contract”.

And WHEREAS, said Principal is required under the terms of said Contract and by law under the provisions of N.R.S. 339 to furnish a Bond for the faithful performance of said Contract;

NOW, THEREFORE, we, the Principal, and _____
_____, as Surety, are held and firmly bound unto the Board of Trustees, Washoe County School District in the State of Nevada in the sum of
_____
Dollars ($_____), lawful money of the United States, being no less than one hundred per cent (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 bounden Principal, or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by and well and truly keep the faithfully perform the covenants, conditions, and agreements in the Contract and any alterations made as therein provided, on his or its part to be kept and performed at the respects according to their true intent and meaning; and shall indemnify and save harmless the Board of Trustees, Washoe County School District 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 Contract, the above obligation shall hold good for a period of one (1) year after completion and acceptance of the work done, 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 Board of Trustees, Washoe County School District 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 work, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligation in the said sum of _____ Dollars ($_____) shall remain in full force and virtue; otherwise, the above obligation shall be void.

THE 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 to the specifications accompanying the same, shall in anyway affect 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, or to the work, or to the specifications.

And the said Surety, for value received, further stipulates and agrees that should the Board of Trustees, Washoe County School District, incur attorney's fees or other expenses for the enforcement of the Contract or his/her bond, the same shall be paid by the Surety to the Board of Trustees, Washoe County School District.

IN WITNESS WHEREOF, the above-bounden 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

(Seal)

By: _____

_____

Surety

By: _____

Address:

(Seal)

_____

_____

_____

Phone: _____

SECTION 01001 – CONSTRUCTION PROCEDURES FOR EXISTING SCHOOL SITES

PART 1 – GENERAL

1.1 DESCRIPTION

A. All work activities under this contract shall be coordinated with the requirements of the Washoe County School District's (WCSD) Facilities Management Department. WCSD shall be contacted prior to any service shutdown and advised when such shutdown shall be commenced. All materials and equipment shall be stored in spaces assigned by WCSD. The Contractor will be required to maintain a neat and orderly operation and to limit or keep noise and nuisance to a minimum.

B. WCSD reserves the right to remove any person from the property for the safety and security of the facility

1.2 GENERAL REQUIREMENTS FOR WORK INSIDE THE EXISTING PERIMETER AND EXISTING BUILDINGS

A. It is a felony to transport any alcoholic beverages, drugs, weapons or ammunition of any kind on WCSD property

B. Any contact or conversation with students is prohibited.

C. Smoking is prohibited on all WCSD property.

D. Working hours inside the existing perimeter and existing building will be coordinated with WCSD.

E. Storage of materials inside the existing perimeter and buildings will be coordinated with WCSD Facilities Management Department.

F. Construction operations shall be confined to the areas permitted under the contract. Areas beyond indicated work areas are not to be disturbed. Conform to site rules and regulations affecting the work.

G. Keep driveways and entrances serving the premises clear and available at all times. Do not use these areas for parking or storage of materials.

H. Passenger cars, trucks and motorized construction equipment, when parked and unattended, shall be locked and the ignition key removed. Do not leave any such vehicle with the motor running.

I. Limitations on site usage, as well as specific requirements that impact site utilization are indicated on the drawings and any other contract documents. Allocate available space equitably among sub-contractors needing both access and space so as to produce the best overall efficiency. Schedule deliveries to minimize space and time requirements for storage of materials and equipment.

J. All refuse will be removed daily.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01001

SECTION 01010 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all contract documents and addendums associated with this project shall apply to this section.

1.2 PROJECT DESCRIPTION

A. Project to entail work as described in scope of work.

B. The project shall consist of all on and off-site improvements, as shown in the contract documents.

1.3 CONTRACTOR USE OF PREMISES

A. General: During the construction period the Contractor shall have full use of the premises (construction area) for construction operations. The Contractor's use of the premises (construction area) is limited only by the Owner's right to perform construction operations with its own forces or to employ separate contractors on portions of project.

B. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment site.

1.4 OWNER OCCUPANCY

A. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building, prior to substantial completion provided that such occupancy does not interfere with completion of the work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total work.

1.5 OWNER FURNISHED ITEMS

A. The Owner will provide certain pieces of equipment and accessories that are to be installed and connected by the Contractor.

1. The Owner will arrange and pay for delivery of Owner furnished items in accordance with the Contractor's construction schedule, and will inspect deliveries for damage.

2. If Owner furnished items are damaged, defective or missing, the Owner will arrange for replacement. The Owner will also arrange for manufacturer's field

services and the delivery of manufacturer's warranties and bonds to the Contractor.

3. The Contractor is responsible for designating the delivery dates of Owner furnished items in the Contractor's construction schedule and for receiving, unloading and handling Owner furnished items at the site. The Contractor is responsible for protecting Owner furnished items from damage, including damage from exposure to the elements, and to repair or replace items damaged as a result of the Contractor's operations.

4. Owner furnished and Contractor installed and connected equipment shall be as indicated in the contract documents.

END OF SECTION 01010

SECTION 01015 – SCHEDULE OF DRAWINGS

CS COVER SHEET

A0.0 ARCHITECTURAL COVER SHEET
A0.1 SHEET SPECIFICATIONS
A0.2 SHEET SPECIFICATIONS
A1.0 SITE PLAN
A1.1 ENLARGED SITE PLAN OVERALL FLOOR PLAN
A2.1 ENLARGED FLOOR PLAN
A2.2 ENLARGED FLOOR PLANS
A2.3 REFLECTED CEILING PLAN
A3.0 PUMP HOUSE FOUNDATION, FLOOR & ROOF PLAN & BUILDING SECTION
A3.1 PUMP HOUSE & SCREEN WALL ELEVATIONS & NOTES
A4.0 DETAILS
A4.1 DETAILS
A4.2 SECTIONS AND DETAILS
A4.3 DETAILS
A5.0 ROOF PLAN
A6.0 STRUCTURAL SPECIFICATIONS

M0.1 MECHANICAL LEGEND & SCHEDULES
M1.1 MECHANICAL DEMOLITION ROOF PLAN
M1.2 MECHANICAL DEMOLITION ROOF PLAN
M1.3 MECHANICAL DEMOLITION FLOOR PLAN
M1.4 MECHANICAL DEMOLITION FLOOR PLAN
M2.0 OVERALL MECHANICAL SITE PLAN
M2.1 MECHANICAL ROOF PLAN
M2.2 MECHANICAL ROOF PLAN
M2.3 MECHANICAL FLOOR PLAN
M2.4 MECHANICAL FLOOR PLAN
M3.1 ENLARGED MECHANICAL FLOOR PLAN
M3.2 ENLARGED MECHANICAL PLAN & PIPING DIAGRAM
M5.1 MECHANICAL DETAILS
M5.2 MECHANICAL CONTROLS
M5.3 MECHANICAL CONTROLS
M5.4 MECHANICAL CONTROLS
M5.5 MECHANICAL CONTROLS
M5.6 MECHANICAL CONTROLS
M5.7 MECHANICAL CONTROLS
M5.8 MECHANICAL CONTROLS
M5.9 MECHANICAL CONTROLS

P0.1 PLUMBING LEGEND, SCHEDULES & DETAILS
P1.1 PLUMBING DEMOLITION ROOF PLAN
P1.2 PLUMBING DEMOLITION ROOF PLAN
P1.3 PLUMBING DEMOLITION FLOOR PLAN
P1.4 PLUMBING DEMOLITION FLOOR PLAN

P2.1 PLUMBING ROOF PLAN
P2.2 PLUMBING ROOF PLAN
P2.3 PLUMBING FLOOR PLAN
P2.4 PLUMBING FLOOR PLAN
P3.1 ENLARGED PLUMBING PLANS

E0.1 ELECTRICAL LEGEND AND DRAWING SCHEDULE
E0.2 ELECTRICAL SPECIFICATIONS
E0.3 ONELINE DIAGRAM
E0.4 PANEL SCHEDULES
E1.0 ELECTRICAL SITE PLAN
E1.1 OVERALL ELECTRICAL DEMOLITION PLAN
E2.1 OVERALL ELECTRICAL PLAN
E2.2 ROOF ELECTRICAL PLAN
E3.1 ENLARGED CHILLER ELECTRICAL PLANS

PART 1 -GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for submittals required for performance of the work for all entities/individuals including, but not limited to, the following:

1. General Contractor
2. Sub-Contractor
3. Sub-Contractor of Sub-Contractor
4. Quality Control Personnel
5. Special Inspection Personnel
6. Security Personnel
7. Consultant Personnel

B. Administrative Submittals: Refer to other Division 1 sections and other Contract Documents for requirements for administrative submittals.

1.3 SUBMITTAL PROCEDURES

A. Required Submittals

1. Each company, engaged on a project, shall report to the Washoe County School District all required certifications for every employee who will be on a Washoe County School District site. This includes all personnel whom the Contractor engages for work on the project site as defined in 1.2 (A). This information must be submitted within twenty-one (21) calendar days prior to commencement of work by the Contractor, and any sub-contractor, regardless of tier. Such submittals required include:

a. Certification by Company Regarding Personnel Safety Check Application.

PART 2- PRODUCTS (Not Applicable)

PART 3- EXECUTION (Not Applicable)

CERTIFICATION BY COMPANY REGARDING PERSONNEL SAFETY CHECK APPLICATION

Washoe County School District – Capital Improvement Projects

I certify on behalf of the company/firm named below that adequate background check procedures have been or will be performed for all employees that will work on Washoe County School District project _____ (Project Name) regarding _____ (Company/Firm Name) to determine that their employees meet the qualifications required by the Washoe County School District.

With this certification, I confirm that:

- All employees working on a Washoe County School District project shall not have been arrested, convicted, pled guilty, or pled nolo contender for any offenses related to:
  - Sexual assault or sexual activities with a minor
  - Child abuse
  - Felony drug possession
  - Felony weapons possession
- All employees working on a Washoe County School District project shall not:
  - Have any active Wants/Warrants
  - Is a Registered Sex Offender
  - Is on a Terrorist list.

I understand that the Washoe County School District maintains the right to remove any individuals from the project who do not comply with the above requirements.

I certify the information provided on this application is true, complete, and correct to the best of my knowledge and belief and is provided in good faith. I understand that a knowing and willful false statement on this application can be an automatic disqualification.

I hereby release, discharge, exonerate and hold harmless the Washoe County School District, its agents and representatives and persons furnishing information from any and all liability arising out of the disseminating and inspection of my records.

_____

Company/Firm Name

_____ _____

Name of Executive Officer Title

_____ _____

Signature Date

SECTION 01027 – APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

B. Related Sections: The following sections contain requirements that relate to this section.

1. Schedules: The Contractor's Construction Schedule and Submittal Schedule are specified in SECTION 01300 - SUBMITTALS.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Contractor's Construction Schedule
b. Application for Payment forms, including continuation sheets
c. List of all tier Sub-Contractors
d. List of products
e. List of principal suppliers and fabricators
f. Schedule of Submittals
g. Schedule of Allowances
h. Schedule of Alternates

2. Submit the Schedule of Values to the Architect at the earliest possible date but no later than seven (7) calendar days before the date scheduled for submittal of the initial Application for Payment.

3. Sub-schedules: Where Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for

each Specification Section by site improvements, by each individual building new or addition construction, and by each individual building remodel or revitalization.

1. Arrange Schedule with subtotals for the following:
    a. General Conditions
    b. Fee including overhead, proffit, all insurances
    c. Site Improvements
    d. Each individual building new or addition;
    e. Each individual building remodel or revitilization

2. Identification: Include the following Project identification on the Schedule of Values:

    a. Project name and location
    b. Name of the Architect
    c. Project Number
    d. Contractor's name and address
    e. Date of submittal

3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division including general conditions broken down catagorically.
    b. Description of Work
    c. Name of Sub-Contractor
    d. Name of manufacturer or fabricator
    e. Generic Name of supplier
    f. Change Orders (numbers) that affect value
    g. Dollar value

        1. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

4. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Application for Payment and progress reports. Coordinate with the Project Manual Table of Contents. Break principal subcontract amounts down into several line items. Include a line item for Force Accounts and unit price items, as applicable.

5. The total shall equal the Contract Sum.

6. For each part of the work where an Application for Payment may include materials or equipment, purchased or fabricated and stored on or off-site, provide separate line items on the Schedule of Values for cost of those materials.

a. If the Contractor is requesting payment for materials or equipment that are stored off-site, those materials must be stored in a bonded and insured third party warehouse, and they must be segregated from other stored materials and they shall be identified according to project name, material and/or equipment description, and quatity. These materials must be observed in their stored condition by either the Architect or the Owner's representative prior to approval of the Application for Payment. In lieu of bond for stored materials offsite the contractor/subcontractor may provide an appropriate insurance policy approved by the owner to provide for the full replacement cost coverage for all materials stored. Any coverage for materials or equipment stored off-site shall include Owner as loss payee with respect to its interests. These materials must be observed in their stored condition by either the Architect or the Owner's representatives prior to approval of the Application for Payment.

b. All stored material payment requests shall include material supplier invoicing and shall not include labor or delivery costs.

7. Temporary facilities and other major cost items that are not direct cost of actual work-in-place shall be shown as separate line items in the Schedule of Values

a. General Conditions shall be broken down by major cost items and catagories including breakout of labor and material.

b. General Conditions performed by subcontract work shall be broken down to individual catagories on the schedule of values. No internal changes to subcontracts shall be allowed without formal Change Order Documentation and reflected on the schedule of values.

8. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and Owner's representative and paid for by the Owner.

1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements

C. Each application for payment shall include sufficient documentation to substantiate completed work including but not limited to: subcontractor invoicing, all tiers; general conditions cost breakdown, etc.

C. Payment Application Times: The date for each progress payment is as indicated in the Contract. The period covered by each Application for Payment is the period indicated in the Contract.

D. Payment Application Forms: Use Washoe County School District Certificate for Payment form only. This form is available in both hard copy format or electronic format.

E. Application Preparation: Complete every entry on the form. The execution of this form shall be by a person authorized to sign legal documents on behalf of the Contractor. The Owner will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

F. Pre-Approval of Application: Percentages of completed work are to be verified by the Owner’s Representative and Architect prior to transmittal to the Architect.

1. It shall be established at the Pre-Construction meeting the protocols that are acceptable to each party for the review of payment application percentages.

G. Record Drawings and Record Specifications: Prior to transmittal of the Application for Payment, Record Drawings and Record Specifications must be reviewed and approved by the Owner’s Representative and Architect.

1. It shall be established at the Pre-Construction meeting the protocols that are acceptable to each party for the review of Record Drawings and Specifications.

H. Transmittal: Submit one (1) signed original copy of each Application for Payment to the Architect by a method ensuring receipt within twenty-four (24) hours. The submitted copy shall be complete, including waivers of lien and similar attachments, when required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Architect.

2. Obtain Owner’s Representative’s initials as established during the Pre-Construction meeting and in sub-section 1.4, items E & F above.

I. Waivers of Mechanic’s Lien: With each Application for Payment, submit conditional waivers of mechanic’s lien from every entity who is lawfully entitled to file a

mechanic's lien arising out of the Contract and related to the work covered by the payment.

1. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.

J. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:

1. List of Sub-Contractors (all tiers)
2. List of principal suppliers and fabricators
3. Schedule of Values
4. Contractor's Construction Schedule
5. Schedule of principal products
6. Submittal Schedule
7. List of Contractor's staff assignments
8. List of Contractor's principal consultants
9. Copies of Building Permits
10. Copies of authorizations and licenses from governing authorities for performance of the work
11. Initial Progress Report
12. Report of Pre-Construction meeting
13. Data needed to acquire the Owner's insurance
14. Initial settlement survey and damage report, if required, (existing faclity condition)
15. Record Drawings *
16. Record Specifications*

* Record Drawings and Specifications must be reviewed and approved by the Owner's Representative prior to the Application for Payment.

K. Continuing Application for Payments: Administrative actions and submittals, that must precede or coincide with submittal of the Application for Payment, include the following:

1. Updated Contractor's Construction Schedule

2. Progress report

3. Record Drawings*

4. Record Specifications*

*Record Drawings and Specifications must be reviewed and approved by the Owner’s Representative prior to the Application for Payment.

L. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the work.

2. Administrative actions and submittals that shall precede or coincide with this application include:

a. Occupancy permits and similar approvals
b. Changeover information related to Owner's occupancy, use, operation, and maintenance
c. Final cleaning
d. Application for reduction of retainage and consent of surety
e. Advice on shifting insurance coverages
f. List of incomplete work, recognized as exceptions to Architect's Certificate of Substantial Completion
g. Record Drawings*
h. Record Specifications*
i. Meter Readings
j. Change of door locks to Owner's access

*Record Drawings and Specifications must be reviewed and approved by the Owner’s Representative prior to the Application for Payment.

M. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of project closeout requirements

2. Completion of items specified for completion after Substantial Completion

3. Ensure that unsettled claims will be settled
4. Ensure that incomplete work is not accepted and will be completed without undue delay
5. Completion and final reporting of all prevailing wage and apprentice utilization including unsettled prevailing wage and apprentice utilization claims
6. Transmittal of required project construction records to the Owner
7. Proof that taxes, fees, and similar obligations were paid
8. Removal of temporary facilities and services
9. Removal of surplus materials, rubbish, and similar elements
10. Certified property survey
11. Warranties (Guarantees) and Maintenance Agreements
12. Test/adjust/balance records
13. Operation and Maintenance Manuals
14. Startup performance reports
15. Final progress photographs

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01027

SECTION 01035 - MODIFICATION PROCEDURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section specifies administrative and procedural requirements for handling and processing contract modifications.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 1 SECTION 01300 – SUBMITTALS for requirements for the Contractor's Construction Schedule.

2. Division 1 SECTION 01027 – APPLICATIONS FOR PAYMENT for administrative procedures governing Applications for Payment.

3. Division 1 SECTION 01631 – SUBSTITUTIONS for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK

A. The Architect will issue supplemental instructions authorizing minor changes in the work, not involving adjustment to the contract sum or contract time, as an Architect's Supplemental Instruction.

1.4 CHANGE ORDER PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the work that will require adjustment to the contract sum or contract time. If necessary, the description will include supplemental or revised drawings and specifications.

1. Proposal requests issued by the Architect are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.

2. Within fourteen (14) working days of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Architect for the Owner's review.

a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

b. Indicate applicable taxes, delivery charges, equipment rental and amounts of trade discounts.

c. Include a statement indicating the effect the proposed change in the work will have on the contract time.

d. Include all subcontractor and contractor overhead and profit per contract documents.

B. Contractor-Initiated Proposals: When latent or unforseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the contract sum and contract time.

2. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Comply with requirements in SECTION 01631 – SUBSTITUTIONS if the proposed change requires substitution of one product or system for a product or system specified.

5. Include a list of all associated cost that would be incurred, including subcontractor and contractor overhead and profit per contract documents.

C. The Contractor shall prepare his response in accordance with the requirements set forth in the General Conditions.

D. Proposal Request Form: Use AIA Document G709-2001 for Change Order Proposal Requests or Change Order Request Form (CP-F107).

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: When the Owner and the Contractor disagree on the terms of a Proposal Request, the Owner and Architect may issue a Construction

Change Directive.The Construction Change Directive instructs the Contractor to proceed with a change in the work, for subsequent inclusion in a Change Order. The Construction Change Directive will be approved upon email confirmation from the Owner.

1. The Construction Change Directive contains a complete description of the change in the work. It also designates the method to be followed to determine change in the contract sum or contract time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

C. Notification: Contractor shall notify Owner prior to any “Not to Exceed” items being over run. Additional Construction Change Directive may be required for over run work.

1.6 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Proposal Request, the Architect will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G701-2000/2001 or WCSD’s Change Order Form (CP-F107).

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01035

ARCHITECT / OWNER

SAMPLE PRICE REQUEST

Date: _____Price Request #_____

Contractor: _____

Bid/Quote #: _____

Project: _____

Please submit a Price Quotation for the following changes being considered. Quote the change within fourteen (14) calendar days - ADD or DEDUCT - in the Contract Sum and any change in the Contract Time. Also, please state how long the price quoted is effective before job conditions warrant an increase in price. This is NOT authorization to proceed with this work.

REFERENCE: _____
_____
_____
_____

CHANGE: _____
_____
_____
_____

REQUESTED BY: _____

REASON: _____
_____
_____

CONTRACTOR / OWNER

SAMPLE CHANGE ORDER REQUEST

Date: _____Price Request #_____

Contractor: _____

Bid/Quote #: _____

Project: _____

Please submit a Price Quotation for the following changes being considered. Quote the change within five (14) calendar days - ADD or DEDUCT - in the Contract Sum and any change in the Contract Time. Also, please state how long the price quoted is effective before job conditions warrant an increase in price. This is NOT authorization to proceed with this work.

REFERENCE: _____
_____
_____
_____

CHANGE: _____
_____
_____
_____

REQUESTED BY: _____

REASON: _____
_____
_____
_____

SAMPLE CLARIFICATION

DATE: _____

TO: _____

FROM: _____

SUBJECT: _____

REFERENCE: _____
_____
_____
_____
_____

CLARIFICATION: _____
_____
_____
_____
_____

THIS INFORMATION IS PROVIDED FOR CLARIFICATION ONLY AND DOES NOT INVOLVE ANY CHANGE IN CONTRACT PRICE OR TIME.

SIGNATURE: _____

TITLE: _____

DATE: _____CLAR. NO.: _____

SAMPLE REQUEST FOR INFORMATION

DATE: _____

TO: _____

FROM: _____

SUBJECT: _____

REFERENCE:
Specification Section: _____ Paragraph: _____
Drawing Number: _____Details: _____

INFORMATION REQUIRED: _____
_____
_____
_____

SIGNATURE: _____

TITLE: _____

DATE: _____

REPLY TO ABOVE RFI: _____
_____
_____
_____

THIS INFORMATION IS PROVIDED FOR CLARIFICATION ONLY AND DOES NOT INVOLVE ANY CHANGE IN CONTRACT PRICE OR TIME.

SIGNATURE: _____

TITLE: _____

DATE: _____CLAR. NO.: _____

SECTION 01040 – COORDINATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures

2. Conservation

3. Coordination Drawings

4. Administrative and supervisory personnel

5. Cleaning and protection

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 1 Section 01050 – FIELD ENGINEERING specifies procedures for field engineering services, including establishment of benchmarks and control points.

2. Division 1 Section 01200 – PROJECT MEETING for progress meetings, coordination meetings, and pre-installation conferences.

3. Division 1 Section 01300 – SUBMITTALS for preparing and submitting the Contractor's construction schedule.

4. Division 1 Section 01600 – MATERIALS AND EQUIPMENT for coordinating general installation.

5. Division 1 Section 01700 – CONTRACT CLOSEOUT for coordinating contract closeout.

1.3 COORDINATION

A. Coordinate construction operations included in various sections of these Specifications to assure efficient and orderly installation of each part of the work.

Coordinate construction operations included under different sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

3. Make provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination, include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

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

1. Preparation of schedules

2. Installation and removal of temporary facilities

3. Delivery and processing of submittals

4. Progress meetings

5. Project closeout activities

D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the work.

E. Coordinate the installation of all motor starters. General Contractor is responsible for costs associated with supplying and installing <u>all</u> required motor starters.

F. Dimensions: The Structural drawings are to be used in conjunction with the Architectural, Mechanical and Electrical drawings. Primary structural elements are dimensioned on the structural plans and details. Not all secondary dimensions are shown, such as exact door and window locations, wall configurations, slab slopes, depressions, curbs, etc. Coordination of the structure of the dimensions as shown on the drawings and architectural items to be embedded into, or attached to the structure, is the responsibility of the Contractor. Any dimensions discrepancies between the Architectural, Civil Structural, Mechanical and Electrical drawings shall be reported to the Owner's Representative and Architect before proceeding with the work.

G. Intent of Drawings:

1. The work of the Contractor and subcontractor shall conform to the intent of the architectural and coordination drawings as reviewed by the Architect. Drawings are partly diagrammatic and do not intend to show in details all features of work. The Contractor shall carefully review the work to be performed by other trades, compare related drawings and shall thoroughly understand the building conditions affecting their work.

2. All changes required in the work caused by failure to do so shall be at no expense to the Owner.

H. Interfaces and Right-of-Way:

1. Make proper provisions to avoid interfaces.

2. Where conflicts occur, architectural and structural has right-of-way over mechanical and electrical work; concealed mechanical work has right-of-way over concealed electrical work; exposed electrical fixtures have right-of-way over mechanical fixtures.

3. Submit conflicts which cannot be resolved by right-of-way to the Owner for direction.

4. Submit reflected ceiling coordination plans showing work by all applicable trades for review and approval by the Architect.

I. Masonry Wall Coordination Drawings:

1. Contractor shall be responsible for providing masonry wall coordination drawings for all concrete masonry unit walls. Drawings shall consist of wall elevations drawn to scale at not less than ¼" = 1'0".

2. Wall elevations shall include dimensioned sizes and locations for all door, window and mechanical openings and penetrations, beam and joist

bearing pockets, ledger angles, embedded plate connections, and anchor bolts. All miscellaneous steel to be embedded in the masonry unit wall shall be referenced by show drawing mark number or structural detail number.

3. Masonry wall coordination drawings shall be reviewed and approved by interfacing trades prior to submittal to the Architect. Shop drawings for masonry reinforcement shall be an 'overlay' of the masonry wall coordination drawings. Detail, fabricate and place per ACI 315. Reinforcing shop drawings elevations shall show all vertical and horizontal reinforcing layouts; special reinforcement at lintels and jams at doors, windows, mechanical openings and as called out on Structural drawings.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare coordination drawings where careful coordination is needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space availability necessitates maximum utilization of space of efficient installation of different components.

1. Show the relationship of components shown on separate Shop drawings.

2. Indicate required installation sequences.

3. Comply with requirements contained in Section 01300 - SUBMITTALS.

B. Staff Names: Within 15 days of commencement of construction operations, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the project site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.

1. Post copies of the list in the Project Meeting Room, the temporary field office and each temporary telephone.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.2 CLEANING AND PROTECTION

A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading
2. Excessive internal or external pressures
3. Excessively high or low temperatures
4. Thermal shock
5. Excessively high or low humidity
6. Air contamination or pollution
7. Water or ice
8. Solvents
9. Chemicals
10. Light
11. Radiation
12. Puncture
13. Abrasion
14. Heavy traffic
15. Soiling, staining and corrosion
16. Bacteria
17. Rodent and insect infestation
18. Combustion
19. Electrical current
20. High-speed operation
21. Improper lubrication
22. Unusual wear or other misuse
23. Contact between incompatible materials
24. Destructive testing
25. Misalignment
26. Excessive weathering
27. Unprotected storage

28. Improper shipping or handling
29. Theft
30. Vandalism

END OF SECTION 01040

SECTION 01041 – PROJECT MANAGEMENT SOFTWARE

1. SUMMARY

    a. Web based construction project management collaboration software to submit, track, distribute and collaborate on project documentation and action items.

    b. The intent of utilizing a web-based construction management application is to reduce cost and schedule risk, improve quality and safety, and maintain a healthy team dynamic by improving information flow, reducing non-productive activities, reducing rework and decreasing turnaround times.

    c. WCSD to work with Contractor to ensure directory for project is current and to be responsible for establishing and managing necessary permissions for users through duration of project.

    d. WCSD will hold a kickoff meeting with the Contractor and applicable consultants at the beginning of the project to discuss how the software will be used, routing & naming protocols, permissions & restrictions, roles & responsibilities, etc.

2. SOFTWARE CAPABILITIES (including but not limited to)

    a. Daily Log
        i. Provides daily log entry from web and mobile with automatic capture of daily weather conditions.
        ii. Provides ability to attach photographs to entries directly from mobile.
        iii. Provides reporting capabilities to easily report on man-hours and activities for a certain time frame and contractor.

    b. Dashboards
        i. Provides a dashboard that shows the status of all currently assigned items with drill down capability to see the subject, assignee and due date of each item.

    c. Deficiency Tracking
        i. Provides a means for recording, assigning and confirming completion of any deficiency or observation noted during the course of construction.

    d. Directory
        i. Provides a directory of all team member’s contact information that is accessible from web and mobile.

    e. Documents
        i. Provides a storage location for miscellaneous project documents with the ability to have a folder hierarchy and privacy settings on folders.

ii. No storage limit.
iii. Provides download tracking.

f. Drawings
   i. Provides access to a system maintained current set of drawings on web and mobile, with access to all previous revisions as well.
   ii. Provides automatic hyperlinking capability for detail callouts.
   iii. Provides drawing markup capabilities on web and mobile.
   iv. Provides ability to link RFIs, Submittals, Punchlist Items, Photos and Project Documents to the drawings.
   v. Drawing Markups can be carried forward when new revisions are uploaded.
   vi. Markups and linked documentation are able to be public or private.

g. Financial Management
   i. Provides ability to manage contracts, payment applications and change orders.
   ii. Provides ability to view contracts and change orders from web and mobile.

h. Inspections
   i. Provides ability to create inspections from web and mobile.
   ii. Provides ability to create a deficiency item from an inspection that can be assigned and tracked to completion.

i. Meetings
   i. Provides ability to create, edit and view meeting minutes from web and mobile.
   ii. Provides ability to create action items with assignees and due dates from a meeting item.

j. Mobile Accessibility
   i. Provide native mobile applications for iOS and Android phones at a minimum that provide access to relevant project documentation, including as-built versions of Drawings and Specifications, even when there is no internet access.

k. Photos
   i. Provides ability to upload and view photos from web and mobile.
   ii. Provides ability to markup photos from mobile to clarify anything important in the photo.
   iii. Provides ability to link photos to specific locations on drawings.

l. Punchlist
   i. Provides ability to create punchlist items from web and mobile and link them to specific locations on the drawings.

ii. Provides ability to distribute punchlist items to all contractors, for contractors to mark them as resolved with photographic proof of resolution via mobile, and for the items to be marked as complete via mobile or web.

m. Requests for Information (RFIs)
   i. Provides ability to create RFIs with assignees, due dates and attachments.
   ii. Provides ability for assignees to respond to RFIs both via the software and by responding to the system generated email.
   iii. Provides an auto-generated log of all RFIs.

n. Schedule
   i. Provides ability to display schedules from typical scheduling software.

o. Specifications
   i. Provides ability to upload project specifications and manage them at the individual specification level.
   ii. Provides ability to view and search specifications on web and mobile.
   iii. Provides ability to upload revisions to individual specifications and maintain all revision history.
   iv. Provides an auto-generated current specification log that provides access to the current version of each specification.
   v. Provides ability to link specifications to submittals and view the specification from the submittal.

p. Submittals
   i. Provides ability to upload a submittal register of all expected submittals.
   ii. Provides ability to create multi-step approval workflows for submittals, with reminder notifications for the current assignee.
   iii. Provides the ability to upload any file type without size restrictions.
   iv. Provides an auto-generated submittal log.

3. TECHNOLOGY

a. Fully web based with mobile apps for Windows, iOS and Android phones.

b. Accessible without logging in through a virtual private network (VPN).

c. Works on the current version of Internet Explorer, Google Chrome, Mozilla firefox and Apple Safari browsers.

d. Can generate emails automatically, and all attachments are included in the emails via download links to avoid emails not being delivered due to size.

e. PDF output of forms such as RFIs, Submittals, Meetings, Change Orders, etc. are available and customizable.

4. TRAINING AND SUPPORT

   a. Procore has learning portal certifications and support available online.

5. PROCEDURES

   a. RFIs and Submittals
      i. The Contractor will be responsible for submitting all RFIs and Submittals through the software and assigning them to the appropriate parties.
      ii. WCSD / Architects / Engineers / Consultants etc. are responsible for posting all responses to these items via the software, including all relevant attachments.
      iii. The Contractor will distribute responses to all affected subcontractors and confirm agreement with the response by closing the item.

   b. Construction Documentation
      i. The Contractor will manage Drawings, Specifications and Documents in the software to ensure that the current version of all applicable construction documentation is available to the entire team via web and mobile.
      ii. The Contractor will ensure that all RFIs which modify the current drawings are posted to the drawings and available via web and mobile within 24 hours of the RFI being responded to.

   c. Contractor will record and distribute action items via the software.

   d. Contractor will take daily site photos and make them publicly available.

   e. Punchlist
      i. All punch list items will be managed through the software.
      ii. Punchlist items will be created by the Contractor while walking with the Owner and applicable consultants.

6. PRICING

   a. The cost of Procore Technologies services (software fee) has been paid in full by WCSD, but the contractor's bid shall include any costs the Contractor deems necessary to execute the use of Procore as identified above.

END OF SECTION 01041

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all contract documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for cutting and patching.

B. Related Sections: The following sections contain requirements that relate to this section:

1. Division 1 SECTION 01040 - COORDINATION for procedures for coordinating cutting and patching with other construction activities.

2. Division 2 SELECTIVE DEMOLITION for demolition of selected portions of the building for alterations.

3. Refer to other sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.

    a. Requirements of this section apply to mechanical and electrical installations. Refer to Division 15 and 16 sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.

2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.

3. List products to be used and firms or entities that will perform work.

4. Indicate dates when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.

6. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

a. Foundation construction
b. Bearing and retaining walls
c. Structural steel
d. Lintels
e. Miscellaneous structural metals
f. Piping, ductwork, vessels, and equipment

B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

a. Primary operational systems and equipment
b. Air or smoke barriers
c. Water, moisture or vapor barriers
d. Membranes and flashings
e. Fire protection systems
f. Noise and vibration control elements and systems
g. Control systems
h. Communication systems
i. Electrical wiring systems
j. Operating systems of special construction in Division 13 sections

C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1. If possible, retain the original installer or fabricator to cut and patch the exposed work. If it is impossible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.

1.5 WARRANTY

A. Existing Warranties: Replace, patch and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties, required or existing.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or a diamond-core drill.
4. Comply with requirements of applicable Division 2 sections where cutting and patching requires excavating and backfilling.

5. Where services are required to be removed, relocated or abandoned, bypass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

   a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.

4. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.4 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

SECTION 01110 – PREVAILING WAGE AND APPRENTICESHIP UTILIZATION SPECIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents, addendums and all NRS 338 Prevailing Wage and Apprenticeship Utilization Act requirements associated with this project shall apply to this section. Various forms and information can be found on the Office of the Labor Commisioner's website https://labor.nv.gov/

1.2 SUMMARY

A. This section includes administrative and procedural requirements for submittals required for performance of the work, including the following:

1. Contractor/Subcontractor Notification
2. Completion Notification
3. Weekly Wage and Hour Report of Public Works Contractors.
4. Weekly Wage and Hour Report submittal log.
5. Certification of bidder regarding penalties for noncompliance
6. Certification of bidder, proposed contractor or subcontractor regarding debarment, suspension, ineligibility of voluntary exclusion.

B. Related Sections: The following section(s) may contain requirements that relate to this section if included:

1. SECTION - 01027 APPLICATIONS FOR PAYMENT
2. SECTION – 01300 SUBMITTALS

1.3 SUBMITTAL PROCEDURES

A. Compensation:

1. No extension of contract time, overhead, or profit will be authorized because of failure to transmit any required submittals or payroll report submittals to the Owner sufficiently in advance of progress payment submittals.

2. No extension of contract time will be authorized because of failure to transmit or report of any forms.

B. Required Submittals

1. CONTRACTOR/SUBCONTRACTOR NOTIFICATION

a. The Apparent Low Bidder is requested to submit the information on the Comprehensive Contractor/Subcontractor List for the Prime Bidder and all named (used) Subcontractors whom they engage for work within two (2) business days after Recommendation of Award, which will be supplied by the Purchasing Department.

b. It shall be the Contractor's responsibility to comply and submit any required forms directly to the Office of the Labor Commissioner’s as required by NRS 338.

2. COMPLETION NOTIFICATION

The contractor shall notify Washoe County School District when completion of all work performed under the contract is complete.

3. WEEKLY WAGE AND HOUR REPORTING OF PUBLIC WORKS CONTRACTORS

a. The contractor and all subcontractors are required to submit Certified Weekly Wage and Hour Reports of Public Work Contractors for each weekly payroll to Washoe County School District through the use of LCP Tracker, a paperless online system for filling certified payroll. The first weekly report will begin on the Notice to Proceed date and conclude on the following Saturday. If the Notice to Proceed date falls on a Saturday, the first report will only include reporting for that day. All successive reports will begin on the following Sunday and conclude on the following Saturday. All subcontractor report numbers shall coincide with the General Contractors report numbers. If the contractor or subcontractors do not work during any weekly reporting period they still must submit a report

indicating no public work project hours were performed for that weekly period. When contract scope of work is completed including punch list work, the last report is to be clearly marked “FINAL REPORT.”

b. Weekly Wage and Hour Report of Public Works Contractors and Weekly Wage and Hour Report submittal log must be submitted into Washoe County School District LCP Tracker system within fifteen (15) calendar days following the end of the month being reported.

c. The Prime contractor is required to designate an individual as Prime Approver for the project. The Prime Approver will oversee the reporting for all subcontractors of all tiers on the project. WCSD will set up the Prime Approver Account for the project. Thereafter, the Prime Approver will have the responsibility to use the Account to approve all payroll on the project.

d. The prime contractor is required to assign subcontractors within the LCP Tracker system to the project and to ensure that all subcontractors are aware of the necessity to file payrolls electronically, are set up within the system and all required payrolls are filed by subcontractors of all tiers.

.

1.4 OWNER'S ACTION

A. The owner will review each submittal, mark to indicate action taken, and provide review and acceptance.

1. Compliance with submittal requirements is the Contractor’s responsibility.

1.5 POSTINGS/SIGNAGE

A. Each contractor engaged on a public work must post the applicable prevailing rate of wages for the project on the site of the public work in a generally visible place to workmen.

B. Each contractor engaged in a public work must provide a sign with a white background and 6" black lettering stating, "Posted prevailing wages apply to this public works project". This sign must be posted on the site of the public work in a generally visible place to workmen. This will be maintained by the Contractor throughout the construction phase from the Notice to Proceed date through completion of the project.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01110

WASHOE COUNTY SCHOOL DISTRICT

WEEKLY WAGE AND HOUR REPORT SUBMITTAL LOG

Report Number	Contractor	Week Ending Date	Date Submitted

Washoe County School District

WEEKLY WAGE AND HOUR REPORT OF PUBLIC WORK CONTRACTORS FOR THE PAYROLL PERIOD ENDING

Month and Day Year

Pursuant to Chapter 338 of NRS and NAC, respectively, the contractor and each subcontractor shall keep or cause to be kept an accurate record showing the name and the actual per diem, wages and benefits paid to each workman employed by him in connection with the public work. The contractor or subcontractor shall ensure that a copy of the record for each calendar month is received by the public body awarding the contract no later than 15 days after the end of the month.

Report # ☐ Regular Weekly Report ☐ . Final Report Bid/Project # PWP-

Project Title Public Body Awarding Contract **Washoe County School District**

Prime Contractor Name & Address License #

Subcontractor Name & Address License #

Employee Name & State/Jurisdiction that Issued Identification	Work Classification		Hours Worked By Day							Total Hours For Week	Hourly Rate Of Pay including fringe	Hourly Fringe Benefit Contribution					Gross Amount Earned For Week	Net Wage Paid For Week
			S	M	T	W	T	F	S			H & W	Pen.	Vac.	App. Trg	Other		
		S								0								
		O								0								
		S								0								
		O								0								

Report Hours For Above Referenced Public Works Project Only

Employee Name & State/Jurisdiction that Issued Identification	Work Classification	Hours Worked By Day								Total Hours For Week	Hourly Rate Of Pay including fringe	Hourly Fringe Benefit Contribution					Gross Amount Earned For Week	Net Wage Paid For Week
			S	M	T	W	T	F	S			H & W	Pen.	Vac.	App. Trg	Other		
			1/0	1/0	1/0	1/0	1/0	1/0	1/0									
		S								0								
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Report Hours For Above Referenced Public Works Project Only

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			S	M	T	W	T	F	S			H & W	Pen.	Vac.	App. Trg	Other		
			1/0	1/0	1/0	1/0	1/0	1/0	1/0									
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Report Hours For Above Referenced Public Works Project Only

Employee Name & State/Jurisdiction that Issued Identification	Work Classification	Hours Worked By Day								Total Hours For Week	Hourly Rate Of Pay including fringe	Hourly Fringe Benefit Contribution					Gross Amount Earned For Week	Net Wage Paid For Week
			S	M	T	W	T	F	S			H & W	Pen.	Vac.	App. Trg	Other		
			1/0	1/0	1/0	1/0	1/0	1/0	1/0									
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			S	M	T	W	T	F	S			H & W	Pen.	Vac.	App. Trg	Other		
			1/0	1/0	1/0	1/0	1/0	1/0	1/0									
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Report Hours For Above Referenced Public Works Project Only

Employee Name & State/Jurisdiction that Issued Identification	Work Classification	Hours Worked By Day								Total Hours For Week	Hourly Rate Of Pay including fringe	Hourly Fringe Benefit Contribution					Gross Amount Earned For Week	Net Wage Paid For Week
			S	M	T	W	T	F	S			H & W	Pen.	Vac.	App. Trg	Other		
			1/0	1/0	1/0	1/0	1/0	1/0	1/0									
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		S								0								
		O								0								

Report Hours For Above Referenced Public Works Project Only

STATE OF NEVADA
Office of the Labor Commissioner
STATEMENT OF COMPLIANCE

In compliance with the provisions of Chapters 338 of NRS and NAC, respectively, I, as an officer, owner or director of the undersigned contractor, hereby certify that this report is a true and accurate statement of worker's earnings employed on this Public Works contract by the undersigned contractor for the following payroll period:

_____ , _____ to _____ , _____ .
Month and Day Year Month and Day Year

I further certify:

1. That no deductions have been made from the wages earned by any person so listed other than those permissible or required by law.
2. That any apprentice listed herein is registered in a bona fide apprenticeship program.
3. Check all that apply:

☐ The contractor is signatory to a collective bargaining agreement with some or all of its employees.
☐ Each employee listed has been paid the required applicable wages plus the amount of fringe benefits listed in their contract.
☐ Each employee listed has been paid the required applicable wages per hour with no fringe benefit contributions paid by the contractor.

☐ Prime Contractor
☐ Subcontractor

Contractor Name:	Address:
Telephone:	Fax:

_____ _____ _____
Printed Name / Title Signature Date

NRS 338.070:

4. The contractor and each subcontractor shall keep or cause to be kept an accurate record showing the name and the actual per diem, wages and benefits paid to each workman employed by him in connection with the public work.

5. The record must be open at all reasonable hours to the inspection of the public body awarding the contract, and its officers and agents. The contractor or subcontractor shall ensure that a copy of the record for each calendar month is received by the public body awarding the contract no later than 15 days after the end of the month. The copy must be open to public inspection as provided in NRS 239.010. The record in the possession of the public body awarding the contract may be discarded by the public body 2 years after final payment is made by the public body for the public work.

6. Any contractor or subcontractor, or agent or representative thereof, performing work for a public work who neglects to comply with the provisions of this section is guilty of a misdemeanor.

Washoe County School District

NON-PERFORMANCE PAYROLL REPORT FOR PUBLIC WORKS PROJECTS

Pursuant to Chapter 338 of NRS and NAC, respectively, the contractor and each subcontractor shall keep or cause to be kept an accurate record showing the name and the actual per diem, wages and benefits paid to each workman employed by him in connection with the public work. The contractor or subcontractor shall ensure that a copy of the record for each calendar month is received by the public body awarding the contract no later than 15 days after the end of the month.

Report # _____ ☐ Regular Weekly Report ☐ . Final Report Bid/Project # _____ PWP- _____

Project Title _____ Public Body Awarding Contract **WASHOE COUNTY SCHOOL DISTRICT**

Prime Contractor Name & Address _____ License # _____

Subcontractor Name & Address _____ License # _____

Payroll period _____, _____ to _____ _____

Month and Day Year Month and Day Year

I hereby certify that no employees or owner/operators were used on the construction of this Public Works project during the payroll period above.

_____ _____ _____

Name & Title (please print) Signature Date

STATE OF NEVADA

JOE LOMBARDO
GOVERNOR

DR. KRISTOPHER SANCHEZ
DIRECTOR

BRETT K. HARRIS, ESQ.
LABOR COMMISSIONER



OFFICE OF THE LABOR COMMISSIONER
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2025 PREVAILING WAGE RATES
WASHOE COUNTY REGION

DATE OF DETERMINATION: October 1, 2024

APPLICABLE FOR PUBLIC WORKS PROJECTS OVER $100,000 BID/AWARDED OCTOBER 1, 2024 THROUGH SEPTEMBER 30, 2025

Pursuant to Nevada Revised Statutes (NRS) section 338.030(9)(a), "If the contract for a public work: (a) Is to be awarded pursuant to a competitive bidding process, the prevailing wages in effect at the time of the opening of the bids for a contract for a public work must be paid until the completion or termination of the contract or for the 36 months immediately following the date on which the bids were opened, whichever is earlier." For contracts not awarded pursuant to competitive bidding, please see NRS section 338.030(9)(b). However, if a project exceeds 36 months new wage rates may apply pursuant to NRS section 338.030(9)(10). Prevailing Wage Rates may be adjusted based on Collective Bargaining Agreements (CBA's) and adjustments to those agreements. (See NRS 338.030)

PREVAILING WAGE DETERMINATIONS - NRS 338.030 subsection 7, the wages so determined must be:

(a) Issued by the Labor Commissioner on October 1 of the odd-numbered year in which the survey was conducted and, except as otherwise provided in subsection 8, remain effective for 2 years after that date; and
(b) Made available by the Labor Commissioner to any public body which awards a contract for any public work.

Senate Bill 243 passed during the 80th Nevada Legislative Session (2019) and set forth in NRS section 338.025, now requires the Labor Commissioner to calculate the Prevailing Wage Rates by region. NRS section 338.025 Prevailing wage regions. For the purpose of determining the prevailing rate of wages pursuant to NRS section 338.030, four prevailing wage regions are hereby established in this State as follows:

1. The Washoe Prevailing Wage Region consisting of Washoe County;
2. The Northern Rural Prevailing Wage Region consisting of Carson City and the counties of Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Storey, Pershing and White Pine;
3. The Clark Prevailing Wage Region consisting of Clark County, and
4. The Southern Rural Prevailing Wage Region consisting of the counties of Esmeralda, Lincoln and Nye.

OBJECTIONS TO PREVAILING WAGE DETERMINATIONS – NRS section 338.030 subsection 2. Objections to the Prevailing Wage Determinations must be submitted within 30 days after the Prevailing Wage Determinations are issued.

Pursuant to NRS section 338.030 subsection 8, the Labor Commissioner will review the prevailing wage rates in each even-numbered year to determine if adjustments should be made.

As Amendments/Revisions are made to the wage rates, they will be posted on the website for each respective Region. Please review regularly for any Amendments/Revisions that are posted or contact our offices directly for further assistance.

Air Balance Technician 4
Alarm Installer 5
Boilermaker 6
Bricklayer 7
Carpenter 8
Cement Mason 9
Electrician – Communication Technician 10
Electrician - Lineman 11
Electrician – Neon Sign 13
Electrician - Wireman 14
Elevator Constructor 15
Fence Erector 17
Flagperson 18
Floor Coverer 19
Glazier 20
Highway Striper 22
Hod Carrier-Brick Mason 23
Hod Carrier – Plasterer Tender 24
Ironworker 26
Laborer 29
Lubrication And Service Engineer (Mobile And Grease Rack) 30
Mechanical Insulator 31
Millwright 32
Operating Engineer 35
Operating Engineer – Steel Fabricator & Erector 35
Operating Engineer – Piledriver 36
Painter 38
Piledriver (Non-Equipment) 40
Plasterer 42
Plumber/Pipefitter 43
Refrigeration 44
Roofer 45
Sheet Metal Worker 46
Soils and Material Tester 47
Sprinkler Fitter 47
Surveyor 48
Taper 49
Tile/Terrazzo Worker/Marble Mason Finisher 50
Tile/Terrazzo Worker/Marble Mason 51
Traffic Barrier Erector 53
Truck Driver 54
Well Driller 56

Group Classifications

Labor Group Classifications 57
Operating Engineers 61

NRS section 338.010 subsection (25) "Wages" means:

a) The basic hourly rate of pay; and
b) The amount of pension, health and welfare, vacation and holiday pay, the cost of apprenticeship training or other similar programs or other bona fide fringe benefits which are a benefit to the worker.

NRS section 338.035 Bona Fide Fringe Benefits - Discharge of part of obligation of contractor or subcontractor engaged on public work to pay wages by making certain contributions in name of workman. "Bona fide fringe benefit" means a benefit in the form of a contribution that is made not less frequently than monthly to an independent third party pursuant to a fund, plan or program: (a) Which is established for the sole and exclusive benefit of a worker and his or her family and dependents; and (b) For which none of the assets will revert to, or otherwise be credited to, any contributing employer or sponsor of the fund, plan or program. The term includes, without limitation, benefits for a worker that are determined pursuant to a collective bargaining agreement and included in the determination of the prevailing wage by the Labor Commissioner pursuant to NRS section 338.030.

Please see NRS sections 338.010, 338.020, and 338.035 and Nevada Administrative Code (NAC) sections 338.0097 and 338.092 through 338.100 for further details on "Bona fide fringe benefits" and reporting requirements and exceptions.

Job Descriptions for Recognized Classes of Workers

Regarding job descriptions for public works projects, please take notice of the following:

1. The job description links have been redacted to include ONLY the scope of work for the craft.
2. Pursuant to NAC section 338.0095(1)(a) - A worker employed on a public work must be paid the applicable prevailing rate of wage for the type of work that the worker actually performs on the public work and in accordance with the recognized class of the worker.
3. The work description for a particular class is not intended to be jurisdictional in scope.
4. Any person who believes that a type of work is not classified, or who otherwise needs clarification pertaining to the recognized classes or job descriptions, shall contact the Labor Commissioner in writing for a determination of the applicable classification and pay rate for a particular type of work.
5. The job descriptions set forth or referenced herein supersede any, and all descriptions previously agreed upon by the Labor Commissioner in any settlement agreements or stipulations arising out of contested matters.
6. The following specific provisions, where applicable, shall prevail over any general provisions of the job descriptions:

    - Amendments to the prevailing wage determinations.
    - Group Classifications and/or descriptions recognized by the Labor Commissioner and included with wage determinations for a particular type of work in a particular county.

Zone Rates
The zone rate has been added to each applicable craft.

Premium Pay Premium pay for hours worked in excess of a shift of 8 hours or 12 hours, or such other time increment set forth in the Collective Bargaining Agreement or on a weekend or holiday.

Craft: AIR BALANCE TECHNICIAN (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Air Balance Technician Journeyman……77.37
Air Balance Technician-Foreman…….....82.06
Air Balance Technician-General Foreman……86.75

ADD ZONE RATE
In addition to AIR BALANCE rates add the applicable amounts per hour, calculated based on a road from the courthouse in Reno, Nevada:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 100 miles	$5.00
Zone 3	Over 100 miles	$10.00 the employee shall be provided reasonable lodging and meal expenses.

ADD PREMIUM PAY
All hourly rates are subject to Over Time (One and one half 1 ½) of the Regular rate:
1. For all hours worked over Eight (8) Hours in one day or shift.
2. For the first Eight (8) Hours work on Saturday.

All hourly rates are subject to Double Time of the Regular Rate:
1. For all hours worked over Ten (10) Hours in one day or shift.
2. For all hours worked over Eight (8) Hours on Saturday.
3. For all hours worked on Sunday, New Year's Day, Memorial Day, Independence Day, Friday before Labor Day, Labor Day, Nevada Day, Thanksgiving Day, Day after Thanksgiving, Day before Christmas, and Christmas Day.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Independence Day, Friday before Labor Day, Labor Day, Nevada Day, Thanksgiving Day, Day after Thanksgiving, Day before Christmas, and Christmas Day

JOB DESCRIPTION: Excerpt from Sheet Metal Local 26 Collective Bargaining Agreement

(a) manufacture, fabrication, assembling, handling, erection, installation, dismantling, conditioning, adjustment, alteration, repairing and servicing of all ferrous or nonferrous metal work and all other materials used in lieu thereof and of all HVAC systems, air veyor systems, exhaust systems, and air-handling systems regardless of material used including the setting of all equipment and all reinforcements in connection therewith; (b) all lagging over insulation and all duct lining; (c) testing and balancing of all air-handling equipment and duct work; (d) the preparation of all shop and field sketches whether manually drawn or computer assisted used in fabrication and erection, including those taken from original architectural and engineering drawings or sketches; (e) metal exterior wall systems, metal roofing; and (f) all other work included in the jurisdictional claims of International Association of Sheet Metal, Air, Rail and Transportation Workers.

Craft: ALARM INSTALLER (Non-Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Alarm Installer……..…….39.90

JOB DESCRIPTION:
Includes but is not limited to:
1. Installing or testing electrical protective signaling systems used to provide notification of fire, burglary or other irregularities on the premises of the subscriber of the system;
2. Installing of wiring and signaling units;
3. Repairing electrical protective signaling systems
4. Starting up, programming and documenting systems;

Craft: BOILERMAKER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Boilermaker……74.61
Boilermaker Foreman……78.59

ADD PREMIUM PAY

Premium pay for hours worked in excess of a shift of 8 hours or 12 hours or such other time increment set forth in the Collective Bargaining Agreement or on a weekend or holiday.

PER DIEM payments and TRAVEL pay shall be paid as follows:
The Contractor shall pay the employee Per Diem in the amount of seventy-five dollars ($75 .00) per day worked where the job site is 70 miles or more but Jess than 120 miles from the dispatch point.
For mileage of 120 miles or more, the daily Per Diem amount shall be ninety dollars ($90.00) per day worked.
Where the job site is over 120 miles or more from the dispatch point, employees shall receive the I.R.S. maximum allowable per mile for transportation between the dispatch point and the job site at the beginning and conclusion of their employment.
Where a job is located two hundred and forty (240) miles or more from the dispatch point, the employee will receive one additional day's Per Diem at the beginning of employment and one additional day's Per Diem at the conclusion of employment.

JOB DESCRIPTION:

Includes but is not limited to:

1. Constructing, assembling, maintaining and repairing stationary steam boilers and boiler house auxiliaries;
2. Aligning structures or plate sections to assemble boiler frame tanks or vats;
3. Assisting in the testing of assembled vessels, directing cleaning of boilers and boiler furnaces;
4. Inspecting and repairing boiler fittings, including, without limitation, safety valves, regulators, automatic-control mechanisms, water columns and auxiliary machines.

Craft: BRICKLAYER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Bricklayer Journeyman……..……..……53.96
Bricklayer Foreman……..……55.21

ADD ZONE PAY in addition to BRICKLAYER rates add the applicable amounts per hour, calculated based on road miles of over thirty-five (35) miles from the Washoe County Courthouse in Reno, Nevada:

Zone 1	0 to 35 miles	$0.00
Zone 2	35 to 75 miles	$2.50
Zone 3	Over 75 miles	$8.12

ADD PREMIUM PAY

One and one half (1 ½) the regular straight time hourly rate shall be paid:
1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:
1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS

If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between No, NV Masonry Contractors and LIUNA Local 169.

This shall apply to and cover the work of Brick/Block Masonry, Stone Masonry, Artificial Masonry Marble Masonry.

Craft: CARPENTER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Carpenter Journeyman……61.42
Carpenter Foreman……65.26
Carpenter General Foreman……69.48

ADD ZONE RATE
(Building and Heavy Highway and Dam Construction)
In addition to CARPENTER rates add the applicable amounts per hour, calculated from the Washoe County Courthouse:

Zone 1	Within 75 road miles	$0.00
Zone 2	Between 75 to 150 road miles	$6.00
Zone 3	Between 150 to 300 road miles	$7.00
Zone 4	In excess of 300 road miles	$8.00

ADD PREMIUM PAY
Any work performed over eight (8) hours per day and on Saturdays shall be compensated at time and one-half (1-1/2x) the appropriate hourly rate. All work performed on Sundays, holidays and over twelve (12) hours in one (1) day shall be compensated at two times (2x) the appropriate hourly rate. In the event a day's work is lost because of severe weather conditions or major mechanical breakdown, work may be performed on a voluntary basis on a Saturday at the straight time hourly rate for eight (8) hours provided the straight time hours worked in one (1) week do not exceed forty (40) hours.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, 4th of July, Labor Day, Admission's Day, Thanksgiving Day, the Friday after Thanksgiving, Christmas Day.

JOB DESCRIPTION Excerpt from Southwest Regional Council of Carpenters and Affiliated Local Unions Master Labor Agreement

(1) All building construction, including but not limited to the construction, erection, alteration, repair, modification, demolition, addition, or improvement in whole or in part of any building structure. All rigging of Carpenters', and Piledrivers' materials.

(2) All heavy, highway and engineering construction, including but not limited to the construction, improvement, modification and demolition of all or any part of the streets, highways, bridges, viaducts, railroads, tunnels, airports, water supply, irrigation, flood control and draining systems, sewers and sanitation projects, dams, power houses, refineries, aqueducts, canals, river and harbor projects, wharves, docks, breakwaters, jetties, quarrying of breakwaters or rip rap stone or operations incidental to such heavy construction work and whether such work is above or below the water line level.

(3) The character of such work covered by this Agreement shall include but not be limited to all carpenter, concrete form work, shoring, drywall, metal stud, drywall finishing, plaster, scaffold, modular furniture, trade show work, insulation, acoustical, and lathing work on such construction, including but not limited to plastics and such work in connection with new methods of construction or use of materials.

(4) All interior and/or exterior wall finish work, including EIFS and other wet wall finish work.

Craft: CEMENT MASON (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Cement Mason - Journeyman…….……..…….54.42
Cement Mason - Foreman……..……58.92

ADD ZONE RATE
In addition to CEMENT MASON rates add the applicable amounts per hour, calculated from the Washoe County Courthouse:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$6.00
Zone 3	150 to 300 miles	$7.00
Zone 4	More than 300 miles	$8.00

ADD PREMIUM PAY
OVERTIME – Any worked performed over eight (8) hours per day shall be compensated at time and one half the hourly rate. All work performed after twelve (12) consecutive hours shall be paid at double the hourly rate. All worked performed on Saturdays shall be compensated at time and one half the hourly rate. All Sunday and Holiday work shall be paid for at double time.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Independence Day, Labor Day, Admissions Day, Thanksgiving Day and the following Friday following Thanksgiving Day, and Christmas

JOB DESCRIPTIONS
1. All building construction, including but not limited to the construction, erection, alteration, repair, modification, demolition, addition, or improvement in whole or in part of any building structure.
2. All heavy, highway and engineering construction, including but not limited to construction, improvement, modification, demolition, of all or any part of streets and highways (including sidewalks, curbs and gutters), bridges, viaducts, rail roads, tunnels, airports, water supply, irrigation, flood control and drainage systems, sewers and sanitation projects, dams, power houses, refineries, aqueducts, canals, river and harbor projects, wharves, docks, breakwaters, jetties, quarrying of breakwater or rip-rap stone, or operation incidental to such heavy construction work.
3. The work to be performed by Cement Masons shall include but not be limited to the following, when tools of the Cement Masons trade are used or required:
Setting screeds, screed pins, curb forms and curb and gutter forms, rodding, spreading and tamping concrete, hand application of curing compounds, applying topping (wet or dry) colors or grits; using Darby and push floats, hand troweling or hand floating; marking edging, brooming or brushing, using base cove or step tools; chipping, and stoning, patching or sacking; dry packing; spreading and finishing gypsum, operating mechanical finishers (concrete) such as Clary, Jackson, Bidwell Bridge Deck Paver or similar types; grinding machines; troweling machines, floating machines powered concrete saws; finishing of epoxy and resin materials, bush hammering and exposed finishes for architectural work.
Operation of skill saw, chain saw, Laser Screed, Laser Level, Curb and Slipform machines, Epoxy Type Injection pumps, stamps or other means of texturing, any new devices, which are beneficial to the construction of or with concrete or related products.

Craft: ELECTRICIAN COMMUNICATION TECHNICIAN (Non-Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Communication Technician..…….....41.13

JOB DESCRIPTION:

ELECTRONIC COMMUNICATION TECHNICIAN, includes but is not limited to:
1. Pulling cable, installing and trimming devices, terminating loops, circuits, or other data gathering points;
2. Termination of main control panels, racks, or other head end equipment, as well as testing of all circuits from the field devices to the main control panels and/or equipment; 2016-2017 Prevailing Wage Rates – Washoe County 13
3. Utilizing test equipment for the purpose of troubleshooting and verifying the integrity of the circuits in question;
4. Using hand tools to assemble and install data communication lines and equipment computer systems, antennas and towers;
5. Disassembling equipment to adjust, repair or replace parts using hand tools;
6. Starting up, programming and documenting systems;
7. Measuring, cutting, splicing, connecting, soldering and installing wire and cable associated with communication systems.

Craft: ELECTRICIAN LINEMAN/GROUNDMAN/HEAVY EQUIPMENT OPERATOR
(Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Electrician-Groundman……..……39.57
Lineman-Journeyman…..……..……..67.30
Lineman-Foreman……73.99
Lineman-General Foreman……..……...80.76
Lineman-Equipment Man……..……..51.75

ADD PREMIUM PAY
Premium pay for hours worked in excess of a shift of 8 hours or 12 hours or such other time increment set forth in the Collective Bargaining Agreement or on a weekend or holiday.

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Nevada Day, Thanksgiving Day and the Friday following, Christmas Day.

JOB DESCRIPTION:
Outside, overhead and underground construction and maintenance work on electrical transmission lines, switch yards, substations and distribution systems which shall include:

1. Pole line work (whether built of wood, metal or other material): the digging and back-filling of holes for poles or anchors (by hand or mechanical equipment): the loading or unloading, handling, sorting and moving of materials; the assembly or erection of all materials including the guying, stringing of conductors and fiber optics or other work necessary on through to the ultimate completion of such pole work.

2. Steel or metal structures used for the purpose of carrying electrical wire, conductors, or equipment (this includes transmission towers, outdoor substations, switch racks, or similar electrical structures); the moving of men, tools or equipment; the loading or unloading, handling, sorting and moving of materials; the assembly and erection of all materials used on the job site, including the assembly of the grillage and foundations, on through to the ultimate completion of such structures. Work covered shall include the grounding of all such structures except the bonding of stub-angle to rebar cage; the stringing and installation of wires, cables and insulators or other electrical equipment suspended from structure; also the handling and placing of transformers or O.C.B.'s and other related electrical equipment.

The moving of men, tools or equipment; the loading or unloading, handling, sorting and moving of materials; the assembly of all electrical materials on race-ways such as ducts, shall be performed by workmen under the Agreement. This shall also include CIC (cable in conduit), CC (coiliable conduit), the placing of fish wire, the pulling of cables or wires through such race-ways, installing and making up of termination and the splicing of such conductors.

Street lighting systems where such work properly comes under the outside jurisdiction shall be handled in the same manner as pole line construction.

Installing and maintaining the catenary and trolley work and bonding of rails shall be handled in the same manner as pole line, and steel construction.

In connection with all of the above items, it is understood the scope of this Agreement shall include not only new installation work but shall also govern the repair, maintenance or dismantling of such structures, lines or equipment; the handling and operating of all equipment used to transport men, tools and/or

materials on the job site as well as the equipment used to move, raise or place materials used in the Outside Branch of the Electrical Industry shall be performed by workmen under this Agreement unless otherwise excluded herein.

Craft: ELECTRICIAN – NEON SIGN (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Electrician Neon Sign Journeyman……..…….63.15
Electrician Neon Sign Foreman..……..…….65.15
Electrician Neon Sign Truck Foreman supervising (4) or more...…….67.65

ADD PREMIUM PAY
One and one half (1 ½X) the regular straight time hourly rate shall be paid:
1. For all hours worked over eight (8) hours in one day or shift, either before or after the shift.
2. For up to 8 hours worked on Saturday from midnight to midnight.
Double (2X) the regular straight time hourly rate shall be paid for all time:
1. For all hours worked over eleven (11) hours in one day or shift, Monday thru Friday.
2. For all hours worked in excess of 8 hours on Saturday, Sundays or Holidays.

SHIFT DIFFERENTIAL
Second Shift (Swing) will be an additional $1.25 cents per hour.
Third Shift (Graveyard) will be an additional $1.50 per hour.
HIGH TIME (Working at heights)
1. All employees working at height of 65 feet and subject to a direct fall shall be paid an additional $2.75 per hour in addition to their normal rate for a minimum of 2 hours.
2. All employees working at height of 125 feet or when repelling below 65 feet shall be paid an additional $4.00 per hour in addition to their normal rate for a minimum of 4 hours.

FOREMAN/TRUCK FOREMAN
1. First employee on the job (TRUCK FOREMAN) must have a CDL and Welder certification and shall be paid $2.00 per hour
in addition to their normal rate of pay.
2. When the first employee on the job (FOREMAN) is supervising (4) or more workers, he or she shall be paid an additional $2.50 per hour. In addition to their normal rate of pay.
3. When the first employee on the job (TRUCK FOREMAN and FOREMAN) has a CDL and Welder certification and is supervising (4) or more workers, he or she shall be paid an additional $4.50 per hour. In addition to their normal rate of pay.

RECOGNIZED HOLIDAYS
New Year's Day, Martin Luther King Day, President's Day unpaid holiday; double time for any hours worked, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Eve ½ day (4 hours) unpaid holiday; straight time for first four hours worked and double time for hours worked after four hours, Christmas Day.

JOB DESCRIPTION Includes but is not limited to:
1. Installing, servicing and repairing plastic, neon and illuminated signs.
2. Ascending ladders or operating hydraulic or electric hoist to install, service, or examine sign to determine cause of malfunction.
3. Wiring, rewiring or removing defective parts and installing new parts using electrician's tools.
4. Removing sign or part of sign for repairs, such as structural fabrication, scroll repair, or transformer repair.

Craft: ELECTRICIAN WIREMAN (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Wireman……..……...……..……..73.88
Wireman-Cable Splicer…...……..78.33
Wireman Forman…..……..……79.95
Wireman General Foreman…..……..……86.02

ADD ZONE RATE
In addition to ELECTRICIAN-Wireman, rates, add the applicable amounts per hour, calculated from Washoe County Courthouse, Reno Nevada:

Zone 1	0 to 70 miles	$0.00
Zone 2	70 to 90 miles	$8.00
Zone 3	90 miles and over	$10.00

ADD PREMIUM PAY
Premium pay for hours worked in excess of a shift of 8 hours or 12 hours or such other time increment One and one half (1 ½) the regular straight time hourly rate shall be paid:
1. For all hours worked over eight (8) hours in one day or shift.
2. For the first eight (8) hours worked on Saturday

Double the regular straight time hourly rate shall be paid for all time:
3. For all hours worked over ten (10) hours in one day or shift.
4. For any hours worked on Sunday
5. For any hours worked on Holidays

Shift Rates
1. Swing shift to be paid at seventeen-point three (17.3) percent the regular straight time rate for hours between 4:30 p.m. and 1:00 a.m.
2. Graveyard shift to be paid at thirty-one-point four (31.4) percent the regular straight time rate for hours between 12:30 a.m. and 9:00 a.m.
3. Shifts are established for at least five (5) consecutive days or double the regular straight time rate shall be paid.

**Note – Double the straight time rate is the max rate paid. (No pyramiding of overtime rates)

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Independence Day, Labor Day, Admission Day, Veteran's Day, Thanksgiving Day, Friday following Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between NECA and Local Union 401, IBEW
All electrical construction, installation, or erection work including fabrication or prefabrication of boxes, brackets, bends and nipples and all electrical maintenance thereon including the final running tests. This shall include the installation and maintenance of temporary wiring and the installation of all electrical lighting, heat and power equipment, installation of all raceway systems, including underground conduits and all supports, underground utility conduits, photovoltaic power generation systems, wind power generation systems and geothermal power generating systems. Further all salvage of electrical work shall be included.

Craft: ELEVATOR CONSTRUCTOR (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Elevator Constructor-Journeyman Mechanic..……126.41
Elevator Constructor-Journeyman Mechanic In Charge…….....137.32

ADD PREMIUM PAY
Work performed on Construction Work on Saturdays, Sundays and before and after 30 the regular working day on Monday to Friday, inclusive, shall be classed as overtime, and paid for at double the rate of single time.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Independence Day, Labor Day, Nevada Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement of International Union of Elevator Constructors Local 8.

The handling and unloading of all equipment coming under the jurisdiction of the Elevator Constructor, from the time such equipment arrives at or near the building site, shall be handled and unloaded by the Elevator Constructors. Mechanical equipment such as a forklift or truck mounted swing boom may be used by the Elevator Constructors. A derrick, crane or material hoist can be used under the supervision of Elevator Constructors to handle and unload the heavy material described in Par. 5(a). Where unusual conditions are expected to exist prior to delivery of equipment at or near the building site in regard to handling and unloading of equipment in the primary or secondary jurisdiction of the local union, the Company shall contact the Local's Business Representative to make appropriate arrangements for the handling and unloading of such equipment. In areas outside the jurisdiction of the local union, the Company shall contact the Regional Director.

(b) The erecting and assembling of all elevator equipment to wit: electric, hydraulic, steam, belt, dumbwaiters, residence elevators, parking garage elevators (such as Bowser, Pigeon Hole, or similar types of elevators), shuttles, compressed air and handpower, automatic people movers, monorails, airport shuttles and like-named devices used in the transportation of people for short distances of travel (less than 5 miles), as well as vertical reciprocating conveyor systems.

(c) It is understood and agreed that the preassembly of all escalators, moving stairways and link belt carriers that may be done in the factory shall include the following:

1. Truss or truss sections with tracks, drive units, machines, handrail drive sheaves, drive chains, skirts on the incline sections but not curved sections, step chains and steps installed and permanently aligned.
2. Balustrade brackets may be shipped attached but not aligned.
3. Setting of all controllers and all wiring and conduit from the controller.

All other work on escalators, moving stairways and link belt carriers shall be performed in the field before or after the truss or truss sections are joined and/or hoisted and placed in permanent position. This includes any and all work not done in the factory. The erecting and assembly of all theater stage and curtain elevator equipment and guides and rigging thereto, organ consoles and orchestra elevators

(d) All wiring, conduit, and raceways from main line feeder terminals on the controller to other elevator apparatus and operating circuits. Controllers are not to be shipped from the factory with extended wiring attached thereto.
(e) The erecting of all guide rails.
(f) The installation of all grating under the control of the Company. The installation of all counterweight screens, overhead work, either wood or iron, and all material used for mounting of elevator apparatus in machine room, overhead or below.
(g) The drilling of overhead beams for attaching machines, sheaves, kick angles, and all other elevator equipment.
(h) The setting of all templates.
(i) All foundations, either of wood or metal, that should take the place of masonry.
(j) The assembly of all cabs complete.
(k) The installation of all indicators.
(1) The erecting of all electrical or mechanical automatic or semi-automatic gates complete.
(m) The hanging of all automatic or semi-automatic elevator hoistway doors, together with the installation of hangers and tracks.
(n) The installation of all devices for opening and closing and locking of elevator car and hoistway doors and gates.
(o) The drilling of doors for mounting of closing devices.
(p) The drilling of angle supports for mounting of closing devices except one template hole.
(q) The drilling of sills for sill trips.
(r) The operating of temporary cars.
(s) The setting of all elevator pressure open or pit tanks.
(t) The setting of hydraulic power units (power units include: motor, pump, drive valve system, internal piping, muffler, internal wiring, controller and tank). Where power units arrive in parts, they shall be assembled at the job site. The wiring and piping to and between multiple hydraulic power units shall be performed at the job site.
(u) All air cushions with the exception of those built of brick or those put together with hot rivets.
(v) Landing door entrances.

Craft: FENCE ERECTOR (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Fence Erector……..……...……51.03

ADD ZONE RATE

In addition to FENCE ERECTOR rates add the applicable amounts per hour, calculated based on a road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$6.00
Zone 3	150 to 300 miles	$7.00
Zone 4	300 miles or over	$8.00

No remote area pay shall be paid within ten (10) miles of employee's permanent place of residence in the State of Nevada.

ADD PREMIUM PAY

One and one half (1 ½) the regular straight time hourly rate shall be paid:

1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:

1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS

If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION:

Includes but is not limited to:

1. Erecting or repairing chain link, wooden, tortoise, wire/wire mesh, or temporary fencing;
2. Mixing and pouring concrete around bases of posts and tamping soil into post hole to embed post;
3. Digging post holes with a spade, post hole digger or power-driven auger;
4. Aligning posts through the use of lines or by sighting;
5. Verifying vertical alignment of posts with a plumb bob or spirit level.

Craft: FLAG PERSON (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Flag Person…….48.91

ADD ZONE RATE

In addition to FLAG PERSON add the applicable amounts per hour, calculated based on a road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$6.00
Zone 3	150 to 300 miles	$7.00
Zone 4	300 miles or over	$8.00

No remote area pay shall be paid within ten (10) miles of employee's permanent place of residence in the State of Nevada.

ADD PREMIUM PAY

One and one half (1 ½) the regular straight time hourly rate shall be paid:

1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:

1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS

If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION

FLAG PERSON, includes but is not limited to:

1. Directing movement of vehicular traffic through construction projects;
2. Distributing traffic control signs and markers along site in designated pattern;
3. Informing drivers of detour routes through construction sites;

Craft: FLOOR COVERER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Floor Coverer Journeyman……60.65
Floor Coverer Foreman…..…….64.49

ADD PREMIUM PAY

Any work performed over eight (8) hours per day and on Saturdays shall be compensated at time and one-half (1-1/2x) the appropriate hourly rate. All work performed on Sundays, holidays and over twelve (12) hours in one (1) day shall be compensated at two times (2x) the appropriate hourly rate. In the event a day's work is lost because of severe weather conditions or major mechanical breakdown, work may be performed on a voluntary basis on a Saturday at the straight time hourly rate for eight (8) hours provided the straight time hours worked in one (1) week do not exceed forty (40) hours.

RECOGNIZED HOLIDAYS

New Year's Day, Memorial Day, Independence Day, Labor Day, Admissions Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Southwest Mountain States Regional Council of Carpenters.

All work in connection with the installation of floor coverings (with the exception of wood floors which are covered by the Master Labor Agreement) such as measuring, cutting, installing, or removal and other preparation for installation of all types of floor covering. All types of floor covering regardless of material (except wood flooring), including but not limited to all types of carpeting, linoleum, vinyl, cork, laminate floors; glue down wood floor applications; rubber, cork, asphalt, linoleum or other types of tile; artificial turf and sports surfaces; any type of resilient flooring such as epoxy, polyurethane or similar materials regardless of how applied; and ceramic tile and stone. Included in the work covered is the application or installation of any type of moisture barrier and any type of underlayment or subfloor in connection with a flooring installation.

Craft: GLAZIER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Glazier Journeyman……33.96
Glazier Foreman…..……36.41
Glazier Superintendent..……..……37.63

ADD PREMIUM PAY
One and one half (1 ½) the regular straight time hourly rate shall be paid:
1. For first two (2) hours worked over eight (8) on a regular five (5) day week.
2. For all hours worked on Saturday. Employees shall not work less than four (4) hours.

Double the regular straight time hourly rate shall be paid for all time:
1. For all hours worked beyond ten (10) hours shall be paid at two (2 X) times the straight time rate.
2. For all hours worked on Saturday beyond 8 hours (2 X) times the straight time rate.
3. For hours worked Sunday and Recognized Holidays. Employees shall not be employed for less than four (4) hours.

*Also, if there is less than 10 hours between shifts, the 2nd shift becomes an extension of the 1st shift.

*Shift Differential: To be paid for all work performed between the hours of 5:30 pm to 5 am and it will be compensated at 10% differential for all hours worked including overtime. Overtime that falls between these hours will still be paid at the appropriate overtime rate.

20.1 High Pay – work that is thirty (30) or more feet in height above grade on an elevated, mechanically operated platform (including but not limited to: swing stage, boatswain chair, crane basket, heck lift, boom lift), rappelling work, work at slab edge outside the perimeter safety cable or work at slab edge inside the perimeter safety cable if the work being performed puts the employee in a free fall situation because the perimeter safety cable is no longer at or near waist level shall be paid at the rate of one dollar ($1.00) per hour above the straight time rate for actual hours worked. High time shall be paid in addition to all other premiums involved.

25.2 Foremen:
a) The selection of the individual to act as foreman shall be at the discretion of the Employer. On outside jobs lasting three (3) days or more and which four (4) workers or more are employed, one (1) foreman will be designated and he shall be paid ten percent (10%) per hour over the highest journeyman Glazier supervised. Inside foreman shall receive ten percent (10%) per hour above the journeyman's wage scale.

b) When a glazier is requested to perform welding on the job site, he/she will be compensated one dollar ($1.00) over his regular rate of pay. All equipment, including hoods, leather and gloves, will be supplied by the Employer.

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between DC 16 and Glazing Contractors Associations of NV and Independent Contractors

General Glazing shall include the layout and setting by hand or with machines, cutting, preparing handling or removal of the following and incidental and supplemental to such work: setter of art glass, prism glass,

beveled glass, leaded glass, automobile glass, window glass, mirrors of all types, wire glass, ribbed glass, ground glass, colored glass, figured glass, vitrolite glass, carrara glass, and all other types of opaque glass; glass chalk boards, structural glass, tempered and laminated glass, thiokal, neoprene and all other types of glass cements, all types of insulating glass units, solar heat collectors containing glass or glass substitutes, glass hand rail, electric glass, bathroom fixtures, all plastics when used in place of glass, all other similar materials when used in place of moldings, tubber, lead and all types of mastic in wood, iron, aluminum or sheet metal, sash skylights, doors, frames, stone, wall cases, show cases, books cases, sideboards, partitions, automatic doors, automatic sliding doors, revolving doors, luminous ceilings, gaskets, and plastic mirrors, the installation of the above materials, temporary or permanent, on or for any building in the course of repair, remodel, construction or alteration.

The installation of all glass framing or support systems for the same such as extruded, rolled or fabricated metals or any materials that replace the same, such as plastics, metal tubes, mullions, metal facing materials, muttins, facia trim moldings, porcelain panels, skylights, showcase doors and relative materials, including those in any or all of the buildings related to the store front and window wall, curtain wall, stop wall, skylight and dome construction. Glazing and installation of door and window frames, such as patio sliding or fixed doors, vented or fixed windows, shower doors, bath tub enclosures, screens storm stash where the glass becomes an integral part of the finished products, the tinting and coating of glass for the reflecting of heat and light, showcase tops, glass shelving of all types and table tops. In addition, such caulking, glass to glass, glass to metal, metal to concrete and panel to panels.

Production, maintenance, including all incidental and supplemental to, but not limited to Employees, and Employees who are engages int eh cutting, preparing, handling and selecting of glass and /or mirror, bevellers, silverers, blockers, scratch polishers, sand-blasters, flat glass wheel cutters, miters cutters, engraver, hole-drilling machine operations, belt sanding, automatic beveling, multi-grove edging machines, semi- and automatic-cutting machines, grinding, polishing unpacking ad racking or glass, glass packing, glass and mirror cleaning, mirror stripping, all operations in the manufacturing, framing and fabrication and assembling of all insulating units, assembling of all glass insulated solar heat collectors containing glass or glass substitutes, molding or mirrors, manufactured and assembly of sliding glass or mirror doors, the operating of all machines and equipment for these operations, oven operations, glass hangers, glass benders and operators, safety glass fabricators, inspectors, janitors, maintenance mechanics, loading and unloading or truck and railroad cars.

Craft: Highway Striper (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Highway Striper……53.53
Highway Striper Foreman……54.03

ADD ZONE RATE

In addition to HIGHWAY STRIPER rates add the applicable amounts per hour, calculated based on a road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$6.00
Zone 3	150 to 300 miles	$7.00
Zone 4	300 miles or over	$8.00

No remote area pay shall be paid within ten (10) miles of employee's permanent place of residence in the State of Nevada.

ADD PREMIUM PAY

One and one half (1 ½) the regular straight time hourly rate shall be paid:

1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:

1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS

If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, Memorial Day, 4th of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION:

Includes but is not limited to:

1. Painting highways, streets and parking surfaces by using manually propelled or mechanically propelled machines, brushes, rollers or spray guns;
2. Installing any device or application of any material used in lieu of paint for traffic direction, including, without limitation, buttons, tapes, plastics, rumble bars and other similar materials;

Craft: Hod Carrier-Brick Mason Tender (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Brick Mason Journeyman……..51.28
Brick Mason Foreman……51.68

ADD ZONE RATE
In addition to Hod Carrier Brick Mason Tender rates add the applicable amounts per hour, calculated based on road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone Rate	75 miles and over	$8.13

ADD PREMIUM PAY
One and one half (1 ½) the regular straight time hourly rate shall be paid:
1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:
1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS
If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between No, NV Masonry Contractors and LIUNA Local 169

Conveying of all materials used by the Brick and Stone Masons from the first point of delivery to the Mechanic whether done manually or by a piece of machinery or equipment devised to replace the wheelbarrow or buggy, including but not limited to the forklift. The handling of Bricks, Blocks, mortar, or any other material to serve the bricklayer in any capacity building and dismantling scaffolds of any kind or type used by Bricklayers for masonry work including but not limited to tower scaffolds, access scaffolds, or other specialty scaffolds, mixing and tempering mortar by hand and/or machine, mixing grout and cleaning up after the bricklayer, the repairing and maintenance of all equipment, either on the job or in the yard.

Craft: Hod Carrier-Plasterer Tender (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Plasterer Tender-Journeyman..……..51.62
Plasterer Tender- Gun Tender..……..52.62
Plasterer Tender-Foreman…….52.98

ADD ZONE RATE
In addition to: HOD CARRIER-PLASTERER TENDER rates add the applicable amounts per hour, calculated based on road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone Rate	75 miles and over	$8.00

ADD PREMIUM PAY
One and one half (1 ½) the regular straight time hourly rate shall be paid:
1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:
1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS
If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between Plasterers Contractors and LIUNA Local Union 169

Any Employee within the scope of this division tending or serving any other worker performing plasterers work, any plasterer, plasterers, or apprentices in any capacity performing plasterers work including but not limited to, handling and conveying of all materials after delivery used by plasters, including but not limited to, inside finish coat, outside finish coat, brown coat, scratch coat, sprayed or trawled on fireproofing, EIFS systems, and other materials or systems for the same or similar purpose whether done manually or by a piece of machinery or equipment devised to replace the wheelbarrow or buggy, including but not limited to the forklift, tusky hoist, and rigging and signaling for cranes to the point or points of application or installation, making mixing and preparing after delivery all materials used by plasters, whether by hand or machine including but not limited to mixers, pumps for plaster or fire proofing, plaster, finish coats, fireproofing, including Monocoat, Cafco or other materials for the same or similar use, moving any rolling scaffolding, building and handling all necessary trestle, scaffolding and planking of scaffolding for plasterers and lathers, building mortar boxes, mortar boards and stands, and the repairing and maintenance of all equipment either on the job or in the yard, the spreading of all temporary protective drop cloths, building paper or plastic covers and taping of same (in a composite crew with the plasterers when necessary), the cleaning of all floors, and debris, behind the plasterers or any other worker performing plasterers work in connection with the work performed all work necessary for cold weather protection and cure including but not limited to handling installing or tending to blankets, visqueen, and space heaters, and running putty.

Tending to plasterers or any other worker performing plasterers work on EFIS system work shall include all work after the wallboard is installed including but not limited to any preparatory sealing or leveling, placing foam, mesh, and plaster including any rough, finish, and color coats.

For sprayed on fire proofing work only, including Monocoat, Cafco or other materials for the same or similar use an Employer signatory to this Agreement and the Local 169, Laborers Master Agreement may employ Laborers at the Group 1 wage rate to perform overspray protection, the spreading of all temporary protective drop cloths, building paper or plastic covers and taping of same, the cleaning of all floors, and debris, cold weather protection and cure including but not limited to handling installing or tending to blankets, visqueen, and space heaters and moving rolling scaffolding.

Craft: Ironworker (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

SEE AMENDMENT 1

Ironworker - Journeyman…..…….82.86
Ironworker - Foreman…..……..…….87.61

ADD ZONE RATE

In addition to Iron Worker rates add the applicable amounts per day, calculated based on a road mile from the Reno City Hall or Las Vegas City Hall.

Zone 1	60 to 75 miles	$20.00
Zone 2	75 to 100 miles	$25.00
Zone 3	100 miles and over	$75.00

ADD PREMIUM PAY

One and one half (1X) the regular straight time hourly rate shall be paid:
1. For the first two (2) hours worked in excess of eight (8) on a regular workday Monday-Friday
2. For the first eight (8) hours on Saturday

Double the regular straight time hourly rate shall be paid for all time:
1. For all hours worked over ten (10) hours in one day or shift.
2. For any hours worked on Sunday.
3. For all hours worked over eight (8) on Saturday
4. For all hours worked on Holidays

Shift Pay
1. 2nd shift add 6% of hourly wage
2. 3rd shift add 13% of hourly wage
3. Dedicated shift add 6% of hourly wage

RECOGNIZED HOLIDAYS

New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Admission (Nevada) Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB CLASSIFICATION: Excerpt from Agreement between NV AGC and DC of Ironworkers
Field fabrication and/or erection or deconstruction of structural, ornamental and reinforcing steel, including but not limited to the fabrication, rigging and signaling, erection and construction of all iron and steel, ornamental lead, bronze, brass, copper and aluminum, plastics and all other substitute materials, including, but not limited to, composites, carbon fiber and fiberglass, all barrier railings, handrail, aluminum, steel, glass and plastic, reinforced concrete structures or parts thereof; bridges, viaducts, inclines, dams, docks, dredges, vessels, locks, gates, guides, aqueducts, reservoirs, spillways, flumes, caissons, cofferdams, subways, tunnels, cableways, tramways, monorails, blast furnaces, stoves, kilns, coolers, crushers, agitators, pulverizers, mixers, concentrators, ovens, cupolas, roof decking such as but not limited to "Cofar", "Trusdeck", Mahon "M"; smoke conveyors, penstocks, flag poles, drums, shafting, shoring, fur and storage rooms, fans and hot rooms, stacks, bunkers, conveyors, dumpers, elevators, vats, tanks, enamel tanks, enamel vats, towers, pans, hoppers, plates, anchors, caps, corbels, lintels, Howe and combination trusses, grillage and foundation work, grating, bucks, partitions, hanging ceilings, hangers, clips, brackets, flooring, floor construction and domes, rolling shutters, curtains, frames; aluminum, rolling fire, won and iron doors, including supports; cast tiling, air ducts, duct and trench frames and plates; wire work, railings, wire cable including pipe, guards, fencing, grill work, sidewalk and vault lights, skylights, roofs, canopies, light steel

framing, marquees, awnings and other related equipment elevator and dumb waiter enclosures, elevator cars, tracks, fascias, aprons, operating devices, steel and aluminum sash, hardware and screens, frames, fronts, lockers, racks, book stacks, tables, shelving, metal furniture, seats, chutes, escalators, stairways including pre-engineered stairs, ventilators, boxes, fire escapes, signs, jail and cell work, safes, vaults, vault doors, safe deposit boxes, corrugated sheets when attached to steel frames, including insulation; frames in support of boilers; materials altered in field such as framing, cutting, bending, drilling, burning and welding including by acetylene gas and electric machines; metal forms and false work pertaining to concrete construction; seismic isolation systems and dampening systems including base isolators, sectional water tube and tubular boilers and stokers; traveling sheaves, vertical hydraulic elevators, bulkheads, skip hoists, making and installation of articles made of wire and fibrous rope, rigging in connection with pumps, compressors, forced and induced draft fans, air meters, Bailey meters, agitators, oxygen converters, cindering machines, pelletizing machines, reactor vessels, reactor spheres, completed tanks and assembled sections of completed tanks, scroll cases, refineries, hydroelectric power houses and steam plants, cogeneration plants, vessels and government departments; false work, travelers, scaffolding, pile drivers, sheet piling, derricks and powered derrick swinger including the erection, installation, handling and operating. Cranes erection, installation, handling and operating of same on all forms and types of construction work. The operation of Valla and Spider type battery and/or propane powered portable floor cranes having no operator seat utilized to install ironworker scope of work and the same on all forms and types of construction work. Crane work at the ports, including hammer-head cranes, container cranes and rubber tire cranes. Offloading, relocations, and commissioning of all burning and removal of sea bracing track layout; erection of apex boom extensions, back reach extensions, and rail replacement. Includes all welding, containment and structural modifications of the aforementioned items; railroad bridge work including maintenance thereof; moving, hoisting and lowering of machinery, modules, skid modules and placing of same on foundation, including bridges, cranes, intermittent use forklifts, derricks, buildings, piers and vessels; loading, unloading, necessary maintenance, erection, installation, removal, wrecking and dismantling of all of the above and all reinforcing work and submarine diving in connection with or about same; erection of steel towers, chutes and spouts for concrete where attached to towers and handling and fastening of cables and guys for same; unloading, racking, sorting, cutting, bending, hoisting, placing and tying including the use of any and all mechanical tying devices, burning and welding including stud welding of all iron, steel and metal in reinforced concrete construction including mesh for floor arches and the making of hoops and stirrups, metal forms and metal supports thereof; jacking of slip forms, installation of all wire, cable, parabolic cans, steel and all other materials, including, but not limited to, composites, carbon fiber and fiberglass, used for the purposes of prestressing including grouting of ducts, post stressing concrete girders, beams, columns, etc.; loading, unloading, hoisting, handling, signaling, placing and erection of all prestressed, post stressed, precast materials, G.F.R.C., Dryvit System, including the securing by bolting and/or welding and the installation of steeltex and wire mesh of any type when used for reinforced concrete construction; erection of all curtain wall; glass handrail; stay in place deck; automated and/or mechanical parking structures; offloading, staging, hoisting and setting of modular structures and micro-units; curtain wall systems and associated sealants. Window wall and entrances, panels, insulated and non-insulated, factory and field assembled, porcelain enameled panels, ceramic, laminated spandrelite, louvers and sunscreens; application of thiokol, neoprene and other sealants used to seal materials installed by Iron Workers; installation and handling of phenolic panels, including but not limited to, Trespa products and all similarly related materials and/or systems; installation of metal window stools and sills; installation of aluminum, bronze and steel thresholds; erection and dismantling of all types of cranes and changing of booms; erection of rock, sand and gravel plants, dismantling and loading out conveyors, aggregate plants, batch plants, ableways, refrigeration plants, etc.; erection and dismantling of Monigan walking dragline, launchhammer bucket wheel excavator and other trenching equipment; signaling on highlines, whirley cranes and derricks, buck hoists, man hoists, fork lifts, material towers and scanning antennae; metal and steel supports of all types; fabrication, assembling and erection of offshore drilling platforms or similar installations; dust collectors, precipitators, multi-plate, specialty welding processes, unloading, loading, hoisting, handling and rigging of all building materials delivered to the job site; hanging ceilings, tees, channels, beams, acoustical elements, sound barriers, computer floors, etc.;

installation of stage rigging (including counterweights), curtains, draperies, traverse rods, tracks, cables, window cleaning equipment, powered work platforms, including and loading and unloading, erection installation and removal of powered chassis mounted elevating mast climbing work platforms, rigging in connection with display shows; ski lifts, etc.; wrecking of bridges, viaducts, elevated roads and structural steel and iron in buildings; all steel frames for openings, all porches, verandas, canopies and balconies; all overhead travelers, duo rails, tram rails; erection, setting, repairing of guard or collision rails on bridges and approaches, road ways or any other structures; handling and setting of all types of steel and metal joists, including metal box joists for truss lab and preformed keystone shaped metal joists; erection of steel and metal houses and packaged buildings; all translucent and plastic material on steel frame construction; the erection of solar energy systems, including but not limited to, photo voltaic, heliostat and parabolic systems, energy producing windmill type towers, wind turbine erection to included, but not limited to, prep work, boltup, tensioning or torque of bolts on base and all tower section turbine and blade assemblies; nuclear reactors, electromagnetic shielding plates and atomic vessels including all component parts; the plumbing, aligning and leveling of all materials and equipment through the use of optical instruments, LASER beams, etc., and the use of instruments to establish layout, installation and disposition of ironworker installed scope of work; the unloading, distributing, stockpiling and handling of all materials coming under the jurisdictional claims of the UNION such as to rail heads, storage yards, loading and unloading, hoisting, handling, signaling of all fabricated material and equipment at the jobsite (except FOB deliveries) related to the Iron Workers jurisdiction that is within the individual employers' contractual scope of work including from and to barge and ships to a lay down yard or construction project, etc., shall be done by the Iron Workers.

All reinforcing work in connection with field fabrication, including but not limited to the pre-assembly of reinforcing cages, loading and unloading, handling, racking, sorting, cutting, bending, hoisting, intermittent use of forklifts, placing, burning, welding and tying of all material including the use of any and all mechanical tying devices, or substitute materials, including but not limited to, composites, carbon fiber and fiberglass, stainless steel, used to reinforce concrete construction shall be done by Iron Workers within the individual employers' scope of work at the jobsite, excluding FOB deliveries. A working Iron Worker shall be employed for maintenance on jobs of substantial size while concrete is being poured on reinforcing steel, wire mesh and paper back steeltex but will not be required as a stand-by man. All work in connection with the installation, alignment, repair & modification of panelized roofing systems, pre-engineered fabric structures, aluminum clarifier coverings, carports, ministorages, and dock planks. All work in connection with the installation, alignment, repair and modification of bleachers, planking and stadium seating. All work in connection of installation of amusement rides including, but not limited to, the erection and alignment of all track, machinery and related components.

Craft: Laborer (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Landscaper ……45.62
Furniture Mover ……47.12
Group 1……50.78
Group 1A……48.91
Group 2……50.88
Group 3……51.03
Group 3A……54.46
Group 4……51.28
Group 4A……53.78
Group 5……51.58
Group 5A……53.53
Group 5A Foreman…… 54.03
Group 6
Nozzlemen, Rodmen……50.58
Gunmen, Materialmen……50.58
Reboundmen……50.93
Gunite Foreman……51.98

ADD ZONE RATE
In addition to LABORER rates add the applicable amounts per hour, calculated based on a road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$6.00
Zone 3	150 to 300 miles	$7.00
Zone 4	300 miles or over	$8.00

No remote area pay shall be paid within ten (10) miles of employee's permanent place of residence in the State of Nevada.

ADD PREMIUM PAY
One and one half (1 ½) the regular straight time hourly rate shall be paid:
1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:
1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS
If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between AGC and LIUNA Local 169

The construction, erection, alteration, repair, modification, demolition, addition, improvement of all building, heavy and highway, utility, industrial and all other type(s) of construction.

SEE GROUP CLASSIFICATIONS

Craft: LUBRICATION AND SERVICE ENGINEER (MOBILE AND GREASE RACK) (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Lubrication and Service Engineer (mobile and grease rack)…….74.93

ADD ZONE RATE

In addition to: **LUBRICATION AND SERVICE ENGINEER (MOBILE AND GREASE RACK)** rates add the applicable amounts per hour calculated based on a road miles from the Carson City Courthouse or Washoe County Courthouse.

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$5.00
Zone 3	150 to 300 miles	$6.00
Zone 4	300 miles and over	$7.00

ADD PREMIUM PAY

1. One and one-half (1-1/2) times the applicable straight-time rate for the day, shift, work, equipment and classification shall be paid for all work (including repair work and field survey work) performed on Saturday and before a shift begins and after it ends, except when operating equipment servicing a craft that is receiving double time on commercial building construction, in which case double time shall be paid.

2. Overtime. The following rates shall apply on Sundays and holidays and all work before a shift begins and after it ends:

RECOGNIZED HOLIDAYS

Holidays. Double the applicable straight-time rate shall be paid for all work (including repair, maintenance and field survey work) performed on Sundays and the following holidays: New Year's Day (January 1); Memorial Day (last Monday in May); Independence Day (July 4); Labor Day (1st Monday in September); Nevada Admission Day (last Friday in October); Thanksgiving Day (4th Thursday in November); the day after Thanksgiving Day; and Christmas Day (December 25). Holidays falling on Sunday shall be observed on the following Monday. Holiday hours shall be reckoned on the same basis as Sunday hours.

Saturday Shift Period. On any shift, Saturday shall be the twenty-four-hour period commencing at 12:00 midnight Friday.

Sunday Shift Period. On any shift, Sunday shall be the twenty-four-hour period commencing at 12:00 midnight Saturday.

3. For hours worked in excess of 12) on any such workday, an Employee shall be paid two (2) times the regular straight-time rate of pay for each hour so worked.

Craft: Mechanical Insulator (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Mechanical Insulator-Mechanic…….....……78.46
Mechanical Insulator-Foreman….. ...……82.46
Mechanical Insulator-General Foreman ..……84.46

ADD ZONE RATE
In addition to MECHANICAL INSULATOR rates add the applicable amounts per DAY, calculated based on a radius figured from Reno City Hall:

Zone 1	0 to 20 miles	$15.00
Zone 2	21 to 40 miles	$25.00
Zone 3	41 to 60 miles	$35.00
Zone 4	Over 60 miles	$100.00
Zone 4: Up to $140.00 per day with receipts		

ADD PREMIUM PAY
One and one half times the minimum hourly wage rate shall be paid for the first two (2) hours of overtime work, directly following eight (8) hours Monday through Friday, and for the first ten (10) hours worked on Saturdays. Double the minimum hourly wage rate shall be paid for all other overtime worked Monday through Friday and in excess of ten (10) hours on Saturdays.

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from the Int'l Assoc. of Heat and Frost Insulators and Allied Workers Local 16 and the No. CA Chapter. Western Insulation Contractors Assoc.

65. Lining of all mechanical room surfaces and air handling shafts.
66.The filling and damming of fire stops and penetrations including, but not limited to, electrical and mechanical systems.
67. All foam applications for the purpose of thermal, acoustical, or fire protective purposes, including RTV foams or equivalents, applied to mechanical or electrical systems.
68. All duct lining, and duct wrapping, done on the job site, direct application and installation of fire protection of grease ducts, exhaust systems, or any other ductwork for acoustical or thermal purposes.
69. The insulation of all field joints on pre-insulated underground piping, and the pouring of Gilsilite or its equivalent.
70. Any finish material which is contiguous to the thermal or acoustical application.
71. The preparation, distribution of materials on job sites, assembling, molding, spraying, pouring, mixing, hanging, adjusting, repairing, dismantling, reconditioning, maintaining, finishing, and weather proofing of hot or cold thermal or acoustical insulation with such materials as may be specified.
72. The application of any material, including metal and PVC jacketing, Alumaguard or equivalent**,** on piping, fittings, valves, flanges, boilers, ducts, plenums, flues, tanks, vats, equipment and any other hot or cold surface for the purpose of thermal control.
73. The Agreement shall cover all other work of a specialty nature.

Craft: MILLWRIGHT (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Millwright Journeyman…..……..……77.22
Millwright Welder…..……..……80.22
Millwright Foreman.……..……81.90
Millwright General Foreman..……..……87.04

ADD ZONE RATE

In addition to MILLWRIGHT rates add the applicable amounts per hour, calculated from Reno, Nevada City Hall. The Employer agrees to provide each employee zone pay as established below if the project is further than forty-five (45) miles calculated via the "shortest route" filter using Google Maps from the address of city hall of respective dispatch points.

Zone 1	Up to 45 Miles	$0.00
Zone 2	More than 45 miles but less than 101 Miles	$4.00
Zone 3	101 or more Miles	$6.00

ADD PREMIUM PAY

Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight-time work shall be paid at one and one half (1½) times the straight-time rate of pay. All additional overtime will be paid at two (2) times the straight-time rate of pay.
All work performed on Sunday and Holidays shall be paid at two (2) times the straight-time rate of pay.
Any work performed on Labor Day shall be paid at triple (3x) the regular straight time hourly wage rate.

Lodging: If the project is further than forty-five (45) miles calculated via the "shortest route" filter using Google Maps from the address of city hall of the respective dispatch points listed above, the Employer agrees to furnish acceptable single occupancy lodging to each employee. Employers are encouraged to use commercial facilities and lodges, however, when such facilities are not available, per diem in lieu of room and lodging shall be paid at the rate of one hundred ten dollars ($110.00) per day, or part thereof, from the date of hire for the project to the date of termination of employment on the project.

RECOGNIZED HOLIDAYS

New Year's Day, Washington's Birthday (President's Day), Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving, Christmas Day.

JOB DESCRIPTION Excerpt from Southwest Regional Council of Carpenters' Millwright Regional Master Construction Agreement.

Section 1.4 Millwright Jurisdiction.
The machinery, equipment, processes and associated components listed below which are identified for the purpose of description only, falls within the jurisdiction of the United Brotherhood of Carpenters and Joiners of America (Millwrights). Although some components of machinery and/or equipment may be described in one application or location and not in another, it shall not be excluded from our craft jurisdiction when, to avoid repetition, it is not described in other applications, and such jurisdiction shall be applied to the initial commissioning, maintenance, decommissioning, and recommissioning of all associated machinery and/or equipment.

Section 1.4.1
Millwright craft jurisdiction shall include the loading, unloading, hoisting, rigging by any means, transferring, moving, cleaning, disassembling, assembling, moving and setting and removal of skids, welding, burning, erecting, calibrating, precision grouting, supporting, aligning, starting-up and testing, adjusting, repairing, and the maintaining of all machinery and equipment, be it powered by, or receiving power from, steam, gas, gasoline, diesel, biodiesel,

hydrogen, jet, electric, pneumatic, magnetism, adiabatics, diabatics, isothermics, water, hydropnuematics, solar, thermal, mineral, atomic, rocket, nuclear, chemical, wind, waste product of any kind or any other source, regardless of whether or not such machinery or equipment is temporarily or permanently installed or located.

Section 1.4.2
Millwright craft jurisdiction shall include all activities necessary to: set all engines, motors, dynamos, generators, diesel generators, motor restraints and supports; install, measure and align with optical and/or electronic instruments when necessary the reactors, control, push and shut-down rods, rod pressure housing, drives, guide sleeves and other related equipment in reactors, turbines, castings, combustion chambers and all its related components; the attachment and final connection of the inlet manifolds and exhaust ducts, cylinders, diaphragms, gaskets, containment barriers, rotors, blade rings, blade or bucket assemblies, hydrogen coolers, blower assembles, packing joints on hydrogen coolers, exciter or Alterex and all others, turning gear, extension box, welding of extension box, lagging, stretching of coupling bolts or others; perform oil flush; install turbine lube oil tank, pumps and related component skids, filters, thrust bearings, magnetic bearings, the sweating on and shrinking of bearings, couplings, shafts and others, sole plates and machine bases; perform all precision grouting using the following materials: epoxy, wet, non-shrink, dripacking or other types; perform demineralizing and hydromation; install mechanical dust systems, sensors, air compressors, super charges, coolers, boiler controls and linkage, thermal management systems, Bailey Meters or similar devices and their linkages; installation, maintenance and removal of all instrumentation, gauges, antennae and other communication devices, fluid drives, power drive trains, embedded guides for traveling screens, traveling screens, roller, slide, knife, lock and sluice gates, limit torques on mechanical valves, gates and others, tainter valves, limit switches, trips, triggers or switches, including the brackets that are attached to, stop logs, dam rollers, transfer cars and gear head motors.

Section 1.4.3
The setting of variable drives, fans, coal cranes, truck cranes or other types, including servicing and the adjusting and aligning of mechanical equipment within the cranes, crane rails and all other types of rails which would carry mechanically activated equipment, including their alignment, installation, removal, servicing, and alignment of hydraulic and pneumatic lifts and passenger boarding bridges, monorail (all sizes), magnetic propulsion systems, trolleys, pumps and their associated components, packaging equipment, refrigerating equipment, chillers, and related equipment, lantern rings, packing glands, packing for pumps, pollution equipment, carbon absorbers and filtration, heat exchanges, grain, ball, hammer, roller mills, pulverizers and others, crushers and beaters, hoppers, bins, chutes and spouts, turn tables, shears, casing machines, robots, air-veyors, conveyors of all sizes, types, and styles regardless of the materials they are constructed with, or mechanically powered conveyances of any type, including their supports, people movers, x-ray and imaging & scanning machines, elevator and platform lifts, dock levelers and locks, roll-up and sectional doors, operable partitions, retractable roofs, magnetic separators, hoists, feeding machinery, Z-loaders, S-loaders, palletizers, Triax equipment, mechanical equipment in scrubbers, pack towers, precipitators, cooling towers and air cooled condensers.

Section 1.4.4
Sewage, Brackish, Desalination, Water Treatment and Mineral Extraction Plants — the disassembly, fabricating, rigging, erecting and aligning of skimmers, rake mechanisms, feed wells, baffles, scum troughs, de-gritting equipment, bar screens, communitors, mixers, pumps, aeration systems, blowers, membrane filtration systems, sequencing batch reaction systems, including related, filter presses, sand filtration systems, ultra violet rack systems, mechanical drive assemblies, conveyors, lines, piping, flanges, brackets, supports, mono rails, gates and setting odor control and detection equipment, (excluding heating, ventilating and air conditioning work). The setting of thru-clean bar, straight line bar, trash, tritor drum, and disc screens, straight line grit, circuline grit, circuline sludge, and circuline mixer collectors, straight line, flash, horizontal slow, vertical slow, and vibra flow feeder machines, pre-aeration and settling tanks, covers for tanks, bowls and basins including stationary or mechanical covers regardless of materials, thickeners, rotoline distributors, sludge bed and settling pond cleaners, digestion systems, heaters, dyna-grind sewage screening grinders, screw pumps, spiral classifer, agitators, junk remover, hydro pulper, cooling fans, lube systems, selectifier screens, hydrosensors, fuel blowers, grizzly screens, trommels, table feeders, dryers, optical sorters, high tension separators, grip dewatering screens, flash mixer, horizontal slow mixer, vertical slow mixer, filter, cone and rotary presses, comminutors, barminutors, degreasers, rotometers, dehumidifiers, benches, pressure cleaning systems & devices, washers for cars, trucks, buses, trains, planes unmanned and autonomous vehicles and other types, hydraulic, servo and pneumatic units, shroud boxes, silencers, scales, load cells, eddy current clutches, disintegrators, dehairing machines, grain handling devices, laboratory equipment, machine shop equipment, ladle cars, stunning pens and doors and gates, activation equipment, racks, material handling platforms, access & egress platforms, catwalks,

transition pieces, the handling and installation, of pulleys, gears, fluid couplings, sheaves and fly wheels, air vacuum, worm, belt, friction, rope, magnetic, chain and gear drives that are directly or indirectly coupled to motors, belts, chains, shafts, or screws, installation of legs, boots, guards and boot tanks, all bin and diverter valves, turn hands and indicators, shafting, bearing cable sprockets, cutting of all key seats in old and new work, troughs, chippers, calenders, rolls, winders, rewinders, slitters, cutters, wrapping machines, blowers, forging machines, pneumatic, electric and hydraulic rams, servo actuators, extractors, expellers and extruders, ball and dust collectors, splicing of ropes and cables.

Millwright craft jurisdiction on energy generation facilities shall include all loading, unloading, movement, hoisting, preparation, uncrating, preparation of nacelle units prior to installation or removal, installation, setting, removal, alignment, and final torquing and tensioning of any mechanical component used in the generation of power, including any incidental wiring or piping. This shall include all aspects of power trains, drive and tracking systems, elevation and azimuth drives, energy collection optimization systems, all rams, dampers and other stabilization devices, antennae, bearing housing assemblies and units, actuators, pulleys, gears, access points, rotational connections, mounting and alignment of tracks, axles, bearings, rotational joints, or any other device which allows for the automated or manual movement of equipment post-installation, all turbines, and wind, wave and tidal analysis equipment. It shall also include all work associated with energy collection and storage facilities, including the loading, unloading, movement, hoisting, preparation, installation, setting, and alignment of racking systems, torque tubes, modules, batteries, energy storage systems, cooling or control systems, inertia systems or other equipment or machinery, and all incidental wiring or piping thereof.

Section 1.4.5
The laying out, fabrication and installation of protecting equipment including: machinery guards; the making and setting of templates for machinery; the fabrication of bolts, nuts, pans; the drilling or creating of holes in machinery for any equipment which the Millwrights install, remove, service or inspect, regardless of material; installation of all methods of access and egress and safety devices whether temporary or permanent; all welding and burning regardless of type; the fabrication of all lines, hose or tubing used in the lubrication, operation, cooling or heating of machinery, including the installation of all fluids used to operate, lubricate, cool or heat equipment installed by Millwrights; the cleaning or pressure cleaning of machinery; the machining, grinding, milling, broaching, boring, threading, lapping, field machining, technical bolting and keying that may be necessary for any part of equipment, including the starting up, breaking in, trial running and operational or functional testing of any equipment or machinery installed or handled by the Millwrights, the initial programing of robotics for startup, and the incidental connection and disconnection of machinery and equipment from piping and electrical systems.

Section 1.4.6
Rock, sand and gravel plants, mineral processing plants and batch or aggregate plants: Installation, removal and maintenance of all recycling equipment, separators, centrifuges, classifiers, grates, crushers, conveyors, chutes or piping from one piece of mechanical equipment into another piece of mechanical equipment, or from a vessel into a conveyor, or into other places or mechanical equipment or other mechanical equipment used (for the purpose of description only) to excavate material from one area to another from highways, roadways, waterways or elsewhere.

Section 1.4.7
When optical instruments such as total stations or similar devices, automatic levels, builder’s transits, precision jig transits, tilting levels, theodolites or other precision tools and instruments are used to locate, set, scan-to-BIM or as-Built measure and verify machines, these tools are considered a tool of the Millwright trade and are to be used by Millwrights to set the equipment or machinery.

Section 1.4.8
Incidental asbestos removal on equipment in which Millwrights normally remove during maintenance and repair work.

Section 1.4.9
Any new equipment or technology designed to replace any of the equipment described above shall remain in the craft jurisdiction of the Millwrights.

Craft: OPERATING ENGINEER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Operating Engineers	(SEE GROUP CLASSIFICATIONS)
Group 1	69.91
Group 1A	72.67
Group 2	73.20
Group 3	73.47
Group 4	74.21
Group 5	74.51
Group 6	74.68
Group 7	74.93
Group 8	75.52
Group 9	75.84
Group 10	76.19
Group 10A	76.38
Group 11	76.62
Group 11A	78.26
Group 11B	79.07
Foreman	78.26

Add 12.5% to base rate for “Special” Shift

Add Operating Engineers Zone Pay
Add Premium Pay

Craft: OPERATING ENGINEER (Union Rate)
STEEL FABRICATOR & ERECTOR

Prevailing wage rates include the base rate as well as all applicable fringes

Operating Engineers	(SEE GROUP CLASSIFICATIONS)
Group 1	85.21
Group 1 Truck Crane Oiler	79.04
Group 1 Oiler	77.08
Group 2	83.70
Group 2 Truck Crane Oiler	78.79
Group 2 Oiler	76.87
Group 3	82.46
Group 3 Truck Crane Oiler	78.57
Group 3 Oiler	76.65
Group 3 Hydraulic	78.24
Group 4	80.73
Group 5	79.63

Add 12.5% to base rate for “Special” Shift

Add Operating Engineers Zone Pay
Add Premium Pay

Craft: OPERATING ENGINEER (Union Rate)
PILEDRIVER

Prevailing wage rates include the base rate as well as all applicable fringes

Operating Engineers	(SEE GROUP CLASSIFICATIONS)
Group 1	84.68
Group 1 Truck Crane Oiler	79.22
Group 1 Oiler	77.30
Group 2	83.14
Group 2 Truck Crane Oiler	79.01
Group 2 Oiler	77.10
Group 3	81.69
Group 3 Truck Crane Oiler	78.79
Group 3 Oiler	76.87
Group 4	80.18
Group 5	79.07
Group 6	75.79
Group 7	77.00
Group 8	76.04

Add 12.5% to base rate for “Special” Shift

ADD ZONE RATE

In addition to: **OPERATING ENGINEER, STEEL FABRICATOR & ERECTOR, and OPERATING ENGINEER PILEDRIVER,** rates add the applicable amounts per hour calculated based on a road miles from the Carson City Courthouse or Washoe County Courthouse

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$5.00
Zone 3	150 to 300 miles	$6.00
Zone 4	300 miles over	$7.00

ADD PREMIUM PAY

1. One and one-half (1-1/2) times the applicable straight-time rate for the day, shift, work, equipment and classification shall be paid for all work (including repair work and field survey work) performed on Saturday and before a shift begins and after it ends, except when operating equipment servicing a craft that is receiving double time on commercial building construction, in which case double time shall be paid.

2. Overtime. The following rates shall apply on Sundays and holidays and all work before a shift begins and after it ends:

RECOGNIZED HOLIDAYS

Holidays. Double the applicable straight-time rate shall be paid for all work (including repair, maintenance and field survey work) performed on Sundays and the following holidays: New Year's Day (January 1); Memorial Day (last Monday in May); Independence Day (July 4); Labor Day (1st Monday in September); Nevada Admission Day (last Friday in October); Thanksgiving Day (4th Thursday in November); the day after Thanksgiving Day; and Christmas Day (December 25). Holidays falling on Sunday shall be observed on the following Monday. Holiday hours shall be reckoned on the same basis as Sunday hours.

Saturday Shift Period. On any shift, Saturday shall be the twenty-four-hour period commencing at 12:00 midnight Friday.

Sunday Shift Period. On any shift, Sunday shall be the twenty-four-hour period commencing at 12:00 midnight Saturday.

3. For hours worked in excess of 12) on any such workday, an Employee shall be paid two (2) times the regular straight-time rate of pay for each hour so worked.

JOB DESCRIPTION, includes but is not limited to:

Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement.

Craft: PAINTER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Brush/Roller Painter……..……..53.14
Spray Painter/Paperhanger……..……55.72
Sandblaster..……..……55.14
Structural Steel & Steeplejack……..……55.14
Swing Stage……..……..……55.64
Special Coating Application-Brush……..……55.14
Special Coating Application-Spray……..……55.14
Special Coating Application-Spray Steel..……..……55.14
Foreman..……$2.50 above highest Journeyman

ADD PREMIUM PAY
One and one half (1 ½) the regular straight time hourly rate shall be paid:

1. For all hours worked over eight (8) hours in one day or shift unless the Union is notified when four (4) tens (10's) are instituted.
2. For any hours worked on Saturday from midnight to midnight
3. For any work performed in excess of the regular work week of forty (40) hours.

Double the regular straight time hourly rate shall be paid for all time:
1. For any hours worked on Sunday from midnight to midnight
2. For any hours worked on holidays from midnight to midnight

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between Painters and Allied Trades DC 16 and Independent Painting Contractors of No Nevada.

a. All painting of residences, buildings, structures, industrial plants, tanks, vats, pipes, vessels, bridges, light poles, high tension poles, traffic and parking lines on highways, parking lots, playgrounds, factories, and air line strips; all sign, pictorial, coach, car automobile, carriage, aircraft machinery, ship and railroad equipment, mural and scenic painting; spackling of all surfaces where adhesive materials are used; and all drywall pointing, taping and finishing.

b. All decorators, paperhangers, hard wood finishers, grainers, glaziers, varnishers, enamellers

1. Paperhangers work shall be all material of whatever kind or quality applied to walls or ceilings with paste or adhesive; all tacking on the muslin or other materials which is used as wall or ceiling coverings or covered with material pasted on.

2. The scraping off of old paper, preparing of walls, etc., for paper hangers work.

3. The application of relief, stucco, plaster or decorative work shall not be considered paperhanger's work exclusively.

(c) All men engaged in applying or removing paints, pigments, extenders, metal primers and metal pigments, clear pigments, binders, thinners and dryers, primers and sealers, oil paints and enamels, water

colors and emulsions, clear coatings, waxes, stains, mastics, cement enamels and other special coatings, plastics, adhesives, coatings and sheet rubber and other linings, oils, varnishes, water colors, wall paper, wall coverings or other materials used in the various branches of the trade, and the cleaning and bleaching of all interior and exterior walls and surfaces with liquid, steam, sandblast or any other process and all work incidental thereto.

Craft: PILEDRIVER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Piledriver-Journeyman……..…….61.92
Piledriver-Welder……..……..……62.92
Piledriver-Foreman…..……..……65.81
Piledriver-General Foreman……..……70.09
Tender……...……..…….. 65.81
Stand-By Diver……..……..……..66.81
Diver-Diving (Wet Pay)……..…….. 110.58

ADD ZONE RATE
In addition to PILEDRIVER rates add the applicable amounts per hour, calculated from the Washoe County Courthouse:

Zone 1	Within 75 miles	$0.00
Zone 2	Between 75 to 150 road miles	$6.00
Zone 3	Between 150 to 300 road miles	$7.00
Zone 4	In excess of 300 road miles	$8.00

Workmen performing outside of the free zones shall receive the appropriate remote area allowance for not less than eight (8) hours per day. Remote area differential shall be considered part of the basic wage rate for the purpose of computing overtime hourly wage rates.

ADD PREMIUM PAY
First two (2) hours outside the regular constituted shift shall be at the rate of time and one-half (1½X). Saturdays up to the first twelve (12) hours shall be at the rate of time and one-half (1½X). All additional hours and Sundays and holidays shall be the rate of double time (2X). No work shall be performed on Labor Day, except to preserve life and property.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, 4th of July, Labor Day, Admission Day, Thanksgiving Day, the Friday after Thanksgiving, Christmas Day.

JOB DESCRIPTION
104.1 The Carpenters claim the layout, rigging, tagging, signaling, cutting, burning, welding, chain sawing, driving, setting and pulling of all soldier piles and soldier beams together with all necessary waling, shoring, underpinning, struts, bracing, capping and lagging necessary for construction of subterranean structures of all types to include, but not limited to subways, subway stations, buildings, storm drains, sewers, pipelines and all open cut and cover construction projects. The Carpenters further claim construction of all covers and access mats to include all necessary rigging for setting and removing, whether intermittently or regularly and installation and removal of timber decking.
(a) In addition to the work identified in Article I, the Pile Divers claim the operation of the following types of equipment when the operation of same is incidental to that work which falls under the jurisdiction of the United Brotherhood of Carpenters and Joiners of America or Pile Drivers Local Union No. 2375; mechanical forklifts of all types, boom trucks and any other mobile equipment as assigned by the employer necessary to complete the work. In addition, the operation of the power pack and vibratory hammer controls when driving or pulling, sheet pile, pile, soldier beams, cassinos or casing. . The work includes work on cast & drill holes and operation of the ABI machine.
(1) In the construction of waterfront and marine facilities, such as docks, piers, wharves, bulkheads, jetties, and similar structures, the pile driver classification should continue to apply, up to and including the decking thereof.

(2) On all pile driving and caisson work on both land and water, the Pile Driver classification should apply.
(3) In the construction of wooden bridges whether over land or over water, when composed of heavy timber, the Pile Driver classification should apply.
(4) In the construction of concrete or steel bridges over land, the Pile Driver classification shall apply to the driving of piles and/or caisson work including the forms required for the capping of the piles or caissons immediately top of the piles or caissons. The capping of the piles is herein interpreted as being that concrete, wood, or other material resting on the top of the piles where driven or placed and does not include any further form work above the capping. In many instances it has been found that the capping is called the girder. The above shall apply on such concrete or steel bridges constructed over land, highways, railroads, overpasses and include cloverleafs, interchanges, etc.
(5) In the construction of concrete or steel bridges over water, the Pile Driver classification shall apply up to and including all of the form work to the top of the column, piers, or abutments supporting the steel and/or any other superstructures.
(6) In the erection of false work, when necessary for the support of work under the Pile Driver classification, then such false work shall fall within their classification. False work necessary for the support of work under the Carpenter classification shall be done within such Carpenter classification, with the exception that where pile driving or power equipment is used for heavy timber false work, then such work shall come under the Pile Driver classification. This would include all rigging, signaling and tagging incidental to the placing of the heavy timber.
(7) In the construction of open-cut sewers, the Pile Driver classification shall apply on all piling including wood, steel or concrete sheet piling, all bracing timber and form work incidental to the construction thereof.

Craft: PLASTERER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Plasterer-Journeyman……..……...……55.62
Plasterer-Foreman……..……...……59.57

ADD ZONE RATE
In addition to PLASTERER rates add the applicable amounts per hour, calculated from the South Virginia and Mill Street, Reno, Nevada:

Zone 1	0 to 70 miles	$0.00
Zone 2	70 miles and over	$8.00

ADD PREMIUM PAY
OVERTIME: Eight (8) consecutive hours (exclusive of a meal period) shall constitute a day's work at straight time. Five (5) consecutive days of eight (8) consecutive hours (exclusive of a meal period), Monday through Friday, shall constitute a week's work. One and one half (1 ½) the regular straight time hourly rate shall be paid for the first two (2) hours worked over eight (8) hours Monday through Friday. Double the regular straight time rate shall be paid for all hours worked over ten (10) hours Monday through Friday. One and one half (1 ½) the regular straight time rate shall be paid for the first ten (10) hours on Saturday. Double the regular straight time rate shall be paid for all hours worked over ten (10) hours on Saturday. All hours worked on Sunday shall be paid at double the regular straight time rate.

RECOGNIZED HOLIDAYS
All work performed on the following holidays shall be paid for at double the regular straight time rate: New Year's Day, Memorial Day, Fourth of July, Labor Day, Admissions Day, Thanksgiving Day and the Friday after Thanksgiving and also Christmas Day.
If any of the above holidays fall on Sunday, the Monday following shall be considered a holiday.
No work shall be permitted on the Fourth of July or Labor Day, regardless of compensation or donation, except in case of emergency or to protect life and property. Permission to work shall be granted by the representative of the Union or its officer.

JOB DESCRIPTION: Excerpt from Agreement No NV. Plasterers Master Labor Agreement
This includes but is not limited to:

1. All building construction, including but not limited to the construction, erection, alteration, repair,modification, demolition, addition, or improvement in whole or in part of any building structures.

2. All interior or exterior plastering construction, restoration, repair and inspection of cement, stucco, stone imitation or any patent material when ornamental molded plaster, and the setting of same. All specialty finishes such as veneer, venetian, marmoreno and grasello. All custom and specialty finishes, including but not limited to custom rock, carved plaster, brick and block veneer, stone and wood. Smooth and finish surfaces of full system E.I.F.S. including sticking and shaping of foam pieces or surfaces by adhesive or mechanical installation. All spray or toweled on fireproofing, including cementitious and intumescent products. All plaster acoustical finish systems including, but not limited to, BASWA Phon and Fellert.

3. All work processes which represent technological change, replacement, modification or substitution for the work described above. In addition, all work and use of new materials or *2020-2024 Reno Plasterers Master Labor Agreement* 4 techniques involved in plaster construction including but not limited to what is known as green or sustainable construction technology.

Craft: PLUMBER/PIPEFITTER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Plumber/Pipefitter-Journeyman..……...……..76.10
Plumber/Pipefitter-Foreman.……...……81.19
Plumber/Pipefitter-General Foreman.……...……86.28

ADD ZONE RATE
In addition to PLUMBER/PIPEFITTER rates add the applicable amounts per statute air mile radius from the Nevada freeway interchange of Interstate 80 and 580.

Zone 1	0 to 75	$0.00
Zone 2	Over 75 miles	$8.00

A separate free zone will be established for employees permanently residing and working within a seventy-five (75) statute air mile radius of the Elko, Nevada Post Office.

Zone 1	0 to 75	$0.00
Zone 2	Over 75 miles	$8.00

ADD PREMIUM PAY
Premium pay for hours worked in excess of a shift of 8 hours or 12 hours or such other time increment set forth in the Collective Bargaining Agreement or on a weekend or holiday.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Fourth of July, Labor Day, Nevada Admission Day, Thanksgiving Day, the Friday after Thanksgiving Day, Day Before Christmas and Christmas Day and any Friday preceding a Holiday falling on a Saturday, if worked, holidays shall be compensated at the double time rate.

JOB DESCRIPTION Excerpt from Agreement between LU 350 of United Assoc. of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of United States and Canada

Installation of all hearing and refrigeration systems and competent parts thereof, including fabrication, assembling, erection installation, dismantling, repairing, reconditioning, adjusting, altering servicing, handling, distributing, and tying on all piping materials appurtenances and equipment by method, including all hangars and supports of every description, all other work including the the trade relevant to oil burner and all other types of heating and refrigeration equipment including low voltage controls.

Craft: REFRIGERATION MECHANIC (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Refrigeration-Journeyman……..……...…… 67.14
Refrigeration -Foreman…….……...…….67.64

ADD PREMIUM PAY
Premium pay for hours worked in excess of a shift of 8 hours or 12 hours or such other time increment set forth in the Collective Bargaining Agreement or on a weekend or holiday.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Fourth of July, Labor Day, Nevada Admission Day, Thanksgiving Day, the Friday after Thanksgiving Day, Day Before Christmas and Christmas Day and any Friday preceding a Holiday falling on a Saturday, if worked, holidays shall be compensated at the double time rate.

JOB DESCRIPTION Excerpt from Agreement between LU 350 of United Assoc. of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of United States and Canada

Installation of all hearing and refrigeration systems and competent parts thereof, including fabrication, assembling, erection installation, dismantling, repairing, reconditioning, adjusting, altering servicing, handling, distributing, and tying on all piping materials appurtenances and equipment by method, including all hangars and supports of every description, all other work including the trade relevant to oil burner and all other types of heating and refrigeration equipment including low voltage controls.

Craft: ROOFER (Non-Union Rate)
(Does not include sheet metal roofs)

Prevailing wage rates include the base rate as well as all applicable fringes

Roofer-Journeyman……..……..……..……33.64

JOB DESCRIPTION

Includes but is not limited to:

1. Installing and covering roofs and structures with slate, asphalt, wood and other related materials, other than sheet metal, by using brushes, knives, punches, hammers and other tools;
2. Spraying roofs, sidings and walls with material to bind, seal, insulate or soundproof sections of a structure;
3. Installation of all plastic, slate, slag, gravel, asphalt and composition roofing, and rock asphalt mastic when used for damp and waterproofing;
4. Installation of all damp resisting preparations when applied on roofs with mop, three-knot brush, roller, swab or spray system;
5. All types of preformed panels used in waterproofing;
6. Handling, hoisting and storing of all roofing, damp and waterproofing materials;
7. The tear-off and/or removal of roofing and roofing materials.

Craft: SHEET METAL WORKERS (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Sheet Metal Worker Journeyman……..……77.37
Sheet Metal Worker -Foreman…….....82.06
Sheet Metal Worker -General Foreman……..…….…86.75

ADD ZONE RATE
A separate free zone will be established for employees permanently residing and working within a seventy-five (75) mile radius of the Elko, Nevada Post Office. In addition to SHEET METAL rates add the applicable amounts per hour, calculated based on a road from the courthouse in Reno, Nevada:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 100 miles	$5.00
Zone 3	Over 100 miles	$10.00 the employee shall be provided reasonable lodging and meal expenses.

ADD PREMIUM PAY
All hourly rates are subject to Over Time (One and one half 1 ½) of the Regular rate:
1. For all hours worked over Eight (8) Hours in one day or shift.
2. For the first Eight (8) Hours work on Saturday.

All hourly rates are subject to Double Time of the Regular Rate:
1. For all hours worked over Ten (10) Hours in one day or shift.
2. For all hours worked over Eight (8) Hours on Saturday.
3. For all hours worked on Sunday, New Year's Day, Memorial Day, Independence Day, Friday before Labor Day, Labor Day, Nevada Day, Thanksgiving Day, Day after Thanksgiving, Day before Christmas, and Christmas Day.

RECOGNIZED HOLIDAYS
New Year's Day, Memorial Day, Independence Day, Friday before Labor Day, Labor Day, Nevada Day, Thanksgiving Day, Day after Thanksgiving, Day before Christmas, and Christmas Day

JOB DESCRIPTION: Excerpt from Sheet Metal Local 26 Collective Bargaining Agreement

(a) manufacture, fabrication, assembling, handling, erection, installation, dismantling, conditioning, adjustment, alteration, repairing and servicing of all ferrous or nonferrous metal work and all other materials used in lieu thereof and of all HVAC systems, air veyor systems, exhaust systems, and air-handling systems regardless of material used including the setting of all equipment and all reinforcements in connection therewith; (b) all lagging over insulation and all duct lining; (c) testing and balancing of all air-handling equipment and duct work; (d) the preparation of all shop and field sketches whether manually drawn or computer assisted used in fabrication and erection, including those taken from original architectural and engineering drawings or sketches; (e) metal exterior wall systems, metal roofing; and (f) all other work included in the jurisdictional claims of International Association of Sheet Metal, Air, Rail and Transportation Workers.

Craft: SOILS and MATERIAL TESTER (Non-Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Soil Tester (Certified)……..…….46.81
Soils and Materials Tester..…….46.81

Craft: SPRINKLER FITTER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

SEE AMENDMENT 2

Sprinkler Fitter-Journeyman……..…….65.31
Sprinkler Fitter Foreman……..……...68.31
Sprinkler Fitter General Foreman……..70.56

ADD ZONE RATE
In addition to SPRINKLER FITTER rates add the applicable amounts per hour, calculated based on a road from the courthouse in Reno, Nevada:

Zone 1	0 to 60 miles	$0.00
Zone 2	60 to 80 miles	$23.00
Zone 3	80 to 100 miles	$33.00
Zone 4	Over 100 miles	$125.00

JOB DESCRIPTION
Installing, dismantling, maintenance, repairs, adjustments and corrections of all fire protection and fire control systems Including the unloading, handling by hand, power equipment and installation of all piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, standpipes, and hose connections to sprinkler systems, sprinkler tank heaters, air lines and thermal systems used in connection with sprinkler and alarms systems, also all tanks and pumps connected thereto. Also including shall be CO2 and Cardox Systems, Dry Chemical Systems, Foam Systems and all other fire protection systems, but excluding steam fire protection systems.

Craft: SURVEYOR (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes.

..

Rodman/Chainman ……..……...……..72.97
Instrumentman……..……..……...……..74.43
Chief of Party Surveyor……..……..……..75.69

ADD ZONE RATE

In addition to: **OPERATING ENGINEER, STEEL FABRICATOR & ERECTOR, and OPERATING ENGINEER PILEDRIVER,** rates add the applicable amounts per hour calculated based on a road mile from the Carson City Courthouse or Washoe County Courthouse

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$5.00
Zone 3	150 to 300 miles	$6.00
Zone 4	300 miles over	$7.00

ADD PREMIUM PAY

1. One and one-half (1-1/2) times the applicable straight-time rate for the day, shift, work, equipment and classification shall be paid for all work (including repair work and field survey work) performed on Saturday and before a shift begins and after it ends, except when operating equipment servicing a craft that is receiving double time on commercial building construction, in which case double time shall be paid.
2. Overtime. The following rates shall apply on Sundays and holidays and all work before a shift begins and after it ends:
Saturday Shift Period. On any shift, Saturday shall be the twenty-four-hour period commencing at 12:00 midnight Friday.
Sunday Shift Period. On any shift, Sunday shall be the twenty-four-hour period commencing at 12:00 midnight Saturday.
3. For hours worked in excess of 12 on any such workday, an Employee shall be paid two (2) times the regular straight-time rate of pay for each hour so worked.

RECOGNIZED HOLIDAYS

Holidays. Double the applicable straight-time rate shall be paid for all work (including repair, maintenance and field survey work) performed on Sundays and the following holidays: New Year's Day (January 1); Memorial Day (last Monday in May); Independence Day (July 4); Labor Day (1st Monday in September); Nevada Admission Day (last Friday in October); Thanksgiving Day (4th Thursday in November); the day after Thanksgiving Day; and Christmas Day (December 25). Holidays falling on Sunday shall be observed on the following Monday. Holiday hours shall be reckoned on the same basis as Sunday hours.

JOB DESCRIPTION includes but is not limited to:

1. Planning ground surveys designed to establish base lines, elevation and other geodetic measurements;
2. Compiling data relevant to the shape, contour, gravitation, location, elevation and dimension of land and land features on or near the surface of the Earth for engineering, map making, mining, land evaluation, construction and other purposes;
3. Surveying bodies of water to determine navigable channels and to secure data for construction of breakwaters, piers and other marine structures;
4. Computing data necessary for driving and connecting underground passages, underground storage and volume of underground deposits.

Craft: TAPER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Taper-Journeyman……..……..59.26
Taper-Foreman…..……..……..63.54

ADD ZONE RATE
In addition to: TAPER rates add the applicable amounts per hour Zone Pay shall commence from the Washoe County Courthouse in Reno, Nevada, and shall be paid as follows:

Zone 1	0 to 40 miles	$0.00
Zone 2	40 to 60 miles	$2.50
Zone 3	over 60 miles	$4.25

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day. When holiday falls on a Sunday, the Monday following shall be observed as the holiday; holidays falling on Saturday shall be observed on the prior Friday.

ADD PREMIUM PAY
All overtime, except Sundays and holidays, will be time and one-half (1 1/2).
Sundays and holidays will be paid double time (2X). Any and all work performed in excess of the regular workday of eight (8) hours, or ten (10) hours if mutually agreed to, and the regular workweek of forty (40) hours shall be considered overtime and shall be paid for at one and one-half (1 1/2) times the regular hourly rate.

JOB DESCRIPTION: Excerpt from Agreement between DC 16 and the independent Drywall Contractors of Northern Nevada

SECTION 1 -- The scope of work covered by this Agreement shall include (but not be limited to) all work operations, including distribution to the point of application, as follows:
(a) Work or services pertaining to the preparation, spotting, pointing, detailing, flushing, sanding and finishing of interior and/or exterior gypsum, drywall, thin wall, concrete, steel, wood and plaster surfaces, spackling of all surfaces where adhesive materials are used; and all drywall pointing, taping and finishing.
(b) Work or services pertaining to the application of all finish or flushing materials regardless of method of application or type of surface on which materials are applied, including but not limited to texture and simulated acoustic materials of all types and the application of radiant heat fill and steel fireproofing materials.
(c) Work or services pertaining to the installation of protective coverings and masking prior to the application of finish materials.
(d) The operation and care of all taping tools and texturing equipment used in the finishing and texturing of drywall and other surfaces including brushes, rollers, spray texturing equipment, miscellaneous hand, mechanical, and power tools, and the operation and maintenance of compressors required in the finishing and texturing of such surfaces.
(e) No limitation shall be placed on the work covered by this Agreement by reason of the surface, type of material or purpose for which the materials used are designed or intended.
(f) The cleanup of all materials and debris occasioned by any job operation at the site of construction, alteration, or repair undertaken whether such operation occurs on the interior or exterior of a building structure.

Craft: TILE SETTER/TERRAZZO WORKER/MARBLE MASON FINISHER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Tile Setter/Terrazzo Worker/Marble Mason - Finisher..……42.32
Tile Setter/Terrazzo Worker/Marble Mason - Finisher Foreman……..……44.32
Tile Setter/Terrazzo Worker/Marble Mason Finisher- General Foremen…….……68.32

ADD ZONE RATE
In addition to TILE/TERRAZZO WORKER/MARBLE MASON FINISHER wage rates, employees shall receive the following hourly zone pay for all jobs located more than forty (40) miles from the Washoe County Courthouse in Reno, Nevada:

Zone 1	0 to 40 miles	$0.00
Zone 2	40 to 50 miles	$3.75
Zone 3	50 to 70 miles	$5.00
Zone 4	Over 70 miles	$10.00

ADD PREMIUM PAY

All work in excess of forty (40) hours during the established work week shall be paid at the rate of one and one-half (1-1/2) times the hourly base wage rate in effect.

Employees shall be paid one and one-half (1-1/2) times the hourly wage rate for al hours worked over eight (8) in a single day and double time after ten (10) hours in a single day, Monday through Friday, except recognized holidays.

Daily Overtime Saturdays the first ten (10) hours performed on Saturday shall be paid at one and one-half (1-1/2) times the straight time wage rate.

Daily Overtime Sunday- Employees shall be paid double time on Sundays if forty (40) straight time hours have been worked during the proceeding work week.

Holidays shall be paid double time for hours owed on recognized holidays.

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day. Any holiday falling on a Sunday will be observed on Monday.

JOB DESCRIPTION: Excerpt from Agreement between BAC 13 Nevada of the Mountain West Administrative District Council Master Labor Agreement

FINISHER'S WORK:

Finisher's work shall consist of assisting, helping or supporting the tile, marble and terrazzo mechanic by performing their historic and traditional work assignments. required to complete the proper installation of the work covered by Sections 5, 7 and 8 of this Code.

Craft: TILE SETTER/TERRAZZO WORKER/MARBLE MASON (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Tile Setter - Journeyman……...……....52.37
Tile Setter - Foreman…….……...……..54.37
Tile Setter - General Foreman…. ……...……..58.37

Terrazzo/Marble Mason - Journeyman ……...……....53.87
Terrazzo/Marble Mason - Foreman ……...…….……55.87
Terrazzo/Marble Mason - General Foreman..……..…….59.87

ADD ZONE RATE
In addition to TILE SETTER/TERRAZZO/MARBLE MASON wage rates, employees shall receive the following hourly zone pay for all jobs located more than forty (40) miles from the Washoe County Courthouse in Reno, Nevada:

Zone 1	0 to 40 miles	$0.00
Zone 2	40 to 50 miles	$3.75
Zone 3	50 to 70 miles	$5.00
Zone 4	Over 70 miles	$10.00

ADD PREMIUM PAY

All work in excess of forty (40) hours during the established work week shall be paid at the rate of one and one-half (1-1/2) times the hourly base wage rate in effect.

Employees shall be paid one and one-half (1-1/2) times the hourly wage rate for all hours worked over eight (8) in a single day and double time after ten (10) hours in a single day, Monday through Friday, except recognized holidays.

Daily Overtime Saturdays the first ten (10) hours performed on Saturday shall be paid at one and one-half (1-1/2) times the straight time wage rate.

Daily Overtime Sunday- Employees shall be paid double time on Sundays if forty (40) straight time hours have been worked during the proceeding work week.

Holidays shall be paid double time for hours owed on recognized holidays.

RECOGNIZED HOLIDAYS
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day. Any holiday falling on a Sunday will be observed on Monday.

JOB DESCRIPTION: Excerpt from Agreement between BAC 13 Nevada of the Mountain West Administrative District Council Master Labor Agreement

TILE LAYERS' WORK:

Tile laying shall consist of, but not be limited to, the following work procedures and installation of the following materials:

A. The laying, cutting or setting of all tile where used for floors, walls, ceilings, walks, promenade roofs, stair treads, stair risers, facings, hearths, fireplaces, and decorative inserts, together with any marble plinths, thresholds or window stools used in connection with any tile work; also, preparing and setting all concrete, cement, brickwork, or other foundation or materials that may be required to properly set and complete such work; setting or bedding all tiling, stone, marble, composition, glass, mosaic, or other materials forming the facing, hearth or fireplace of a mantel, or the mantel complete, together with setting of all cement, brickwork, or other materials required in connection with the above work; also the slabbing and fabrication of tile mantels, counters and tile panels of every description, and the erection and installation of same; the building, shaping, forming, construction or repairing of all fireplace work, whether in connection with a mantel hearth facing or not, and the setting and preparing of all material, such as cement, plaster, mortar, brickwork, iron work or other materials necessary for the proper and safe construction and completion of such work, except that a mantel made exclusively of brick, marble or stone, shall be conceded to be bricklayers', marble setters' or stonemasons' work, respectively.

B. It will be understood that the word "tile" refers to all burned clay products, as used in the tile industry, either glazed or unglazed, and to all composition materials made in single units up to 15"x20"x2", except quarry tiles larger than 9"x9"x1 1/4", also to mixtures in tile form of cement, plastics and metals that are made for and intended for use as a finished floor surface, whether upon interior or exterior floors, stair treads, promenade roofs, garden walks, interior walls, ceilings, swimming pools, and all places where tile may be used to form a finished surface for practical use, sanitary finish or decorative purposes, for setting all accessories in connection therewith, or for decorative inserts in other materials.

C. All terra cotta called unit tile in sizes of 6"x12" or under, regardless of method of installation, quarry tile 9"x9"x1 1/4" or less; split brick or quarry tile or similar material where the bed is floated or screeded and the joints grouted. Where the work is installed by tile layers, the grouting and cleaning shall be supervised by the mechanic. The bedding, jointing, and pointing of the above materials shall be the work of the craft installing the same. All clay products known as terra cotta tile, unit tile, ceramic veneer and machine-made terra cotta, and like materials in sizes 6"x12" and less regardless of the method of installation. Where the preponderance of materials to be installed comes within the provisions of this Section and when there is also some material in excess of the sizes provided for in this Section, the tile setter shall install all such materials.

D. The preparation, setup, calibration, operation, cleaning, and routine maintenance of any mechanical devices or robotics used to install tile and related materials, or that otherwise assist the tile layer in performing any of the work described in Article II and Code 1 of the IU Constitution, as well as the preparation and ongoing maintenance of the work area to allow proper installation of tile and related materials.

Craft: TRAFFIC BARRIER ERECTOR (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Traffic Barrier Erector…….50.78

ADD ZONE RATE

In addition to LABORER rates add the applicable amounts per hour, calculated based on a road miles from either the Carson City Courthouse or the Washoe County Courthouse:

Zone 1	0 to 75 miles	$0.00
Zone 2	75 to 150 miles	$5.00
Zone 3	150 to 300 miles	$6.00
Zone 4	300 miles and over	$7.00

No remote area pay shall be paid within ten (10) miles of employee's permanent place of residence in the State of Nevada.

ADD PREMIUM PAY

One and one half (1 ½) the regular straight time hourly rate shall be paid:

1. For all hours worked over eight (8) hours in one day or shift.
2. For any hours worked on Saturday from midnight to midnight.

Double the regular straight time hourly rate shall be paid for all time:

1. For all hours worked over twelve (12) hours in one day or shift.
2. For any hours worked on Sunday from midnight to midnight.
3. For any hours worked on holidays from midnight to midnight.

RECOGNIZED HOLIDAYS

If any of these holidays fall on Sunday, the Monday following shall be considered a Holiday.
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving Day, Christmas Day.

JOB DESCRIPTION: Excerpt from Agreement between AGC and LIUNA Local 169

1. Distributing traffic control signs and markers along site in designated pattern;
2. Informing drivers of detour routes through construction sites;

Craft: Truck Driver (Non-Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Dump Trucks (Single or Multiple Units Including Semi's & Double Transfer Units), Dumpcretes and Bulk Cement Spreader)

Under 4 yds. (water level)……32.25
4 yds. & under 8 yds. (water level)……32.25
8 yds. & under 18 yds. (water level)……32.25
18 yds. & under 25 yds. (water level))……32.25
25 yds. & under 60 yds. (water level)……32.25
60 yds. & under 75 yds. (water level))……32.25
75 yds. & under 100 yds. (water level))……32.25
100 yds. & under 150 yds. (water level))……32.25
150 yds. & under 250 yds. (water level))……32.25
250 yds. & under 350 yds. (water level))……32.25
350 yds. & over (water level)……32.25

Transit Mix

Under 8 yrds……32.25
Under 8 yrds & including 12 yrds……32.25
Over 12 yrds……32.25

Transit Mix (Using Boom)

Transit mix with boom shall receive 16 cents per hour above the appropriate yardage classification rate of pay when such boom is used……32.25

Water & Jetting Trucks

Up to 2,500 gallons……32.25
Up to 2,500 gallons & over……32.25
DW 20's & 21's & other similar Cat type, Terry Cobra LeTourneau pulls, Tournerocker, Euclid, & similar type equipment when pulling Aqua/Pak, Water Tank Trailers, & Fuel, and/or Grease Tank Trailer, or other miscellaneous Trailers, (except as defined under "Dump Trucks")
Heavy Duty Transport (High Bed)……32.25
Heavy Duty Transport(Gooseneck low bed)……32.25
Tiltbed or Flatbed Pull Trailers.. ……32.25
Bootman, Comb. Bootman & Road Oiler……32.25
Flat Rack (2 or 3 axle unit)……32.25

Bus & Manhaul Drivers

Up to 18,000 lbs. (single unit)……32.25
18,000 lbs. and over ……32.25
Warehousemen Spotter ……32.25

Winch Truck & "A" Frame Drivers

Up to 18,000 lbs. ……32.25
18,000 lbs. and over……32.25
Warehousemen Spotter……32.25
Warehouse Clerk……32.25
Tire Repairmen……32.25
Truck Repairmen……32.25
Pick Up Truck & Pilot Cars (Jobsite) ……32.25
Pick Up Truck & Pilot Cars (Over the road) ……32.25
Truck Oil Greaser……32.25
Fuel Truck Driver……32.25
Fuel Man & Fuel Island Man……32.25
Oil Tanker……32.25

Oil Tanker with Pup…….……32.25
Foreman……..……...32.25

TRUCK DRIVER
Includes but is not limited to:
Driving a tractor trailer combination or a truck to transport goods or materials at the site of a public work or between sites of a public work. (Also, see descriptions listed with Truck Driver rates, if any.)

Craft: WELL DRILLER (Non-Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Well Driller……..……60.78

JOB DESCRIPTION

1. Setting, operating or tending to portable drilling rig machinery and related equipment to drill wells;
2. Extending stabilizing jackscrews to support and level a drilling rig;
3. Installing water well pumps;
4. Drillings wells for industrial water supplies, irrigation water supplies or water supplies for any other purpose; dewatering or other similar purposes; exploration; hole drilling for geologic and hydrologic information; and core drilling for geologic information.

GROUP CLASSIFICATIONS

LABORER, includes but is not limited to:

Group 1

- All cleanup work of debris, grounds, and building including windows and tile
- Dumpmen or Spotter (other than asphalt)
- Handling and Servicing of Flares, Watchmen
- General Laborer
- Guideposts and Highway Signs
- Guardrail Erection and Dismantling
- Limber, Brushloader and Piler
- Pavement Marking and Highway Striping
- Traffic Barrier Erector
- Tending to portable space heaters
- Profilograph work all types manual, self propelled or carts
- Gabion basket, building, handling, installation and rigging
- Dry set paver work
- Traffic Barrier Erector

Group 2

- Choker setter or Rigger (clearing work only) Pittsburgh
- Chipper and similar type brush shredders
- Concrete worker (wet or dry) all concrete work not listed in Group 3 included but not limited to: concrete forms stripping, handling, cleaning, oiling and moving to the next point of installation.
- Crusher or Grizzly Tender
- Greasing Dowels
- Guinea Chaser (Stakemen)
- Panel Forms (wood or metal) handling, cleaning and stripping of Loading and unloading, (Carrying and handling of all rods and material for use in reinforcing concrete
- Railroad Trackmen (maintenance, repair or builders)
- Sloper
- Semi-Skilled Wrecker (salvaging of building materials other than those listed in Group 3)
- Waterproofing work
- Epoxy rebar/dowels and anchoring dowel baskets
- Placement pouring of concrete including any epoxy resin or similar materials, rodding, spreading and tamping concrete, brooming or brushing, hand application of curing compounds, applying topping (wet or dry) colors or grits, and exposed finishes for architectural work
- Concrete patching, dry packing, chipping, stoning, and grouting
- Concrete cold whether/rain protection and curing
- Placement /anchoring of all earth stabilization/filters fabrics,
- Mechanically stabilized Earth (MSE) and Keystone type retaining walls rigging, placing , aligning, backfilling and installation of dead men and any stablilization compenents

Group 3

- Asphalt Workers (Ironers, Shovelers, Cutting Machine)
- Buggymobile
- Chainsaw, Faller, Logloader and Bucker

- Compactor (all types)
- Concrete Mixer under 1/2 yard
- Concrete Pan Work (Breadpan type), handling, cleaning\stripping
- Concrete Saw, Chipping, Grinding, Sanding, Vibrator
- Cribbing, Shoring, Lagging, Trench Jacking, Hand-Guided Lagging Hammer
- Curbing or Divider machine
- Curb Setter (precast or cut)
- Ditching Machine (hand-guided)
- Drillers Helper, Chuck Tender
- Fence erector including safety, chain link, turtle, field and barbe wire fencing
- Form Raiser, Slip Forms
- Grouting of Concrete Walls, Windows and Door Jams
- Headerboardmen
- Jackhammer, Pavement Breaker, Air Spade
- Mastic Worker (wet or dry)
- Pipewrapper, Kettlemen, Potmen, and men applying asphalt, creosote and similar type materials
- All Power Tools (air, gas, or electric), Post Driver
- Riprap-Stonepaver and RockSlinger, including placing of sack concrete wet or dry
  Rototiller
- Rigging and Signaling in connection with Laborers' work
- Sandblaster, Potmen, Gunmen or Nozzlemen water blasting not covered in group 5A
- Vibra-screed
- All demolition and wrecking work including but not limited t any torch work cutting, burning, plasma are, dust control, and salvaging (removing and salvaging of all materials, windows, doors, plumbing, and electrical fixtures) and use of customary tools and equipment for demolition and wrecking
- All underpinning foundation work, digging and underpinning pits, removal of debris with tuggers or other methods, cutting, handling and installing all shoring boards and lagging boards used for underpinning and foundation work, placement and tying of steel reinforcing for underpinning piers, all tiebacks and soil nail work drilling and grouting, all soldier beam work and us of customary tools and equipment for underpinning foundation work

Group 3A

- Concrete Specialist
- Setting screeds
- Screed pins
- Curb forms and curb and gutter forms,
- Using Darby and push floats,
- Hand trowels or hand floating
- Marking edging
- Using base cove or step tools
- Spreading and finishing gypsum
- Concrete grinding machines (the terms does not include Rotomill machines for highway overlay grinding)
- Troweling machines,
- Floating machines
- Finishing of epoxy or resin materials,
- Operation of skill saw
- Laser Screed
- Laser Level

- Curb and Slipform machines,
- Stamps or other means or texturing,
- Any new devices which are beneficial to the construction of or with concrete or related products.

Group 4

- Burning and Welding in connection with Laborers' work
- Joy Drill Model TWM-2A, Gardner Denver Model DN143 and similar type drills (in accordance with Memorandum of Understanding between Laborers and Operating Engineers dated at Miami, Florida, Feb. 3, 1954) and Track Drillers, Diamond Core Drillers, Wagon Drillers, Mechanical Drillers on Multiple Units
- High scalers including but not limited to laying, anchoring, pinning, cabling and stretching of any rock fall netting, mesh or wire fabric and use of customary tools and equipment for high scaling
- Concrete pump operator
- Heavy Duty Vibrator with Stinger 5" diameter or over
- Pipelayer, Caulker and Bander
- Pipelayer-waterline, Sewerline, Gasoline, Conduit and all other types of composition for any purpose buried under ground outside of building including, stringing, trench shoring, backfilling sanding, caution taping, all walk behind equipment and spotting
- Laborer work in connection with micro tunneling, directional drilling and pipe-jacking
- Cathodic protection, grounding for pipe work
- Cleaning of Utility Lines
- Slip Lining of Utility Lines (including operation of Equipment)
- TV Monitoring and Grouting of Utility Lines
- Asphalt Rakers and Asphalt dump Man
- All mechanical and pressurized pipe work, including the installation of pipe above and below ground, cathodic protection, bolt up, and support installation in connection to water conveyance, c

Group 4A

- Foreman

Group 5

- Construction Specialists
- Blasters and Powdermen, all work of loading, placing, and blasting of all powder and explosives of any type, regardless of method used for such loading and placing
  Asbestos removal
- Lead abatement
- Hazardous waste
- Material removal

Group 5A

- Pavement Marking and Highway Striping
- Pavement Marking and Highway Striping Foreman
- Pavement Marking and Highway Striping work includes but is not limited to: All work by any method preformed in connection with the permanent or temporary application and installation of pavement marking of any kind, brand, type or style on parking lots, airfields, highways, streets and other such surfaces and all work performed in connection with removal of pavement.

Group 6

- Gunite Foremen, Nozzlemen, Rodmen, Gunmen, Materialmen, Reboundmen

- Tunnel and shaft workers/miners and use of customary tools and equipment for tunnel and mine work All worked performed in a compressed air tunnel shaft or chamber including the use of hand, power tools or equipment as necessary in connection with compressed air work

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OPERATING ENGINEER, includes but is not limited to:

Group 1
- Engineer Assistant

Group 1A
- Oiler (Construction)
- Partsman

Group 2
- Compressor Operator
- Material Loader and/or Conveyor Operator (handling building materials)
- Pump Operator

Group 3
- Bobcat or similar loader, 1/4 cu. yd. or less
- Concrete Curing Machines (streets, highways, airports, canals)
- Conveyor Belt Operator (tunnel)
- Forklift (under 20)
- Engineer Generating Plant (500 K.W.)
- Mixer Box Operator (concrete plant)
- Motorman
- Rodman/Chainman
- Rotomist Operator
- Oiler (truck crane)

Group 4
- Concrete Mixer Operator, Skip type
- Dinky Operator
- Forklift (20' or over) or Lumber Stacker
- Ross Carrier
- Skip Loader Operator (under one (1) cu. yd.)
- Tie Spacer

Group 5
- Concrete Mixers (over one (1) cu. yd.)
- Concrete Pumps or Pumpcrete Guns
- Elevator and Material Hoist (one (1) drum)
- Groundman for Asphalt Milling and similar

Group 6
- Auger type drilling equipment up to and including 30 ft. depth digging capacity M.R.C.
- Boom Truck or Dual-Purpose a-Frame Truck
- B.L.H. Lima Road Pactor or similar
- Chip Box Spreader (Flaherty type or similar)
- Concrete Batch Plant (wet or dry)
- Concrete Saws (highways, streets, airports, canals)
- Locomotives (over thirty (30) tons)
- Maginnis International Full Slab Vibrator (airports, highways, canals and warehouses)
- Mechanical Finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types)

- Mechanical Burn, Curb and/or Curb and Gutter Machine (concrete or asphalt)
- Pavement Breaker, Truck Mounted, with compressor combination
- Pavement Breaker or Tamper (with or without compressor combination)
- Power Jumbo Operator (setting slip-forms, etc., in tunnels)
- Roller Operator (except asphalt)
- Self-Propelled Tape Machine
- Self-Propelled Compactor (single engine)
- Self-Propelled Power Sweeper Operator
- Slip-Form Pump (power-driven by hydraulic, electric, air, gas, etc. lifting device for concrete forms)
- Small Rubber-Tired Tractors
- Snooper Crane, Paxton-Mitchell or similar
- Stationary Pipe Wrapping, Cleaning and Bending Machine Operator

Group 7

- Auger type drilling equipment over 30 ft. depth digging capacity M.R.C.
- Compressor (over 2)
- Concrete Conveyor or Concrete Pump, truck or equipment mounted (any assistance required shall be performed by an Assistant to Engineer) Boom length to apply
  Concrete Conveyor, Building Site
- Drilling and Boring Machine, vertical and horizontal (not to apply to waterliners, wagon drills or jack hammers)
- Crusher Plant Engineer
- Generators
- Instrument Man
- Kolman Loader
- Material Hoist (two (2) or more drums)
- Mine or Shaft Hoist
- Pipe Bending Machines (pipeline only)
- Pipe Cleaning Machines (tractor-propelled and supported)
- Pipe Wrapping Machines (tractor-propelled and supported)
- Portable Crushing and Screening Plants
- Post Driller And/or Driver
- Pumps (over 2)
- Screedman (except asphaltic or concrete paving)
- Self-Propelled Boom-Type Lifting Device (center mount) (on ten (10) ton capacity or less)
- Slusher Operator
- Soil Tester (Certified)
- Soils and Materials Tester
- Surface Heater and Planer Operator
- Trenching Machine (maximum digging capacity three (3) ft. depth) (Any assistance in the operation, if needed, shall be performed by an Assistant to Engineer)
- Truck-Type Loader
- Welding Machines (gasoline or diesel)

Group 8

- Articulated on-Site Dump Trucks
- Asphalt Plant Engineer
- Asphalt Milling Machine

- Cast-In-Place Pipe-Laying Machine
- Combination Slusher and Motor Operator
- Concrete Batch Plant (multiple units)
- Dozer Operator
- Drill Doctor
- Elevating Grader Operator
- Stiff Frame Off Road Haul Trucks
- Grooving and Grinding Machine (highways)
- Ken Seal Operator
- Marination Plant
- Loader (up to and including two and one-half (2 1/2) cu. yds)
- Mechanical Finishers or Spreader Machine (asphalt, Barber-Greene or similar)
- Shuttle Buggy
- Mechanical Trench Shield
- Mixermobile
- Push Cats
- Road Oil Mixing Machine Operator Wood-Mixer (and other similar Pugmill equipment)
- Roller Operator (asphalt)
- Rubber-Tired Earthmoving Equipment (up to and including thirty-five (35) cu. yds. "struck " M.R.C., Euclids, T-Pulls, DW10, 20, 21 and similar)
- Water Pull
- Screedman (Barber-Greene and similar) (asphaltic or concrete paving)
- Self-Propelled Compactors with Dozer; Hyster 450, Cat 825 or similar
- Sheepfoot
- Small Tractor (with boom)
- Soil Stabilizer (P & H or equal)
- Timber Skidder (rubber-tired) or similar equipment
- Track Loader
- Tractor-Drawn Scraper
- Tractor Operator
- Tractor-Mounted Compressor Drill Combination
- Trenching Machine Operator (over three (3) feet depth)
- Tri-Batch Paver
- Tunnel Badger or Tunnel Boring Machine Operator
- Tunnel Mole Boring Machine
- Vermeer T-600b Rock Cutter
- Vacuum Truck(excludes trailer mounted vaccums)

Group 9

- Chicago Boom
- Combination Backhoe and Loader (up to and including 3/8 cu. yd.)
- Combination Mixer and Compressor (gunite)
- Heavy Duty Repairman and/or Welder
- Lull Hi-Lift (twenty (20) feet or over)
- Mucking Machine
- Sub-Grader (Gurries or other types)
- Tractor (with Boom) (D6 or larger)
- Track-Laying-Type Earthmoving Machine (single engine with tandem scrapers)

Group 10

- Boom-Type Backfilling Machine
- Bridge Crane
- Cary-Lift or similar
- Chemical Grouting Machine
- Chief of Party
- Derricks (two (2) Group 10 Operators required when swing engine remote from hoist)
- Derrick Barges (except excavation work)
- Euclid Loader and similar types
- Heavy Duty Repairman
- Heavy Duty Rotary Drill Rigs
- Lift-Slab (Vagtborg and similar types)
- Loader (over two and one-half (2 1/2 cu. yds. up to and including four (4) cu. yds.)
- Locomotive (over one hundred (100) tons, single or multiple units)
- Multiple-Engine Earthmoving Machines (Euclid Dozers, etc.)
- Pre-Stress Wire Wrapping Machine
- Rubber-Tired Scraper, Self-Loading
- Single-Engine Scraper (over thirty-five (35) cu. yds.)
- Shuttle Car (Reclaim Station)
- Train Loading Station
- Trenching Machine multi-engine with sloping attachments (Jefco or similar)
- Vacuum Cooling Plant
- Whirley Crane (up to and including twenty-five (25) tons)

Group 10A

- Backhoe-Hydraulic (up to and including one (1) cu. yd.)
- Backhoe (up to and including one (1) cu. yd.) (Cable)
- CMI Dual Lane Auto-Grader SP30 or similar type
- Cranes (not over twenty-five (25) tons) (hammerhead and gantry)
- Finish Blade
- Gradalls (up to and including one (1) cu. yd.)
- Motor Patrol Operator
- Power Shovels, Clamshells, Draglines, Cranes (up to and including one (1) cu. yd.)
- Rubber-Tired Scraper, Self-Loading (twin engine)
- Self-Propelled Boom-Type Lifting Device, center mount (over 10 tons up to and including 25 tons)

Group 11

- Automatic Asphalt or Concrete Slip-Form Paver
- Automatic Railroad Car Dumper
- Canal Trimmer
- Cary Lift, Campbell or similar type
- Cranes (over twenty-five (25) tons)
- Euclid Loader when controlled from the Pullcat
- Finish Blade
- Gradesetter, Grade Checker
- Highline Cableway Operator
- Loader (over four (4) cu. yds. up to and including twelve (12) cu. yds.)
- Multi-Engine Earthmoving Equipment (up to and including seventy-five (75) cu. yds. struck m.r.c.)
- Multi-Engine Scrapers (when used to Push Pull)

- Power Shovels, Clamshells, Draglines, Backhoes Gradalls (over one (1) cu. yd. and up to and including seven (7) cu. yds. m.r.c.)
- Self-Propelled Boom-Type Lifting Device (center mount) (over 25 tons m.r.c.)
- Self-Propelled Compactor (with multiple-propulsion power units)
- Single-Engine Rubber-Tired Earthmoving Machine, with Tandem Scraper
- Slip-Form Paver (concrete or asphalt)
- Tandem Cats and Scraper
- Tower Crane Mobile (including Rail Mount)
- Truck Mounted Hydraulic Crane when remote control equipped (over 10 tons up to and including 25 tons)
- Universal Liebher and Tower Cranes (and similar types)
- Wheel Excavator (up to and including seven hundred fifty (750) cu. yds. per hour)
- Whirley Cranes (over twenty-five (25) tons)

Group 11A
- Band Wagons (in conjunction with Wheel Excavators)
- Operator of Helicopter (when used in construction work)
- Loader (over twelve (12) cu. yds.)
- Multi-Engine Earthmoving Equipment (over seventy-five (75) cu. yds. "struck" m.r.c.)
- Power Shovels. Clamshells, Draglines, Backhoes, and Gradalls (over seven 7 cu. yds. m.r.c.)
- Remote-Controlled Earth Moving Equipment
- Wheel Excavator (over seven hundred fifty (750) cu. yds. per hour)

Group 11B
- Holland Loader or similar or Loader (over 18 cu. yds.)

OPERATING ENGINEERS - Steel Fabricator & Erector

Group 1
- Cranes over 100 tons
- Derrick over 100 tons
- Self-Propelled Boom Type Lifting Devices over 100 tons

Group 2
- Cranes over 45 tons up to and including 100 tons
- Derrick, 100 tons and under
- Self-Propelled Boom Type Lifting Device, over 45 tons
- Tower Crane

Group 3
- Cranes, 45 tons and under
- Self-Propelled Boom Type Lifting Device, 45 tons and under

Group 4
- Chicago Boom
- Forklift, 10 tons and over
- 59
- Heavy Duty Repairman/Welder

Group 5

- Boom Cat

OPERATING ENGINEER -PILEDRIVER

Group 1

- Derrick Barge Pedestal mounted over 100 tons
- Clamshells over 7 cu. yds.
- Self-Propelled Boom Type Lifting Device, over 100 tons
- Truck Crane or Crawler, land or barge mounted over 100 tons

Group 2

- Derrick Barge Pedestal mounted 45 tons up to and including 100 tons
- Clamshells up to and including 7 cu. yds.
- Self-Propelled Boom Type Lifting Device over 45 tons
- Truck Crane or Crawler, land or barge mounted, over 45 tons up to and including 100 tons

Group 3

- Derrick Barge Pedestal mounted under 45 tons
- Self-Propelled Boom Type Lifting Device 45 tons and under
- Skid/Scow Piledriver, any tonnage
- Truck Crane or Crawler, land or barge mounted 45 tons and under

Group 4

- Assistant Operator in lieu of Assistant to Engineer
- Forklift, 10 tons and over
- Heavy Duty Repairman/Welder

Group 5

No current classification

Group 6

- Deck Engineer

Group 7

No current classification

Group 8

- Deckhand
- Fireman

STATE OF NEVADA

JOE LOMBARDO
Governor

DR. KRISTOPHER SANCHEZ
Director

BRETT K. HARRIS, ESQ.
Labor Commissioner

DEPARTMENT OF BUSINESS AND INDUSTRY
OFFICE OF THE LABOR COMMISSIONER

2024-2025 Prevailing Wage

Amendment 1

- **AMENDMENT 1**
- **Classification – Ironworker**
- **County – All Regions**
- **Effective – January 1, 2025**

The following represents the amended wage rates

Prevailing wage rates include the base rate as well as all applicable fringes

Ironworker-Journeyman……..……86.36
Ironworker -Foreman……..……...91.46

Carson City: 1818 E. College Parkway, Suite 102 Carson City, Nevada 89706 - Telephone (775) 684-1890 - Fax (775) 687-6409

Las Vegas: 3340 West Sahara Avenue, Las Vegas, Nevada 89102 - Telephone (702) 486-2650 - Fax (702) 486-2660
www.labor.nv.gov

STATE OF NEVADA

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DEPARTMENT OF BUSINESS AND INDUSTRY
OFFICE OF THE LABOR COMMISSIONER

2024-2025 Prevailing Wage

Amendment 2

- **AMENDMENT 2**
- **Classification: Sprinkler Fitter**
- **Region: Northern Nevada Rural and Washoe County Region**
- **Effective: April 15, 2025**

The following represents the amended zone rate.

Craft: SPRINKLER FITTER (Union Rate)

Prevailing wage rates include the base rate as well as all applicable fringes

Sprinkler Fitter Journeyman……..……65.31
Sprinkler Fitter Foreman……..……..68.31
Sprinkler Fitter General Foreman……..70.56

ADD ZONE RATE
In addition to SPRINKLER FITTER rates add the applicable amounts per day, calculated based on a road from the courthouse in Reno, Nevada:

Zone 1	0 to 60 miles	$0.00
Zone 2	60 to 80 miles	$23.00
Zone 3	80 to 100 miles	$33.00
Zone 4	Over 100 miles	$125.00

JOB DESCRIPTION
Installing, dismantling, maintenance, repairs, adjustments and corrections of all fire protection and fire control systems Including the unloading, handling by hand, power equipment and installation of all piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, standpipes, and hose connections to sprinkler systems, sprinkler tank heaters, air lines and thermal systems used in connection with sprinkler and alarms systems, also all tanks and pumps connected thereto. Also, including shall be CO2 and Cardox Systems, Dry Chemical Systems, Foam Systems and all other fire protection systems, but excluding steam fire protection systems.

SECTION 01200 - PROJECT MEETINGS

PART 1- GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for project meetings including, but not limited, to the following:

1. Pre-Construction Conference

2. Pre-Installation Conferences

3. Coordination Meetings

4. Progress Meetings

5. Start-up / Training

6. Service, maintenance, warranty review.

B. Construction Schedules are specified in Division 1 SECTION 01310-A – PROGRESS SCHEDULES.

1.3 PRE-CONSTRUCTION CONFERENCE

A. The Contractor shall schedule a pre-construction conference and organizational meeting at the project site or other convenient location no later than fifteen (15) days after execution of the Contract and prior to commencement of any construction activities. The Contractor shall conduct the meeting to review scope, responsibilities, personnel assignments, Permits, submittals, safety, emergency action plans, contacts, schedule, etc.

B. Attendees: Owner; Architect, and their consultants; Contractor and their Superintendent and major sub-contractors; and manufacturers, suppliers and other concerned appropriate parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.

C. Agenda: Discuss items of significance that could affect progress including such topics as:

1. Construction schedule

2. Critical work sequencing

3. Designation of responsible personnel

4. Procedures for processing field decisions and change orders

5. Procedures for processing Applications for Payment

6. Submittal of Shop Drawings, product data and samples

7. Preparation of Record Documents

8. Use of the premises

9. Office, work and storage areas

10. Equipment deliveries and priorities

11. Safety and Security, emergency procedures

12. Housekeeping

13. Working hours

1.4 PRE-INSTALLATION CONFERENCES

A. Conduct a pre-installation conference at the site before each major construction activity that requires coordination with other construction. The installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination of integration with other materials and installations that have preceded or will follow, shall attend the meeting. The Contractor shall advise the Architect of scheduled meeting dates.

B. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:

1. Contract Documents

2. Options

3. Related Change Orders

4. Purchases

5. Deliveries

6. Shop Drawings, products data and quality control samples

7. Possible conflicts

8. Compatibility problems

9. Time schedules

10. Weather limitations

11. Manufacturer’s recommendations

12. Compatibility of materials

13. Acceptability of substrates

14. Temporary facilities

15. Space and access limitations

16. Governing regulations

17. Inspection and testing requirements

18. Required performance results

19. Recording requirements

20. Protections

C. Record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the minutes of the meeting to everyone concerned, promptly, including the Owner and the Architect.

D. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of work and reconvene the conference at the earliest feasible date.

1.5 PROGRESS MEETINGS

A. Conduct a weekly progress meeting at the project site at regularly scheduled intervals. Coordinate with the Owner and the Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request, Change Order request, mockup reviews, etc.

B. Attendees: In addition to representatives of the Owner, Architect, Construction Manager each sub-contractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future work shall be represented at these meetings by persons familiar with the project and authorized to conclude matters relating to progress.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the project.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's construction schedule, whether on time or ahead or behind schedule. Determine how construction that is behind schedule will be expedited; and secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the allotted contract time.

2. Review the present and future needs of each entity present, including such items as:

    a. Interface requirements
    b. Time
    c. Sequence
    d. Deliveries
    e. Off-site fabrication problems
    f. Access
    g. Site utilization
    h. Temporary facilities
    i. Hours of work
    j. Hazards of work
    k. Housekeeping
    l. Quality and work standards
    m. Change Orders
    n. Documentation of information for payment requests

D. Reporting: No later than three (3) days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1. Schedule Updating: update the construction progress schedule after each progress meeting where modifications to the schedule have been made or recognized. Issue the updated schedule concurrently with the report of each meeting.

1.6 GUARANTEE/WARRANTIES; BONDS; AND SERVICE AND MAINTENANCE CONTRACTS REVIEW MEETING:

A. Eleven (11) months following the date of Substantial Completion of the work, hold a meeting for the purpose of review of guarantees/warranties; bonds; and service and maintenance contracts for materials and equipment.

B. Meeting location shall be at a mutually agreed upon site, as convenient as possible for all parties.

C. Attending shall be representatives of the following:

1. Owner

2. Architect

3. Owner's and Architect's Consultants, as appropriate to the agenda

4. Construction Manager

5. Commissioning Agent

6. Contractor

7 Sub-contractors, as appropriate to the agenda

8. Suppliers, as appropriate to the agenda

9. Others, as appropriate to the agenda

D. Owner will prepare an agenda for the meeting and distribute it to the attendees a minimum of seven (7) calendar days in advance of the scheduled meeting date.

E. The Contractor shall take action as appropriate to implement repair or replacement of defective items and to extend service and maintenance contracts.

F. Owner or Owners Representative shall take meeting notes and distribute them to all attendees. Attendees taking exception to anything in the meeting notes shall state in writing to the Owner within five (5) working days, following receipt of meeting notes.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01200

SECTION 01300 – SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for submittals required for performance of the work, including the following:

1. Submittal Schedule
2. Daily Construction Reports
3. Shop Drawings
4. Product Data
5. Samples
6. Quality Assurance Submittals
7. Record Drawings
8. Record Specifications

B. Administrative Submittals: Refer to other Division 1 Sections and other contract documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits
2. Applications for Payment
3. Performance and Labor & Material Bonds
4. Insurance Certificates
5. List of Sub-Contractors

C. Related Sections: The following sections contain requirements that relate to this section:

1. Division 1 SECTION 01027 – APPLICATION FOR PAYMENT specifies requirements for submittal of the Schedule of Values.

2. Division 1 SECTION 01040 - COORDINATION specifies requirements governing preparation and submittal of required coordination drawings.

3. Division 1 SECTION 01200 – PROJECT MEETING specifies requirements for submittal and distribution of meeting and conference minutes.

4. Division 1 SECTION 01400 – QUALITY CONTROL specifies requirements for submittal of inspection and test reports.

5. Division 1 SECTION 01700 – CONTRACT CLOSEOUT specifies requirements for submittal of project Record Documents and warranties at project closeout.

1.3 DEFINITIONS

A. Coordination drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended.

1. Preparation of coordination drawings is specified in Division 1 SECTION 01040 - COORDINATION and may include components previously shown in detail on Shop Drawings or Product Data.

B. Field samples are full size physical examples erected onsite to illustrate finishes, coatings or finish materials. Field samples are used to establish the standard by which the work will be judged.

C. Mockups are full size assemblies for review of construction, coordination, testing or operation; they are not samples.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.

a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

   a. Allow three (3) weeks for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals, or needs additional information to complete review.
   b. If an intermediate submittal is necessary, process the same as the initial submittal.
   c. Allow two (2) weeks for reprocessing each submittal.
   d. No extension of contract time, overhead or profit will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the work to permit processing.
   e. Allow four (4) weeks for initial review of any submittal requiring review by Authority Having Jurisdiction (AHJ). A listing of these known submittals is indicated on the contract drawings, but this is not necessarily exhaustive.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4” x 5” (100 x 125 mm) on the label or beside the title block on the Shop Drawings to record the Contractor's review and approval markings and the action taken.

2. Include the following information on the label for processing and recording action taken:

   a. Project Name
   b. Date
   c. Name and Address of the Architect
   d. Name and Address of the Contractor
   e. Name and Address of Sub-Contractor
   f. Name and Address of Supplier
   g. Name of the Manufacturer
   h. Number and Title of appropriate specification section
   i. Drawing Number and detail references, as appropriate

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.

1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from contract document requirements, including variations and limitations. Include Contractor's certification that information complies with contract document requirements.

2. Transmittal Form: Use AIA Document G810.

1.5 SUBMITTAL SCHEDULE

A. After development and acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule within ten (10) days of the date required for submittal of the Contractor's construction schedule.

1. Coordinate submittal schedule with the list of sub-contracts, schedule of values and the list of products as well as the Contractor's construction schedule.

2. Prepare the schedule in chronological order. Provide the following information:

a. Scheduled date for the first submittal
b. Related section number
c. Submittal category (Shop Drawings, Product Data or Samples)
d. Name of the Sub-Contractor
e. Description of the part of the work covered
f. Scheduled date for resubmittal
g. Scheduled date for the Architect's final release or approval

B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, Sub-Contractors and other appropriate parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

C. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.6 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report recording the following information concerning events at the site and submit duplicate copies to the Architect and Owner daily:

1. List of sub-contractors at the site
2. Exact count of personnel at the site from each contractor or sub-contractor
3. Time spent by each person working on site vs off the job site
4. High and low temperatures, general weather conditions
5. Accidents and unusual events
6. Meetings and significant decisions
7. Stoppages, delays, shortages and losses
8. Emergency procedures
9. Orders and requests of governing authorities
10. Change Orders received, implemented
11. Services connected, disconnected
12. Equipment or system tests and startups
13. Partial Completions, occupancies
14. Substantial Completions authorized
15. Record Drawing identified changes
16. Record Specification identified changes

1.7 SHOP DRAWINGS

A. Submit newly prepared information drawn accurately to scale. Highlight, encircle or otherwise indicate deviations from the contract documents. Do not reproduce contract documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the project is not a Shop Drawing.

B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:

1. Dimensions

2. Identification of products and materials included by sheet and detail number

3. Compliance with specified standards

4. Notation of coordination requirements

5. Notation of dimensions established by field measurement

6. Sheet Size: Except for templates, patterns and similar full size drawings, submit Shop Drawings on sheets at least 8½" x 11" but, no larger than 30" x 42".

7. Submit in the quantity the Contractor requires to be returned, together with four (4) additional copies each of brochures, catalog cuts and similar material for mechanical, electrical, hardware and elevator items; and three (3) additional copies for all others.

8. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

1.8 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing in diagrams and templates, standard wiring diagrams and performance curves.

1. Mark each copy to show applicable choices and options. Where printed, Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:

   a. Manufacturer's printed recommendations
   b. Compliance with trade association standards
   c. Compliance with recognized testing agency standards
   d. Application of testing agency labels and seals
   e. Notation of dimensions verified by field measurement
   f. Notation of coordination requirements

2. Do not submit Product Data until compliance with requirements of the contract documents has been confirmed.

3. Preliminary Submittal: Submit a preliminary single copy of Product Data where selection of options is required.

4. Submittals: Submit three (3) copies of each required submittal; submit four (4) copies where required for maintenance manuals. The Architect will retain one and will return one (1) marked with action taken and corrections or modifications required. One (1) copy with review comments will be supplied to the Owner.

    a. Unless non-compliance with contract document provisions is observed, the submittal may serve as the final submittal.

5. Distribution: Furnish copies of final submittal to installers, sub-contractors, suppliers, manufacturers, fabricators and others required for performance of construction activities. Show distribution on transmittal forms.

    a. Do not proceed with installation until a copy of Product Data is in the installer's possession.
    b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.9 SAMPLES

A. Submit full size, fully fabricated samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets and swatches showing color, texture and pattern.

1. Mount or display samples in the manner to facilitate review of qualities indicated. Prepare samples to match the Architect's sample. Include the following:

    a. Specification section number and reference
    b. Generic description of the sample
    c. Sample source
    d. Product name or name of the manufacturer
    e. Compliance with recognized standards
    f. Availability and delivery time

2. Submit samples for review of size, kind, color, pattern, texture, and lead content testing for all paints and painted materials. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

    a. Where variation in color, pattern, texture or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show approximate limits of the variations.

b. Refer to other specification sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
c. Refer to other sections for samples to be returned to the Contractor for incorporation in the work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of sample submittals.
d. Samples not incorporated into the work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
e. Samples that are tested by WCSD to have any lead content shall be rejected.

3. Preliminary Submittals: Submit a full set of choices where samples are submitted for selection of color, pattern, texture or similar characteristics from a range of standard choices.

   a. The Architect will review and return preliminary submittals with the Architect's notation, indicating selection and other action.

4. Submittals: Except for samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit three (3) sets. The Architect will return one set marked with the action taken.

5. Maintain sets of samples, as returned, at the project site, for quality comparisons throughout the course of construction.

   a. Unless non-compliance with contract document provisions is observed, the submittal may serve as the final submittal.
   b. Sample sets may be used to obtain final acceptance of the construction associated with each set.

B. Distribution of Samples: Prepare and distribute additional sets to sub-contractors, manufacturers, fabricators, suppliers, installers and others as required for performance of the work. Show distribution on transmittal forms.

1. Field samples are full size examples erected on site to illustrate finishes, coatings or finish materials and to establish the project standard.

   a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.10 QUALITY ASSURANCE SUBMITTALS

A. Submit quality control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports and other quality control submittals as required under other sections of the specifications.

B. Certifications: Where other sections of the specifications require certification that a product, material or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.

1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 SECTION 01400 – QUALITY CONTROL.

1.11 ARCHITECT'S ACTION

A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When the Architect marks a submittal "No Exceptions Taken," the work covered by the submittal may proceed provided it complies with requirements of the contract documents. Final payment depends on that compliance.

2. Final-But-Restricted Release: When the Architect marks a submittal "Implement Exception Noted," the work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the contract documents. Final payment depends on that compliance.

3. Returned for Resubmittal: When the Architect marks a submittal "Not Approved, Revise and Resubmit," do not proceed with work covered by the submittal, including purchasing, fabrication, delivery or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.

a. Do not use, or allow others to use, submittals marked "Not Approved, Revise and Resubmit" at the project site or elsewhere where work is in progress.
b. When the submittal review action stamp is marked “Rejected”, do not proceed with that portion of the work covered by the submittal including, but not limited to, purchasing, fabrication, delivery or other activity. Make a new submittal in accordance with the review notations on the submittal and resubmit without delay in the same manner and number as for the original submittal. Resubmit as often as necessary as required to obtain an unrestricted or restricted release action. “Rejected” review action stamp notation shall not be construed by the Contractor as a valid reason for an increase in contract time.

4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "Action Not Required."

C. Unsolicited Submittals: The Architect will return unsolicited submittals to the sender without action.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01300

SECTION 01310A – PROGRESS SCHEDULES

PART 1 - GENERAL

1.1 THIS SECTION INCLUDES:

A. Schedule Submittal Requirements

B. Schedule Submittal Format

C. CPM Schedule Structural Requirements

D. Updating Schedules

E. Schedule Revisions

F. Time Extensions

G. Three (3) Week Projection Schedule

1.2 RELATED SECTIONS

A. Division 1 SECTION 01010 – SUMMARY OF WORK

B. Schedule of Values

C. Division 1 SECTION 01027 – APPLICATION FOR PAYMENT

D. Change Order Procedures

E. Division 1 SECTION 01300 – SUBMITTALS

1.3 SCHEDULE SUBMITTAL REQUIREMENTS

A. Submit, in duplicate, as described in Part 1.5 A., to the Owner and the Architect at the Pre-Construction Conference the following preliminary documents defining planned operations:

1. Baseline Schedule

B. The Architect and the Owner will review schedule submittals; such review shall not constitute an approval or acceptance of the Contractor's construction means, methods, sequencing or its ability to complete the work in a timely manner.

C. The preliminary documents will illustrate, at a minimum, a detailed baseline schedule for those activities commencing within the first ten (10) calendar days after the Notice to Proceed is issued by the Owner.

D. The Contractor shall submit the completed Baseline documents to the Architect within thirty (30) calendar days from the Notice of Award. The schedules shall integrate the activities of the preliminary schedules, and include all activities required for contract completion.

1. Within fifteen (15) calendar days after receipt of the complete Baseline Schedule, the Owner and Architect will communicate in writing their comments and concerns to the Contractor. Within five (5) working days, the Contractor shall adjust the schedule and progress curve to incorporate comments from the Owner and Architect and resubmit.

2. Upon Owner and Architect receipt and acknowledgment of revisions to the Baseline Schedule, it shall become part of the contract documents. Payment to the Contractor shall be withheld until such schedule, satisfactory in form and substance to the Owner and Architect, has been received.

E. Changes in logic and/or durations shall not be made without first noticing on the need to change with the Owner and Architect. Changes will be accepted where they are reasonable. Changes will be accepted or denied without liability. Changes to simply accommodate a perception of still being on schedule will not be accepted. At the discretion of the Architect and the Owner, the Baseline Schedule no longer represents the actual prosecution and progress of the work, the Architect and Owner will require a Recovery Schedule.

F. Failure to provide the required schedule information at the required times will result in denial of the relative portion of progress payments until such time that the schedule information is submitted in the correct format at the sole option of the Owner.

1.4 SCHEDULE SUBMITTAL FORMAT

A. Follow the guidelines below when submitting a baseline, update, or projection schedule.

1. Required Diagrams:

a. Gantt/Bar Chart or Time Scaled Logic Diagram; sheet size to be a maximum of 30 x 42 inches, organized by building and/or area, sorted by early start and early finish dates.

b. The formatting of the (hard copy submission) Baseline Schedule, schedule updates and three (3) week projection schedules shall include the following information (order and content of columns):

i. Activity Description
ii. Original Duration

iii. Remaining Duration
iv. Percent Complete
v. Total Float
vi. Target Early Start (except on Baseline Schedule)
vii. Target Early Finish (except on Baseline Schedule)
viii. On all updates and projections, show Baseline Schedule as Target (with Target Early Start and Target Early Finish dates)
ix. Format title block to include (at a minimum) the Contractor's name, school name, project number, file name, data date and run date.

c. The Contractor will be responsible for planning, scheduling, managing, and reporting the progress of the work in accordance with all of the specific methods and submittals described in this section.

d. The construction schedule shall be prepared by a competent scheduler, and used by the Contractor to plan, prosecute and coordinate the work in an orderly and expeditious manner. The schedule will be used by the Owner and the Architect to evaluate progress and status at the various stages of the project, allocate funds, determine the impact of any changes to the Contract and establish the basis for progress payments.

1.5 CPM SCHEDULE STRUCTURAL REQUIREMENTS

A. The following requirements have been defined in an effort to create consistency across all project schedules for purpose of analysis.

1. Structure of Schedule:

a. The schedule should be broken down into logical areas of work. We suggest separate areas of the building and that sitework be divided into appropriate areas. We expect to see, at a minimum, the following areas (where applicable):

i. Milestones
ii. Prepare & Issue Submittals
iii. Review Submittals
iv. Material Procurement & Delivery
v. On Site Work
vi. Off Site Work
vii. Area A
viii. Area B
ix. Area C
x. Area D
xi. Plant

xii. Etc.

b. Tasks related to the submittal/procurement of material or equipment shall be included as separate activities in the project schedule. Examples of procurement activities include, but are not limited to:

i. Material/Equipment submittal preparation
ii. Submittal and approval of material/equipment
iii. Delivery of O&M manuals
iv. Material/equipment fabrication and delivery
v. Delivery of extra parts/extra stock/special tools
vi. Notification of Owner furnished materials/equipment delivery requirements
vii. Contractor's original network diagram submittal shall become the Baseline Schedule, once it is found acceptable by the Owner. The Baseline Schedule shall be duplicated and utilized as the Current Schedule and shown graphically over the Baseline.

c. Construction activities shall include at a minimum, but are not limited to:

i. Tasks corresponding to each specification section covered in the Specification Index in Divisions 2 through 16
ii. Tasks related to mobilization / demobilization
iii. Tasks related to Owner; Owner provide materials, FFE delivery and setup, Move in prior to substantial and final completion
iii. The installation of temporary or permanent work by tradesman
iv. Testing and inspections of installed work by technicians, inspectors, or engineers
v. System utility outages and tie ins
vi. Start up and testing of equipment, commissioning of building and related systems
vii. Scheduling of specified manufacturer's representatives
viii. Final clean up
ix. Training to be provided
x. Punch list completion
xi. Maintenance period
xii. Administrative tasks necessary to start, proceed with, accomplish or finalize the contract

1.6 UPDATING SCHEDULES

A. Updated Schedules shall accompany the monthly Application for Payment, reflecting progress since previous month's submittal.

B. The schedule update shall show the status of all activities, including those in progress, completed or not started, indicated by start and finish dates, whether forecasted or actual, completion percentages based on time, original and remaining durations, any changes in network logic or activity durations and any other relevant information. Refer to Part 1.8 for revisions to the Schedule.

C. Identify activities modified since previous submittal, major changes in work, changes associated with approved Change Orders and any other identifiable changes.

D. Actual start and finish dates shall not be automatically updated by default mechanisms that may be included in the CPM scheduling software system. Actual start and actual finish dates on the CPM schedule shall match the dates of actual work accomplished in the field and not on projected completion dates. Out of sequence progress (if applicable) shall be handled through Retained Logic, not the option of Progress override.

E. With each updated schedule submission, the Contractor shall submit a brief narrative report, including descriptions of schedule revisions such as changes in network logic, planned activity start dates, duration or in the critical path. The report will include a description of the amount of progress during the last month, a description of any problem areas, current or anticipated delays and their estimated schedule impacts. In the narrative report, the Contractor shall provide explanation for any slippage in contractual completion or other milestone dates. Additionally, the Contractor shall propose remedial measures necessary to recover any lost time, whether actual or forecasted. Contractor shall take such additional steps as are necessary in order to effectively eliminate or minimize such delays and to comply with the contract schedule.

1.7 SCHEDULE REVISIONS

A. Updating the schedule to reflect actual progress made up to the data date of a schedule update shall not be considered revisions to the Baseline Schedule.

B. If, as a result of a schedule update, it appears the baseline schedule no longer represents the actual prosecution and progress of the work, the Architect or Owner shall request a revised schedule from the Contractor. The revision shall address the Contractor’s current construction plan for completing the work without impacting contract time and cost. Approved

revisions to the schedule shall be incorporated into the Baseline Schedule at the next schedule update submission.

C. If the Architect or Owner recognizes at any time, regardless of, reason that the work has fallen behind the scheduled contract time, milestone, phase dates or for work activity on the latest schedule that indicates more than a critical five (5) day delay to

the project, the Contractor shall submit a written and documented Recovery Schedule within seven (7) calendar days of the Architect's/Owner's written request. The Contractor will document in the Recovery Schedule and narrative, all additional resources, including materials equipment and labor and modifications of operations which will be provided so as to meet the schedule. The Contractor will provide all such additional resources and modifications of operations without additional cost to the Owner. Such additional resources and modifications shall include but not be limited to:

1. Required overtime for the Contractor's personnel

2. Increased construction manpower in such quantities as will substantially eliminate the backlog of work and put the project back on schedule

3. Increase numbers of shifts per working day, working days per week or the amount of construction equipment or any combination of the foregoing which will put the project back on schedule

4. Reschedule activities to achieve the maximum practical concurrence of accomplishment of activities to put the project back on schedule

5. Supplemental progress schedules detailing the specific operation changes instituted to regain the contract schedule

The Contractor will implement the Recovery Schedule without additional cost to the Owner and provide for completion of the work in accordance with the remaining milestone dates without a time extension. Should the logic and/or durations of the Recovery Schedule not receive acceptance of the Architect and the Owner, the Contractor is responsible to use concurrent operations, additional manpower, additional shifts, overtime, etc., including 24 hour production work day, seven (7) day work week operation, as required to put the project back on schedule at no additional cost to the Owner.

D. The Contractor may also request revisions to the Baseline Schedule in the event the Contractor's planning for the work is revised. If the Contractor desires to make changes in the Baseline Schedule to reflect revisions in its method of operating and scheduling of the work, the Contractor shall notify the Architect and Owner in writing stating the reason for the proposed revisions and accompanied by a copy of the Contractor's electronic CPM Schedule. The revision shall address the Contractor's current construction plan for completing the work without impacting contract time and cost. Accepted revisions to the schedule shall be incorporated into the Baseline Schedule at the next schedule update submission.

E. If changes in the method of operation and scheduling are desired, the Owner and/or Architect shall be notified in writing stating the reasons for the change. If the Owner and/or Architect considers these changes to be of a major nature, the Contractor

may be required to revise and submit for acceptance, without additional cost to the Owner, the network diagrams and required sorts. A change may be considered of a major nature if the estimated time required or actually used for an activity or the network logic is varied from the original plan to a degree that there is a reasonable doubt as to the effect on the contract completion date(s) (or phase completion dates). Changes that affect activities with adequate float time shall be considered a major change when their cumulative effect could extend the contract completion dates.

F. Use of float suppression techniques, such as:

1. Preferential sequencing (arranging critical path through activities more susceptible to Owner and/or Architect caused delay);

2. Special lead/lag logic restraints;

3. Zero total or fee float constraints;

4. Extended activity times, or imposing constraint dates other than as required by the contract;

shall be cause for rejection of the project schedule or its updates. The use of resource Leveling (or similar software features) used for the purpose of artificially adjusting activity durations to consume float and influence the critical path is expressly prohibited.

G. Definitions of Float or Slack

1. Free float is the length of time the start of an activity can be delayed without delaying the start of a successor activity.

2. Total float is the length of time along a given network path that the actual start and finish of activity(ies) can be delayed without delaying the project completion date.

3. Project float is the length of time between the Contractor's early completion (or Substantial Completion) and the contract completion date.

4. Project float is for the benefit of the project and for the mutual use of the Owner and the Contractor.
5. Contractor's non-work weather days bank of time activity shall not be defined as "Float or Slack" for this project. It is Contractor time identified in item 1.9.G which follows.

H. Negative float will not be a basis for requesting time extensions. Any extension of time will be addressed in accordance with item 1.9 Time Extensions. Scheduled

completion dates(s) that extend beyond the contract (or phase) completion date(s) (evidenced by negative float) may be used in computation for assessment of payment withholdings. The use of this computation is not to be construed as a means of acceleration.

1.8 TIME EXTENSIONS

A. Extensions of time to the Contract may be granted only for delays to activities on the critical path that actually delay the project completion beyond the date of Substantial Completion or for delays to activities that transform that activity onto the critical path, and, as a result, delay completion beyond the contract Substantial Completion date.

B. Seasonal weather conditions and resulting impacts shall be included in the planning and scheduling of all work influenced by wind, cold or warm weather, smoke, snow, and/or precipitation to ensure completion of all work within the Contract time.

If all the work, or the portion(s) of the work which are the currently controlling operation(s), are suspended for weather so as not to prosecute the work, a time extension at the Owners discretion, **may be awarded if the following conditions are satisfied**

a. The weather shall actually be the delay to the Substantial Completion Date of the project and the delay must be beyond the control and without the fault or negligence of Contractor; weather will be evaluated based on the original baseline schedule without revision if revision is the result of contractor performance; **and**

b. The weather recorded by NOAA / NWS (WS Form: F6) website: (www.weather.gov/climate/index), Reno location or owner approved location of work during the Contract period shall be found to occur more frequently than the weather normally recorded by NOAA / NWS to be anticipated is documented more frequently occurring than 5 Year NOAA / NWS (WS Form: F6) Averages for all project locations; or

c. Owner/Architect orders the stoppage or suspension of the work in the interest of public safety or health or due to specification requirements.

Weather is defined for the purposes of this Contract to be compared to current recorded National Oceanic and Atmospheric Administration (NOAA) / National Weather Service Preliminary Local Climatological Data (WS FORM: F-6) for Station: Reno, Nevada, or for owner approved alternate project location, as follows:

- **PRECIPITATION** water equivalent of greater than or equal to 0.1 inch

recorded for the 24-hour period, of the date, and /or

- **AVERAGE** wind speed of greater than or equal to 20 miles per hour recorded for the 24-hour period for the date of occurrence. **NOT** 2 Minute Sustained or Gusts as recorded in (WS FORM:F6).

The schedule of anticipated weather delays is based on current National Oceanic and Atmospheric Administration (NOAA) / National Weather Service (NWS) records kept as Preliminary Local Climatological Data (WS FORM: F-6) for Station: Reno, Nevada, (e.g. 5 Year NOAA / NWS (WS Form: F6) Averages) for all project locations **and will constitute the baseline for the total Contract Time weather delay evaluations.** Contractor's CPM schedule shall be understood to include as a minimum, the amount of weather delay days lost in all Contractors' weather dependent activities occurring during the activity.

1.9 THREE (3) WEEK PROJECTION SCHEDULE

A. As deemed necessary by the Owner or Architect, the Contractor shall provide a three (3) week detailed short interval schedule for each building story, and area of the work, at regularly scheduled progress meetings. The format shall be satisfactory to the Owner and Architect. Short interval schedules shall be based upon the most current precedence Network Diagram and will indicate the actual progress achieved the previous week as well as the detailed activities scheduled for the next two (2) weeks and will show anticipated durations, start and completion dates for activities, and how the schedule tracks to the baseline schedule. All projection schedules shall be derived from the baseline schedule.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01310A

SECTION 01400 – QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all contract documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for quality control services.

B. Quality control services include inspections, tests and related actions, including reports performed by the Contractor, by independent agencies and by governing authorities. They do not include contract enforcement activities performed by the Architect.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with contract document requirements.

D. Requirements of this section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality control requirements for individual construction activities are specified in the sections that specify those activities. Requirements in those sections may also cover production of standard products.

2. Specified inspections, tests and related actions do not limit the Contractor's quality control procedures that facilitate compliance with contract document requirements.

3. Requirements for the Contractor to provide quality control services required by the Architect, Owner or Authorities Having Jurisdiction (AHJ) are not limited by provisions of this section.

E. Related Sections: The following sections contain requirements that relate to this section:

1. Division 1 SECTION 01045 – CUTTING AND PATCHING specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.

2. Division 1 SECTION 01300 – SUBMITTALS specifies requirements for development of a schedule of required tests and inspections.

1.3 RESPONSIBILITIES

A. Owners Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, the Owner or Owners representatives/agents, project managers, QA/QC inspectors, coordinators etc. shall provide inspections, tests and other quality control services specified elsewhere in the contract documents and required by AHJ.

1. Where individual sections specifically indicate that certain inspections, tests and other quality control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality control services. Costs for these services are included in the contract sum.

2. Where individual sections specifically indicate that certain inspections, tests and other quality control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.

    a. Where the Owner has engaged a testing agency for testing and inspecting part of the work and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.

B. Retesting: The Contractor is responsible for retesting where results of inspections, tests or other quality control services prove unsatisfactory and indicate non-compliance with contract document requirements, regardless of whether the original test was the Contractor's responsibility.

1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated non-compliance with contract document requirements.

C. Associated Services: Cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the work.

2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.

3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.

4. Provide facilities for storage and curing of test samples.

5. Deliver samples to testing laboratories.

6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.

7. Provide security and protection of samples and test equipment at the project site.

D. Duties of the Testing Agency: The independent agency engaged to perform inspections, sampling and testing of materials and construction specified in individual sections shall cooperate with the Architect and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The agency shall notify the Architect and the Contractor promptly of irregularities or deficiencies observed in the work during performance of its services.

2. The agency is not authorized to release, revoke, alter or enlarge requirements of the contract documents or approve or accept any portion of the work.

3. The agency shall not perform any duties of the Contractor.

E. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities. The Contractor will also be responsible for standby charges from the Owner’s laboratory if they are due to a scheduling error by the Contractor.

1.4 SUBMITTALS

A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test or similar service to the Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:

    a. Date of issue
    b. Project title and number
    c. Name, address and telephone number of testing agency
    d. Dates and locations of samples and tests or inspections
    e. Names of individuals making the inspection or test
    f. Designation of the work and test method
    g. Identification of product and specification section
    h. Complete inspection or test data
    i. Test results and an interpretation of test results
    j. Ambient conditions at the time of sample taking and testing
    k. Comments or professional opinion on whether inspected or tested work complies with the contract document requirements
    l. Name and signature of laboratory inspector
    m. Recommendations on retesting

1.5 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' *Recommended Requirements for Independent Laboratory Qualification* and that specialize in the types of inspections and tests to be performed.

    1. Each independent inspection and testing agency engaged on the project shall be authorized by AHJ to operate in the State of Nevada.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with the contract document requirements for Division 1 SECTION 01045 – CUTTING AND PATCHING

B. Protect construction exposed by or for quality control service activities and protect repaired construction.

C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 01400

SECTION 01600 – MATERIALS AND EQUIPMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all contract documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements governing the Contractor's selection of products for use in the project.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 1 SECTION 01420 - REFERENCES specifies the applicability of industry standards to products specified.

2. Division 1 SECTION 01300 – SUBMITTALS specifies requirements for submittal of the Contractor's construction schedule and the submittal schedule.

3. Division 1 SECTION 01631 – SUBSTITUTIONS specifies administrative procedures for handling requests for substitutions made after award of the contract.

1.3 DEFINITIONS

A. Definitions used in this section are not intended to change the meaning of other terms used in the contract documents such as *Specialties, Systems, Structure, Finishes, Accessories* and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.

1. *Products* are items purchased for incorporation in the work, whether purchased for the project or taken from previously purchased stock. The term *Product* includes the terms *Material, Equipment, System* and terms of similar intent.

a. *Named Products* are items identified by the Manufacturer's product name, including make and model number or other designation, shown or listed in the Manufacturer's published product literature that is current as of the date of the contract documents.

b. *Foreign Products* as distinguished from domestic products are items substantially manufactured fifty percent [(50%) or more of value] outside the United States and its possessions. Products produced or supplied by entities substantially owned [more than fifty percent (50%)] by persons who are not citizens of, nor living within, the United States and its possessions.

2. *Materials* are products substantially shaped, cut worked, mixed, finished, refined or otherwise fabricated, processed or installed to form a part of the work.

3. *Equipment* is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.4 SUBMITTALS

A. Product List: A list of products required is included at the end of this section. Prepare a schedule in tabular form showing each product listed. Include the Manufacturer's name and proprietary product names for each item listed.

1. Coordinate product list with the Contractor's construction schedule and the schedule of submittals.

2. Form: Prepare product list with information on each item tabulated under the following column headings:

   a. Related Specification Section Number
   b. Generic name used in the contract documents
   c. Proprietary Name, Model Number and similar designations
   d. Manufacturer's Name and Address
   e. Supplier's Name and Address
   f. Installer's Name and Address
   g. Projected Delivery Date or time span of delivery period

3. Initial Submittal: Within thirty (30) days after date of commencement of the work, submit three (3) copies of an initial product list. Provide a written explanation for omissions of data and for known variations from the contract requirements.

   a. At the Contractor's option, the initial submittal may be limited to product selections and designations that must be established early in the contract period.

4. Completed List: Within sixty (60) days after date of commencement of work, submit three (3) copies of the completed product list. Provide a written explanation for omissions of data and for known variations from the contract requirements.

5. Architect's Action: The Architect will respond in writing to Contractor within two (2) weeks of receipt of the completed product list. No response within this period constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirement that products comply with the contract documents. The Architect's response will include a list of unacceptable product selections containing a brief explanation of reasons for this action.

1.5 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

1. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability or compatibility. When a determination has been made select products from sources producing products that possess these qualities to the fullest extent possible.

B. Compatibility of Options: When the Contractor is given the option of selecting between two (2) or more products for use on the project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1. Each Prime Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate contactors.

2. If a dispute arises between Prime Contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.

C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the work:

1. No available domestic product complies with the contract documents.

2. Domestic products that comply with the contract documents are available only at prices or terms substantially higher than foreign products that comply with the contract documents.

D. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturers or producer’s nameplate or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on concealed surfaces, or where required for observation after installation, on accessible surfaces that are not conspicuous.

2. Equipment Nameplates: Provide a permanent nameplate on each item of service connected or power operated equipment. Locate on an easily accessible

surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:

a. Name of Product and Manufacturer
b. Model and Serial Number
c. Capacity
d. Speed
e. Ratings

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle products according to the Manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

1. Schedule delivery to minimize long term storage at the site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged or sensitive to deterioration, theft and other losses.

3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

4. Inspect products upon delivery to ensure compliance with the contract documents and to ensure that products are undamaged and properly protected.

5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

6. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

7. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 – PRODUCTS

2.1 PRODUCT SELECTION

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

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The contract documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Proprietary Specification Requirements: Where specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.

2. Semi Proprietary Specification Requirements: Where specifications name two (2) or more products or manufacturers, provide one (1) of the products indicated. No substitutions will be permitted.

   a. Where specifications specify products or manufactures by name, accompanied by the term “or equal” or “or approved equal.” Comply with the contract document provisions concerning *Substitutions* to obtain approval for use of an unnamed product.

3. Non-Proprietary Specifications: When specifications list products or manufacturers that are available and may be incorporated in the work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with contract requirements. Comply with contract document provisions concerning *Substitutions* to obtain approval for use of an unnamed product.

4. Descriptive Specification Requirements: Where specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with contract requirements.

5. Performance Specification Requirements: Where specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.

a. Manufacturer's recommendations may be contained in published product literature or by the Manufacturer's Certification of Performance.

6. Compliance with Standards, Codes, and Regulations: Where specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

7. Visual Matching: Where specifications require matching an established sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.

   a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the contract documents concerning *Substitutions* for selection of a matching product in another product category.

8. Visual Selection: Where specified product requirements include the phrase "…as selected from Manufacturer's standard colors, patterns, textures…" or a similar phrase, select a product and Manufacturer that comply with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.

9. Allowances: Refer to individual specification sections and *Allowance* provisions in Division 1 for allowances that control product selection and for procedures required for processing such selections.

PART 3 – EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with Manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.

   1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01600

SECTION 01631 - SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 1 SECTION 01420 - REFERENCES specifies the applicability of industry standards to products specified.

2. Division 1 SECTION 01300 - SUBMITTALS specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.

1.3 DEFINITIONS

A. Definitions in this article do not change or modify the meaning of other terms used in the contract documents.

B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the contract documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:

1. Substitutions requested during the bidding period, and accepted by addendum prior to award of the Contract, are included in the contract documents and are not subject to requirements specified in this section for substitutions.

2. Revisions to the Contract Documents requested by the Owner or Architect.

3. Specified options of products and construction methods included in the contract documents.

4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

A. Substitution Request Submittal: The Architect will consider requests for substitution if received within sixty (60) days after commencement of the work. Requests received more than sixty (60) days after commencement of the work may be considered or rejected at the discretion of the Architect.

1. Submit three (3) copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change-order proposals and include the Product Evaluation Questionaire (CP-F116) found within these bid documents.

2. Identify the product or the fabrication or installation method to be replaced in each request. Include related specification section and drawing numbers.

3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

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

b. A detailed comparison of significant qualities of the proposed substitution with those of the work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.

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

d. Samples, where applicable or requested.

e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

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

g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.

h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one (1) week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within three (3) weeks of receipt of the request, or two (2) weeks of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.

    a. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.

1. Extensive revisions to the contract documents are not required.

2. Proposed changes are in keeping with the general intent of the contract documents.

3. The request is timely, fully documented, and properly submitted.

4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the work promptly or coordinate activities properly.

5. The request is directly related to an “or-equal” clause or similar language in the contract documents.

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

7. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.

9. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.

10. The specified product or method of construction cannot provide a warranty required by the contract documents and where the Contractor certifies that the proposed substitution provides the required warranty.

B. The Contractor's submittal and the Architect's acceptance of shop drawings, product data, or samples for construction activities not complying with the contract documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01631

PRODUCT EVALUATION QUESTIONNAIRE

When proposing to substitute products for those specified or proposing a product to meet a specified performance standard, please furnish the following information to assist the Owner and Architect in evaluating the proposed product.

Bid/Quote #: _____

Project: _____

Specification Section: _____

Division:_____

Article #: _____

Name of Product: _____

Manufacturer's Name and Address: _____

_____

1. Attach manufacturer's complete technical data and all information relating to limitations of the product information requiring further testing be deemed necessary by the Architect, the cost of the prescribed test shall be borne by the Contractor. Contractor shall send product samples upon request.

2. Attach a list of projects where comparable use has been made of this product. List the name and location of the project, name of Owner or Architect, Engineer, General Contractor, and Subcontractor (if applicable), and the year installed.

3. List any problems encountered with this product on projects where it has been used. What corrective measures were required?

4. Provide a detailed comparison of the proposed substitute product with that of the specified product. Differences are to be highlighted and called out.

5. Submit a detailed specification, conforming to the format of the technical specifications herein contained, tailored to this project for installation of this product.

6. Will the services of an expert field representative be furnished to supervise the installation of this product?

7. Describe maintenance requirements for this product and availability of expert repair service, if needed.

8. Will the proposed substitution result in a change in Contract price or time of completion? If so, submit itemization of price change and explain effect on time of completion.

9. Will the use of the proposed product necessitate a change in the contract drawings or specifications?

10. Will the use of this product necessitate the payment of any license fees or royalties?

11. Furnish information establishing financial responsibility of the manufacturer. (Number of years in business, volume of business, Dunn & Bradstreet rating, etc.)

12. The Contractor certifies that he or she understands the conditions of use to which this product will be put and he/she warrants this product as stipulated in the General Conditions.

_____
Name of Contractor

_____
Signature of Officer, Owner or Partner

_____
Date

SECTION 01650 - CONTRACTOR MOVING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and supervisory requirements necessary for coordinating construction contractor moving requirements including, but not necessarily limited to, the following:

1. General Project Coordination Procedures

2. Conservation

3. Coordination Drawings

4. Administrative and Supervisory Personnel

5. Cleaning and Protection

B. Related Sections: The following sections contain requirements that relate to this section:

1. Division 1 SECTION 01200 – PROJECT MEETINGS for progress meetings and coordination meetings.

2. Division 1 SECTION 01300 - SUBMITTALS for preparing and submitting the Contractor's construction schedule.

1.3 OWNER RESPONSIBILITIES

A. The Owner shall complete all of the preparatory work required for the moving of furnishings, equipment, files, etc. as listed below:

1. Supply boxes, tape and box labels.

2. All personal property is the responsibility of WCSD.

3. All WCSD property that will fit in the WCSD provided boxes are to be boxed.
4. All file cabinets, desks, shelves and closets are to be emptied.

5. All loose trash shall be picked up and disposed of.

6. Inform school of time frames and schedules.

7. Coordinate staging area for temporary storage containers with site, as required.

8. All items will be ready to move based upon the Contractor's approved schedule.

1.4 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall be responsible for moving all furnishings, equipment, files, etc. as directed by the Owner and listed above and all of the items as listed:

1. Hire movers and manage all aspects of the move.

2. Supply all required moving tools, dollies, hand trucks, carts, etc.

3. Supply steel lockable temporary storage containers, if required.

4. Photograph the space prior to moving out.

5. Replace all items in space as indicated on photographs.

6. Repair or replace any WCSD owned property damaged by the Contractor.

7. Disconnect and reconnect, as needed, any computer, audio, copy and print equipment, etc.

1.5 COORDINATION

A. Coordinate the construction operations included in various sections of these specifications to assure efficient and orderly installation of each part of the work. Coordinate the construction operations included under different sections that depend on each other for proper installation, connection and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
3. Make provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination, include such items as required such as, notices, reports and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

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

1. Preparation of schedules

2. Installation and removal of temporary facilities

3. Delivery and processing of submittals

4. Progress meetings

5. Project closeout activities

D. Conservation: Coordinate moving operations to assure that operations are carried out with consideration given to conservation of energy, water and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the work.

E. Intent of Drawings:

1. The work of the Contractor and any applicable sub-contractors shall conform to the intent of the architectural and moving coordination work as reviewed by the Architect. Drawings are partly diagrammatic and do not intend to show in detail all features of the work. The Contractor shall carefully review the work to be performed by other trades, compare related drawings and shall thoroughly understand the moving responsibilities affecting their work.

2. All changes required in the work caused by failure to do so shall be at no expense to the Owner.

F. Moving Coordination Drawings:

1. Floor Plans and Wall Elevations shall include dimensioned sizes and locations for all door and window openings.

1.6 SUBMITTALS

A. Coordination Drawings: Prepare moving coordination drawings where careful coordination is needed for installation of products, materials and equipment to be relocated and stored.

1. Show the relationship of components shown on separate Shop Drawings.

2. Indicate required installation sequences. Acknowledge the Contractor's responsibilities in written fashion.

3. Comply with requirements contained in Division 1 SECTION 01300 - SUBMITTALS.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the mover of each component to inspect the conditions under which the work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 CLEANING AND PROTECTION

A. Clean and protect material and equipment during handling and installation. Apply protective covering, where required, to assure protection from damage or deterioration at the time of Substantial Completion.

B. Clean and provide maintenance on moved and stored work as frequently as necessary through the remainder of the construction period.

C. Limiting Exposures: Supervise construction operations to assure that no part of the relocated work completed or in progress, is subject to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading

2. Excessive internal or external pressures

3. Excessively high or low temperatures
4. Thermal shock
5. Excessively high or low humidity
6. Air contamination or pollution
7. Water or ice
8. Solvents
9. Chemicals
10. Light
11. Radiation
12. Puncture
13. Abrasion
14. Heavy traffic
15. Soiling, staining and corrosion
16. Bacteria
17. Rodent and insect infestation
18. Combustion
19. Electrical current
20. High speed operation
21. Improper lubrication
22. Unusual wear or other misuse
23. Contact between incompatible materials
24. Destructive testing
25. Misalignment

26. Excessive weathering
27. Unprotected storage
28. Improper shipping or handling
29. Theft
30. Vandalism

END OF SECTION 01650

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all bid documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

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

1. Inspection Procedures
2. Submittal of Project Record Document
3. Submittal of Operation and Maintenance Manual
4. Submittal of Warranties
5. Final Cleaning
6. Submittal of Regulated Systems [ACBM (Asbestos Containing Building Materials) & Lead] Closeout Documents
7. Submittal of any Final Prevailing Wage Reports

B. Closeout requirements for specific construction activities are included in the appropriate sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show one hundred percent (100%) completion for the portion of the work claimed as substantially complete.

    a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the contract sum.

    b. If one hundred percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.

c. Provide a list of all warranties, provide warranty duration, complete contract information of firm, and name of individual who will be performing work – post one (1) year. extended warranties will be submitted on a separate spread sheet within the closeout documents in the following format. Specification #, Company responsible for performing the warranty work, Local contact for responsible individual, phone number and email address, warranty description, warranty period, warranty start and end dates.

2. Advise the Owner of pending insurance changeover requirements.

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

4. Obtain and submit releases enabling the Owner unrestricted use of the work and access to services and utilities.

5. Include occupancy permits, operating certificates, and similar releases.

6. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.

7. Submit all required training meeting minutes and video recordings of all training courses.

8. Deliver tools, spare parts, extra stock, and similar items.

9. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.

10. Complete startup testing of systems and videoed training instruction of/for the Owner's Operation and Maintenance personnel.

11. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.

12. Complete final clean-up requirements, including touch up painting.

13. Touch-up and otherwise repair and restore marred, exposed finishes.

14. Provide Contractor furnished fixtures, furnishings, and equipment individually valued over $5,000 including description, manufacturer model and serial number, location at site, and specific value for equipment.

B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the work is substantially complete.

2. Results of the completed inspection will form the basis of requirements for final acceptance.

3. The cost for any Architectural services for reinspection is the Contractor's sole responsibility.

1.4 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.

2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.

3. Submit a certified copy of the WCSD's, Architect's & Engineer's final inspection lists of items to be completed or corrected, endorsed, and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.

4. Submit consent of surety to final payment.

5. Submit a final liquidated damages settlement statement.

6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

7. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the work.

B. Reinspection Procedure: The Architect will reinspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.

1. Upon completion of reinspection, the Architect will prepare a Certificate of Final Acceptance. If the work is incomplete, the Architect will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

2. If necessary, reinspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set black line white prints of Contract Drawings and Shop Drawings or continuous live electronic as built drawings with appropriate mark ups. Mark the set to show the actual installation where the installation varies from the work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. At the conclusion of the project, this record set of prints shall be submitted to the Architect for his/her review and comment. If the record set of prints is found to be complete and accurate, the prints shall be returned to the Contractor for submittal to the Owner with other closeout documents.

Record drawings must be reviewed and approved prior to each pay request by the Owner’s representative. The drawings should reflect the work that has been accomplished during the time period of the pay request. Lack of record drawings approval at the time of submittal of a pay request will result in a potential delay in the processing of the pay request.

1. Mark record sets with red erasable pencil or electronic. Use other colors to distinguish between variations in separate categories of work.

2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.

3. Note related change order numbers where applicable.

4. Organize record drawing sheets into manageable sets.

5. Provide one Bound set of record drawings with durable paper cover sheets; print suitable titles, dates and other identification on the cover of each set.

6. . Provide record drawings using electronic media, including one PDF and one Auto Cad compatible. Original media will be provided for Contractor to make required record drawing notations.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual, one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

Record specifications must be reviewed and approved prior to each pay request by the Owner's representative. The specifications should reflect the work that has been accomplished during the time period of the pay request. Lack of record specification approval at the time of submittal of a pay request will result in a potential delay in the processing of the pay request.

1. Mark these documents to show substantial variations in actual work performed in comparison with the text of the specifications and modifications.

2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.

3. Note related record drawing information and product data.

4. Upon completion of the work, submit an electronic record specifications to the Architect for the Owner's records.

D. Record Product Data: Maintain one (1) copy of each Product Data submittal. Note related Change Orders and markup of record drawings and specifications.

1. Mark these documents to show significant variations in actual work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.

2. Give particular attention to concealed products and portions of the work that cannot otherwise be readily discerned later by direct observation.

3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.

E. Record Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet with the Architect and the Owner's personnel at the project site to determine which samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the Owner's sample storage area.

F. Miscellaneous Record Submittals: Refer to other specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or electronic file, ready for continued use and reference. Submit to the Architect for the Owner's records.

G. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind 2 copies (1 hard copy / 1 electronic) properly indexed data in individual, heavy duty, 2-inch, 3-ring, vinyl covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions
2. Spare parts list
3. Copies of warranties
4. Wiring diagrams
5. Recommended turn around cycles
6. Inspection procedures
7. Shop Drawings and Product Data
8. Fixture lamping schedule
9. Any other applicable information

H. Warranty Manuals: organize warranty data into suitable set of manageable size, Bind 1 copy and 1 electronic properly indexed in individual, heavy duty 3 ring binder. Mark appropriate identification on front and spine. Include the following types of information:

1. All products with extended warranties beyond 1 year, including duration (start and end date, similar to what is described in 1.3, A, 1,c)
2. Manufacturer

3. Model / Serial where applicable

4. Manufacturer contact information

I. Provide one complete download of all Procore Files properly organized and linked in PDF versions. Contractor to ensure original Procore file and documentation remains in place on Procore for use by owner. Owner shall instruct the contractor of the proper file structure

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Film Document each training and demonstration. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals
2. Record documents
3. Spare parts and materials
4. Tools
5. Lubricants
6. Fuels
7. Identification systems
8. Control sequences
9. Hazards
10. Cleaning
11. Warranties and bonds
12. Maintenance agreements and similar continuing commitments

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up
2. Shut down
3. Emergency operations
4. Noise and vibration adjustments
5. Safety procedures
6. Economy and efficiency adjustments
7. Effective energy utilization

END OF SECTION 01700

SECTION 01710 - FINAL CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including all contract documents and addendums associated with this project shall apply to this section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for final cleaning at Substantial Completion.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 1 SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS specifies general cleanup and waste removal requirements.

2. Division 1 SECTION 1700 – CONTRACT CLOSEOUT specifies general contract closeout requirements.

3. Special cleaning requirements for specific construction elements are included in appropriate sections of Divisions 2 through 16.

C. Multiple Prime Contracts: Each Prime Contractor is responsible for final cleaning their own work. The Contractor for General Construction is responsible for coordinating final cleaning of an area or piece of equipment where more than one (1) Prime Contractor is involved.

D. Environmental Requirements: Conduct cleaning and waste disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and antipollution regulations.

1. Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in storm or sanitary drains.

2. Burning or burying of debris, rubbish, or other waste material on the premises is not permitted.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents

that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final-cleaning operations to all work spaces and any adjacent spaces affected by the work performed. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

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

1. Clean the Project Site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and foreign substances.

2. Sweep paved areas broom clean. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

3. Remove petrochemical spills, stains, and other foreign deposits.

4. Remove tools, construction equipment, machinery, and surplus material from the site.

5. Remove snow and ice to provide safe access to the building.

6. Clean exposed exterior and interior hard surfaced finishes to a dirt free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition. Wax any required flooring to the District standard.

7. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

8. Broom clean concrete floors in unoccupied spaces.

9. Vacuum clean carpet and similar soft surfaces, removing debris and excess nap. Shampoo, if required.

10. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

11. Remove labels that are not permanent labels.

12. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

    a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

13. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

14. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

15. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

16. Clean ducts, blowers, and coils if units were operated without filters during construction.

17. Clean food-service equipment to a sanitary condition, ready and acceptable for its intended use.

18. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs and defective and noisy starters in fluorescent and mercury vapor fixtures.

19. Leave the Project clean and ready for occupancy.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests. Comply with regulations of local authorities. This section is only applicable for a new facility or an addition to an existing facility.

D. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.

E. Compliances: Comply with regulations of Authorities Having Jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION 01710

BOARD OF TRUSTEES
WASHOE COUNTY SCHOOL DISTRICT
RENO, NEVADA

Project Title

Mechanical Upgrades

TECHNICAL SPECIFICATIONS

Bid Set

Date

April 16, 2025

Jerry Whitehead Elementary School
3570 Waterfall Drive
Sparks, Nevada 89434

PROFESSIONAL ENGINEER, STATE OF NEVADA
CARL J. LEMON
Exp. 12-31-25
MECHANICAL
No. 13389

04/16/25

FCIS #: 186-ME-0020/0019/0011/0004/0037/0032/0028

Project #: 25-165-186-02

MECHANICAL ENGINEERING CONSULTANTS

PETTY & ASSOCIATES, INC.
760 Margrave Drive, Suite 100
Reno, Nevada 89502
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Our Project #339224

Washoe County School District
Jerry Whitehead Elementary School
Mechanical Upgrades
Technical Specifications

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SECTION 01 00 00

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Administrative Requirements.

B. Submittals.

C. Quality Requirements.

D. Temporary Facilities and Controls.

E. Product Requirements.

F. Execution Requirements.

1.2 RELATED SECTIONS

A. Section 1: Definitions, Rules and Regulations.

B. Section 2: The Contract Documents.

C. Section 3: The Contract.

D. Section 4: The Owner.

E. Section 5: The Contractor.

F. Section 8: Insurance and Bonding.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate scheduling, submittals, and Work of various sections of specifications to ensure efficient and orderly sequence of installation of interdependent construction elements. Also, coordinate all construction activities with the owner to minimize disruption of owner's activities.
2. Verify utility requirement characteristics of operating equipment are compatible with building utilities
3. Coordinate space requirements and installation of mechanical and electrical work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable.
4. Coordinate space requirements, supports, and installation of mechanical and electrical work, which is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
5. In finished areas, conceal pipes, ducts, and wiring within construction.

B. Field Engineering:
1. Establish elevations, lines, and levels and certify elevations and locations of the Work conform to Contract Documents.
2. Verify field measurements are as indicated on shop drawings or as instructed by manufacturer.

C. Preconstruction Meetings:
1. When required in individual specification section, convene pre-installation meeting at Project site prior to commencing work of section.

D. Progress Meetings:
1. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
2. Preside at meetings, record minutes, and distribute copies within two days to those affected by decisions made.

E. Cutting and Patching:
1. Employ skilled and experienced installer to perform cutting and patching new Work; restore Work with new Products.
2. Submit written request in advance of cutting or altering structural or building enclosure elements.
3. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
   a. Fit several parts together, to integrate with other Work.
   b. Uncover Work to install or correct ill-timed Work.
   c. Remove and replace defective and non-conforming Work.
   d. Remove samples of installed Work for testing.
   e. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
4. Cut masonry and concrete materials using masonry saw or core drill. Restore Work with new Products in accordance with requirements of Contract Documents.
5. Fit Work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
6. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
7. Refinish surfaces to match adjacent finishes.

1.4 SUBMITTALS

A. Submittal Procedures:
1. Provide seven (7) copies of bound submittals for review.
2. Identify Project, Contractor, subcontractor and supplier, pertinent drawing and detail number, and specification section number, as appropriate.
3. Apply Contractor’s stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and contract documents.
4. Schedule submittals to expedite the Project and deliver to Petty & Associates at 760 Margrave Drive, Suite 100, Reno, Nevada. Coordinate submission of related items.
5. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
6. Identify variations from Contract Documents and product or system limitations, which may be detrimental to successful performance of the completed work.
7. Provide space for Contractor and Engineer review stamps.

8. When revised for re-submission, identify all changes made since previous submission.
9. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
10. Submittals not requested will not be recognized or processed.
11. If the contractor desires to make a substitution, he shall submit complete information of manufacturers engineering data to show the equality of the equipment or material offered to that specified.
    a. Include unit dimensions, weights, service clearances, piping diagrams, electrical diagrams, control diagrams, installation manuals, and start-up manuals.
    b. Contractor to include drawings showing installation of equipment, location in building or equipment room, dimensions, and connection to systems, i.e., piping, ductwork, controls, etc.
    c. No substitutions will be allowed unless requested and approved in writing.
    d. Materials of equal merit and appearance in the opinion of the architect will be approved for use. Architect/Engineer reserves the right to require originally specified item.
    e. Installation of approved substitution is the contractor's responsibility.
    f. Any system interface changes required for installation of approved substituted equipment must be made without additional cost including, but not limited to, structural, electrical and mechanical modifications, and all additional costs for design changes.
    g. The contractor shall be responsible for any and all additional costs incurred by any of the consulting Engineers, Architect, or building trades or construction changes required to accommodate the substituted equipment.
12. Submittal checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents.
    a. Submittal approval and acceptance by the Engineer does not relieve the contractor from the responsibility of conforming to the plans and specifications.
    b. Any action shown is subject to the requirements of the plans and specifications.
    c. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

B. Shop Drawings:
1. Submitted to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.
3. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
    a. Include signed and sealed calculations to support design.
    b. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
    c. Make revisions and provide additional information when required by authorities having jurisdiction.
4. Submit number of opaque reproductions Contractor requires, plus two copies which will be retained by Engineer.

1.5 QUALITY REQUIREMENTS

A. Quality Control:
1. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
2. Comply with manufacturer’s instructions.
3. Comply with specified standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

B. Manufacturer’s Field Services and Reports:
1. When specified in individual specification sections, require material or Product suppliers or manufacturers to furnish qualified staff personnel to observe site conditions and to initiate instructions when necessary.
2. Report observations and site decisions or instructions that are supplemental or contrary to manufacturer’s written instructions.

C. Examination:
1. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
2. Verify utility services are available, of correct characteristics, and in correct location.

D. Preparation:
1. Clean substrate surfaces prior to applying next material or substance.
2. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

1.6 TEMPORARY FACILITIES AND CONTROLS

A. Security:
1. Provide security and facilities to protect Work and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. Removal Of Utilities, Facilities, and Controls:
1. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion review.
2. Clean and repair damage caused by installation or use of temporary work.
3. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.7 PRODUCT REQUIREMENTS

A. Products:
1. Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work.
2. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents.
3. Provide interchangeable components of same manufacture for components being replaced.

B. Product Options:
1. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for manufacturers not named.

C. Substitutions:
1. Engineer will consider requests for Substitutions only within 15 days after date of Owner-Contractor Agreement.

1.8 EXECUTION REQUIREMENTS

A. Closeout Procedures:
1. Submit written certification Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
2. Submit final Application for Payment identifying total adjusted Contract Sum/Price, previous payments, and amount remaining due.

B. Final Cleaning:
1. Execute final cleaning prior to final inspection.
2. Clean interior and exterior surfaces exposed to view. Vacuum carpeted and soft surfaces.
3. Clean debris from site, roofs, gutters, downspouts, and drainage systems.
4. Replace filters of operating equipment.
5. Remove waste and surplus materials, rubbish, and construction facilities from site.

C. Starting Of Systems:
1. Provide seven days notification prior to start-up of each item.
2. Ensure each piece of equipment or system is ready for operation.
3. Execute start-up under supervision of responsible persons in accordance with manufacturer’s instructions.
4. Submit written report stating equipment or system has been properly installed and is functioning correctly.

D. Demonstration And Instructions:
1. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment.

E. Testing, Adjusting, And Balancing:
1. Adjust operating products and equipment to ensure smooth and unhindered operation.
2. Reports will be submitted by independent firm to Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with requirements of Contract Documents.
3. Re-testing required because of non-conformance to specified requirements will be charged to Contractor.

F. Protecting Installed Construction:
1. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
2. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
3. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
4. Prohibit traffic from landscaped areas.

G. Project Record Documents:
1. Maintain on site one set of Contract Documents to be utilized for record documents.
2. Record actual revisions to the Work. Record information concurrent with construction progress.
3. Specifications: Legibly mark and record at each Product section description of actual Products installed.
4. Record Documents and Shop Drawings: Legibly mark each item to record actual construction.

H. Operation And Maintenance Data:
1. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.
2. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.
3. Internally subdivide binder contents with permanent page dividers, logically organized, with tab titles legibly printed under reinforced laminated plastic tabs.
4. Contents:
   a. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, subcontractors, and major equipment suppliers.
   b. Part 2: Operation and maintenance instructions, arranged by system.
   c. Part 3: Project documents and certificates.

I. Spare Parts and Maintenance Materials:
1. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.
2. Deliver to and place in location as directed by Engineer/Owner; obtain receipt prior to final payment.

J. Warranties:
1. Provide duplicate notarized copies.
2. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.
3. Submit prior to final Application for Payment.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 22 05 00

BASIC MECHANICAL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Basic Mechanical Requirements specifically applicable to Division 15 Sections, in addition to Section 01 00 00 - General Requirements.

1.2 SUBMITTALS

A. Submit under provisions of Section 01 00 00.

B. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.

C. Mark dimensions and values in units to match those specified.

D. Submittals shall be grouped as HVAC or plumbing. Each group shall be complete and submitted in a single submittal bound in a 3-ring binder in 8-1/2x11format. ALL DIVISIONS MUST BE SEPARATED AND TABBED. Sloppy submittals will be rejected.

1.3 REGULATORY REQUIREMENTS

A. Conform to all applicable state and local building codes, and the latest edition of the International Building Code.

B. Plumbing: Conform to all of the local and state plumbing codes and the latest adopted edition of the Uniform Plumbing Code.

C. Mechanical: Conform to all of the local and state mechanical codes and the latest adopted edition of the Uniform Mechanical Code.

D. State of Nevada Department of Industrial Relations, Division of Occupational Safety and Health.

E. Permits and fees by the contractor.

1.4 PROJECT/SITE CONDITIONS

A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of the Architect/Engineer before proceeding.

C. All systems to be braced laterally per 2012 IBC requirements.

1.5 SHOP DRAWINGS

A. Prepare and submit individual shop drawings for each major division of work showing major elements, components, and systems of mechanical equipment and materials in relationship with other building components. Prepare drawings to an accurate scale of 1/8" =1"-0" or larger on 30" x 42" media. Indicate the locations of all equipment and materials, including clearances for servicing and maintaining equipment. Indicate movement and positioning of large equipment into the building during construction. The contractor shall incorporate coordination of other trades into the documents.

B. The Contractor shall prepare floor plans, reflected ceiling plans, elevations, sections, and details to conclusively coordinate and integrate all installations. Indicate locations where space is limited, and where sequencing and coordination of installations is of importance to the efficient flow of the work, including (but not necessarily limited to) the following:
1. Equipment
2. Ductwork.
3. Hydronic piping
4. Plumbing mains

PART 2 PRODUCTS

2.1 GENERAL

A. Provide and install products as specified as design base. Other manufacturers listed must meet or exceed the requirements of the specification. Any other products must be submitted as a substitution in strict conformance with Section 01 00 00 and shall be subject to the approval of the Engineer.

B. Products by listed manufacturers shall be reviewed a maximum of two times and products considered substitutions once for compliance with the contract documents. If in either case the submittals are returned to the contractor as rejected, the design base must be submitted and provided.

C. All piping, fittings, and components/accessories to be of domestic manufacturer, except items listed in approved vendors list.

PART 3 EXECUTION

3.1 GENERAL

A. The respective contractor shall correct all deficient work as identified in the observation reports, initial and date each individual item, and return to the Engineer prior to calling for a final review of each phase of the construction.

END OF SECTION

SECTION 22 05 13

COMMON MOTOR REQUIREMENTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Single phase electric motors.

B. Three phase electric motors.

1.2 RELATED WORK

A. Section 22 30 00 - Plumbing Equipment.

B. Section 23 20 00 - HVAC Pumps.

1.3 REFERENCES

A. AFBMA 9 - Load Ratings and Fatigue Life for Ball Bearings.

B. AFBMA 11 - Load Ratings and Fatigue Life for Roller Bearings.

C. ANSI/IEEE 112 - Test Procedure for Polyphase Induction Motors and Generators.

D. ANSI/NEMA MG 1 - Motors and Generators.

E. ANSI/NFPA 70 - National Electrical Code.

F. IEEE Std. 519-1981 - Guide for Harmonic Controls and Reactive Compensation of Static Power Converters.

G. ANSI/UL Std. 508 - Testing by Independent Laboratories.

1.4 SUBMITTALS

A. Submit product data under provisions of Section 01 00 00.

B. Submit test results verifying nominal efficiency and power factor for three phase motors larger than ½ horsepower.

C. Submit manufacturer's installation instructions under provisions of Section 01 00 00.

1.5 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provisions of Section 01 00 00.

B. Include assembly drawings, bearing data including replacement sizes, and lubrication instructions.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacture of electric motors and adjustable controllers for HVAC use, and their accessories, with minimum three years documented product development, testing, and manufacturing experience.

1.7 REGULATORY REQUIREMENTS

A. Conform to the latest edition of the National Electrical Code, and ANSI/NFPA 70.

B. Conform to the Nevada State Energy Code.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of Section 01 00 00.

B. Store and protect products under provisions of Section 01 00 00.

C. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weather-proof covering.

1.9 WARRANTY

A. Provide five-year manufacturer's warranty.

1.10 SPARE PARTS AND MAINTENANCE MATERIALS

A. Supply 3 of each size and type of fuse.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Motors:
1. General Electric.
2. Westinghouse.
3. Baldor.
4. Gould.
5. Substitutions: Under provisions of Section 01 00 00.

2.2 GENERAL CONSTRUCTION AND REQUIREMENTS

A. Motors: Design for continuous operation in 40 degrees C environment and for temperature rise in accordance with ANSI/NEMA MG 1 limits for insulation class, Service Factor, and motor enclosure type.

B. Visible Nameplate: Indicating motor horsepower, voltage, phase, cycles, RPM, full load amps, locked rotor amps, frame size, manufacturer's name and model number, Service Factor, Power Factor, and efficiency.

C. Electrical Connection: Conduit connection boxes, threaded for conduit. For fractional horsepower motors where connection is made directly, provide screwed conduit connection in end frame.

D. Motors provided as integral part of specification section shall be standard motor provided in that specification.

E. Minimum motor efficiencies shall be as follows in accordance with IEEE Test Method #112-B:

Motor's Horsepower	TEFC	ODP
1.0	82.5	82.5
1.5	84.0	84.0
2.0	84.0	84.0
3.0	87.5	86.5
5.0	87.5	87.5
7.5	89.5	88.5
10	89.5	89.5
15	91.0	91.0
20	91.0	91.0
25	92.4	91.7
30	92.4	92.4
40	93.0	93.0
50	93.0	93.0
60	93.6	93.6
75	94.1	94.1
100	94.5	94.1

PART 3 EXECUTION

3.1 APPLICATION

A. Motors drawing less than 250 Watts and intended for intermittent service may be germane to equipment manufacturer and need not conform to these specifications.

B. Motors shall be open drip-proof type, except where specifically noted otherwise.

C. Motors with frame sizes 254T and larger shall be energy efficient type.

D. Single phase motors for shaft mounted fans, and centrifugal pumps shall be split phase type.

E. Single phase motors for air compressors shall be capacitor start type.

F. Motors located in exterior locations shall be totally enclosed fan cooled (TEFC) unless specified otherwise.

END OF SECTION

SECTION 22 05 29

HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. Pipe, duct, and equipment hangers, supports, and associated anchors.

B. Equipment curbs, bases and supports.

C. Sleeves and seals.

D. Flashing and sealing equipment and pipe stacks.

1.2 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish hanger and support inserts or sleeves for placement into form work.

1.3 RELATED WORK

A. Section 22 07 00 – Plumbing Insulation.

B. Section 22 10 00 - Plumbing Piping.

C. Sections 23 09 00 through 23 30 00 - HVAC system.

1.4 REFERENCES

A. ANSI/ASME B31.1 - Power Piping.

B. NFPA 13 - Standard for the Installation of Sprinkler Systems.

C. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems.

D. NUSIG - National Uniform Seismic Installation Guidelines or approved equal.

1.5 QUALITY ASSURANCE

A. Supports for Sprinkler Piping: In conformance with NFPA 13.

B. All ductwork, piping, and equipment to be seismically per the 2012 IBC.

1.6 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 00 00.
   1. Indicate hanger and support framing and attachment methods.

PART 2 PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

A. Hangers for Pipe Sizes ½ to 1-1/2 Inch (12 to 38 mm): Malleable iron, or Carbon steel, adjustable swivel, split ring.

B. Hangers for Pipe Sizes 2 to 4 Inches (51 to 100 mm) and Cold Pipe Sizes 6 Inches (150 mm) and Over: Carbon steel H support type. Clevis type hangers are unacceptable.

C. Hangers for Hot Pipe Sizes 6 Inches (150 mm) and Over: Adjustable steel yoke, cast iron roll, double hanger.

D. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods; cast iron roll and stand for hot pipe sizes 6 inches (150 mm) and over.

E. When C-Type clamps are used to attach fire sprinkler piping hangers to the building structure, the C-Type clamps shall be provided with retaining straps approved for this use. This provision is in accordance with Chapter 6 of NFPA 13, 1999-edition.

F. Wall Support for Pipe Sizes to 3 Inches (76 mm): Steel hook.

G. Wall Support for Pipe Sizes 4 Inches (100 mm) and Over: Welded steel bracket and steel clamp; adjustable steel yoke and cast iron roll for hot pipe sizes 6 inches (150 mm) and over.

H. Vertical Support: Steel riser clamp.

I. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

J. Shield for Insulated Piping 2 Inches (51 mm) and Smaller: 18 gage (1.2 mm) galvanized steel shield over insulation in 180 degree segments, minimum 12 inches (300 mm) long at pipe support.

K. Shield for Insulated Piping 2-1/2 Inches (62 mm) and Larger (Except Cold Water Piping): Pipe covering protective saddles.

L. Shields for Insulated Cold Water Piping 2-1/2 Inches (62 mm) and Larger: Hard block non-conducting saddles in 90 degree segments, 12 inch (300 mm) minimum length, block thickness same as insulation thickness.

M. Shields for Vertical Copper Pipe Risers: Sheet lead.

2.2 HANGER RODS

A. Steel Hanger Rods: Threaded both ends, threaded one end, or continuous threaded.

2.3 INSERTS

A. Inserts: Malleable iron case of steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.4 FLASHING

A. Metal Flashing: 26 gage (0.5 mm thick) galvanized steel.

B. Lead Flashing: 5 lb/sq ft (24.5 kg/sq m) sheet lead for waterproofing; one lb/sq ft (5 kg/sq m) sheet lead for soundproofing.

C. Flexible Flashing: 47 mil (1.2 mm) thick sheet butyl; compatible with roofing.

D. Caps: Steel, 22 gage (0.8 mm) minimum; 16 gage (1.5 mm) at fire resistant elements.

2.5 EQUIPMENT CURBS

A. Rooftop equipment curbs for new air conditioning units shall be full perimeter custom fabricated curbs. Curbs shall be designed to current seismic standards and shall be provided with internal insulation and liner suitable for use in a return air plenum. Curb shall be provided with a separation between the supply plenum area and the return plenum area. See plans for detailed curb requirements. Submit complete shop drawings of curb showing all construction details for approval prior to ordering. Curb shop drawings and seismic calculations shall be prepared and signed by a State of Nevada licensed structural engineer.

2.6 SLEEVES

A. Sleeves for Pipes through Non-fire Rated Floors: Form with 18 gage (1.2 mm thick) galvanized steel or minimum 4-layers of 6" wide closed cell foam wrap, Flex-wrap or equal.

B. Sleeves for Pipes through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Form with steel pipe or 18 gage (1.2 mm thick) galvanized steel.

C. Sleeves for Pipes through Fire Rated and Fire Resistive Floors and Walls, and Fire Proofing: Minimum 14 gauge galvanized steel or steel pipe with UL listed fire stopping.

D. Sleeves for Round Ductwork: Form with galvanized steel.

E. Sleeves for Rectangular Ductwork: Form with galvanized steel.

F. Stuffing and Fire Stopping Insulation: Glass fiber type, non-combustible.

G. Calk: Acrylic sealant.

2.7 FABRICATION

A. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.

B. Design hangers without disengagement of supported pipe.

C. Provide copper plated hangers and supports for copper piping.

2.8 FINISH

A. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

PART 3 EXECUTION

3.1 INSERTS

A. Provide inserts for placement in concrete form work.

B. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.

C. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches (100 mm).

3.2 PIPE HANGERS AND SUPPORTS

A. Support horizontal piping as follows:

PIPE SIZE	MAX. HANGER SPACING	HANGER ROD DIAMETER
COPPER		
1/2 to 1-1/2" (12 to 32 mm)	6'-2" (2 m)	3/8" (9 mm)
2" and larger (50 mm and up)	10'-0" (3 m)	3/8" (9 mm) to 4" pipe 1/2" (13 mm) above
STEEL		
1/2 to 3/4" (12 to 19 mm)	10'-1" (3 m)	3/8" (9 mm)
1" and larger (25 mm and up)	12'-0" (4 m)	3/8" (9 mm) to 4" pipe 1/2" (13 mm) above
STEEL FOR GAS		
1/2" (12 mm)	6'-0" (2 m)	3/8" (9 mm)
3/4" to 1" (19 to 25 mm)	8'-0" (3 m)	3/8" (15 mm)
1-1/4" and larger (32 mm and up)	10'-0" (4.25 m)	3/8" (22 mm)

B. Install hangers to provide minimum 1/2 inch (13 mm) space between finished covering and adjacent work.

C. Place a hanger within 12 inches (300 mm) of each horizontal elbow.

D. Use hangers with 1-1/2 inch (38 mm) minimum vertical adjustment.

E. Support horizontal cast iron pipe adjacent to each joint, with 5 feet (1.5 m) maximum spacing between hangers.

F. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers. Attach pipe to every second trapeze.

G. Support riser piping independently of connected horizontal piping.

H. Provide steel channel spacers at vertical piping attached to wall as necessary to allow for the installation of wall insulation and finishes. Piping interrupting wall finishes is unacceptable.

I. Piping shall be restrained seismically in strict accordance with IBC requirements.

3.3 HOUSE KEEPING PADS AND SUPPORTS

A. Provide housekeeping pads of concrete at all floor mounted equipment. Size each pad to match equipment footprint plus 6" on each side. Pads to have chamfered edges.

B. Provide templates, anchor bolts, and accessories for mounting and anchoring equipment.

C. Construct support of steel pipe and fittings. Brace and fasten with flanges bolted to structure.

D. Provide rigid anchors for pipes after vibration isolation components are installed.

E. Equipment and related bases and supports shall be seismically braced per IBC 2003.

3.4 FLASHING

A. Provide flexible flashing and metal counterflashing where piping and ductwork penetrate weather or waterproofed walls, floors, and roofs.

B. Flash all plumbing piping pipes projecting 3 inches (75 mm) minimum above finished roof surface in accordance with roofing manufacturer’s requirements. For pipes through outside walls, turn flanges back into wall and calk, metal counterflash and seal.

C. Provide acoustical flashing around ducts and pipes penetrating equipment rooms, installed in accordance with manufacturer's instructions for sound control.

3.5 SLEEVES

A. Set sleeves in position in form work. Provide reinforcing around sleeves.

B. Extend sleeves through floors one inch (25 mm) above finished floor level. Calk sleeves full depth and provide floor plate.

C. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent work with stuffing or fire stopping insulation and calk seal air tight. Provide close fitting metal collar or escutcheon covers at both sides of penetration.

D. Install chrome plated steel escutcheons at finished surfaces.

END OF SECTION

SECTION 22 05 48

VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. This section covers the seismic restraint requirements for new pad mounted equipment and suspended vibration and non-vibration isolated items, systems and/or related suspended equipment, including but not limited to those covered under the following specification sections.
   1. Section 23 05 29 – Hangers and Supports for Plumbing Piping and Equipment.
   2. Section 22 10 00 - Plumbing Piping.
   3. Section 22 30 00 - Plumbing Equipment.
   4. Section 23 21 13 - Hydronic Piping.
   5. Section 23 20 00 - HVAC Pumps.
   6. Section 23 64 11 - Package Water Chillers - Reciprocating, Scroll, and Screw.

B. These seismic restraint requirements for suspended services shall supersede those contained within the above-mentioned specification sections.

C. The designers of record as called out within this specification shall be the project mechanical engineer.

D. Complete designs must be submitted to the designers of record for review and acceptance as a deferred approval prior to installation, with all costs including but not limited to project delay costs, to be born by the contractor.

1.2 QUALITY ASSURANCE

A. Suspended items, (i.e., Mechanical, Plumbing, HVAC, Fire Protection, Equipment), pad mounted equipment, including chiller and pumps, and related systems shall be attached to the structure, supported, and seismically restrained.
   1. Contractor shall obtain from the seismic restraint designer a project specific engineered seismic restraint submittal. The design shall be submitted to the designers of record for review and acceptance prior to installation.
   2. Contractor shall provide the seismic design representative with (AutoCAD) seismic shop drawings that have been coordinated with all other trades. Contractor provided shop drawings shall accurately represent the intended items/systems that will require seismic restraints. Contractor provided seismic shop drawings shall depict individual items/systems in two dimensions over-laid on an independent layer of the structural framing plans. The AutoCAD files shall include the complete identification of the items/systems (i.e. sizes, material type, contents, joint/assembly method, vertical support type, centerline elevation, etc.) – the identification text shall be provided in the same layer as the individual item/system. Each system shall be provided on a separate layer. Layer identification names within individual AutoCAD files shall include descriptors of what is actually being shown within the layer (i.e. mechanical piping, ductwork, plumbing piping, etc.). AutoCAD files shall be free of superfluous information. A direct reproduction of the contract documents is not acceptable.

3. The seismic system designer shall layout and identify seismic restraint locations on contractor provided seismic shop drawings. The layout and identification of seismic locations shall correspond with the Engineered Seismic Submittal. Seismic shop drawings shall be (signed & sealed) by a licensed Nevada Structural Engineer and shall be submitted to the designer of record for review and acceptance prior to installation.
4. Seismic restraint components shall be packaged in sealed factory assembled kits. Factory sealed kits shall be identified with factory labels that correspond with the accepted Engineered Seismic Submittal.
5. After installation of the seismic restraints, but prior to inspection, contractor shall submit to the designer of record for review and acceptance (As Built / Record Drawings) accurately identifying all actual installed system layouts and seismic restraint locations.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. NUSIG / Badger Industries, (OPA-0215).

B. B-Line, (OPA-0114)

C. I.S.A.T. (OPA-0485).

D. Substitutions: Must be submitted to the designers or record as a deferred approval and are subject to review and acceptance.

2.2 ANCHORS, INSERTS AND FASTENERS

A. All anchors, inserts, fasteners, or connections to the structure shall be submitted to the engineer of record for review and acceptance prior to installation.
   1. Do not use any anchor or insert in concrete or metal decking with concrete fill, which does not have a signed structurally engineered design value based on its installed application.

B. Cast-in-place inserts used in concrete or metal decking with concrete fill, shall be constructed entirely of malleable iron or steel.

C. Cast-in-place inserts that contain internal threads shall include the installation of a jam or lock nut to secure the connection of the vertical support rod to the cast-in-place insert.

D. Cast-in-place inserts that allow for horizontal adjustment shall not be allowed unless an engineered solution is provided to assure positive captive positioning and securing of the attachment.

E. Do not use powder driven and power driven (Shoot-In) fasteners, expansion nails or internally threaded anchors in concrete or metal decking with concrete fill.

F. All anchorage (i.e. drill-in, cast-in-place, etc.) to concrete and/or concrete filled metal decking shall provide a minimum embedment depth of (8 times) the anchorage diameter.

G. All beam clamps shall be constructed of malleable iron or steel. All single flange mounted beam clamps shall include a retaining strap or J-hook and must be submitted to the project structural engineer of record of review and acceptance prior to installation.

PART 3 SEISMIC RESTRAINT DESIGN

3.1 GENERAL REQUIREMENTS

A. The anchorage, supports, and seismic restraints of suspended systems listed below shall be designed to resist the total design seismic forces prescribed in the 2012 edition of the International Building Code.
   1. All new equipment including but not limited to: tanks, pumps.
   2. All new piping including but not limited to: domestic water, hydronic, gas.
   3. All new ducts including but not limited to: HVAC, exhaust, ventilation, and flues.
   4. Applications not covered by standard systems shall be engineered and built by the applicable system contractor. Engineering shall be (signed & sealed) by a licensed Nevada Structural Engineer and submitted to the designers of record for acceptance prior to installation. Cost to be born by the contractor.

B. Seismic restraint transverse and/or longitudinal spacing shall not exceed the lesser of the following:
   1. That which develops seismic design forces equal to or less than the capacity of the building structure.
   2. That which develops seismic design forces that are equal to or less than the capacity of weakest part, component, anchorage, etc., contained within the seismic brace assembly.
   3. 40’ feet transversely and/or 80’ feet longitudinally where pipes, conduits, and their connections are constructed of ductile materials (copper, ductile iron, steel or aluminum and brazed, welded or screwed connections). Reduce to 20’ feet transversely and/or 40’ feet longitudinally for (Hazardous Services) such as fuel, oil, medical gas, vacuum, etc.
   4. 20’ feet transversely and/or 40’ feet longitudinally where pipes, and their connections are constructed of non-ductile materials (i.e. cast iron, no-hub pipe and plastic).
   5. 40’ feet transversely and/or 80’ feet longitudinally for HVAC sheet metal ducts. Reduce to 20’ feet transversely and/or 40’ feet longitudinally for (Hazardous Services) such as exhaust ducts, smoke evacuation ducts, etc.

C. Contractor shall not adopt, use or otherwise implement the omission of any seismic restraints without prior review and acceptance by the designers of record. Submittals for omission of seismic restraints shall be limited to piping, ducts, and conduits. All submittals for omission of seismic restraints must included the following, and must be (signed & sealed) by a licensed Nevada Structural Engineer:
   1. Project specific cover letter clearly indicating that said engineer has (with respect to the attached submittal for omission of seismic restraints) completely review the project documents including these specifications, the items/systems designs individually and in coordination with all other trades, and that all code and/or project specified requirements for omission of restraints have been meet individually and in combination with each other, that (if the attached submittal for omission is approved) said engineer has been hired/retained by contractor to visit the project site without limit to review and inspect the installation of the items/systems which have been reviewed and approved for installation without seismic restraints.
   2. Engineered details and engineering for all vertical supports and their connections to the building structure to qualify, that top connections can not develop moments, that lateral motion will not cause loss of item/system support, that lateral motion of the item/system will not cause damaging impact with other items/systems, that lateral motion of the item/system will not directly or indirectly impact any life safety, emergency services and/or hazardous items/systems or their supports.

D. Seismic hardware brackets shall provide a (Captive) 360-degree connection that completely encloses or encircles the rod, anchor, bolt, fastener, etc. Open hook and/or open slot seismic hardware brackets shall not be allowed.

E. Vibration isolation hangers (i.e. spring hangers, etc.) for suspended items shall be as provided or approved by the seismic system designer.

F. Ceiling and other types of single strand wire shall not be used as a seismic restraint, sway brace and/or safety restraint material.

G. The connection to the building structure of non-seismic sway bracing and/or safety restraints shall meet or exceed that required for the attachment of seismic restraints to the building structure.

H. Fire Protection sprinkler piping shall be considered both (Emergency Services) and (Life Safety). All Fire Protection sprinkler piping shall be seismically restrained. The omission of seismic restraints for certain sizes of Fire Protection sprinkler piping listed within NFPA, FM, UL and others shall not be allowed.

I. Seismic restraints shall be installed to provide a minimum of (2) transverse and (1) longitudinal braces per run. A “run” shall be defined as a length of 5’ feet or more.

J. Cast iron pipe of any type, and other pipe joined with a shield and clamp assembly shall be restrained with a minimum of (1) transverse brace on each side of a change in direction of 90 degrees or more.

K. The accumulated load of multiple items to any given support (with or without seismic restraints) shall be limited so as not to overload the building structure and the support assembly.

L. Pipes, and other items attached to trapeze hangers, shall be located about each individual trapeze hanger so that the accumulated load is evenly distributed.

M. Trapeze systems installed in a multi-layer configuration shall have seismic restraints designed and installed for each individual trapeze layer.

N. Vertical supports shall be designed and installed to account for vertical tension and compression loads including accumulated seismic component increases.

O. Vertical supports, single hanger, trapeze hangers and their clamps, clips and methods of connection shall be constructed of ductile materials (i.e. copper, ductile iron, or steel).

P. Do not use insulation inserts (i.e., cal-sil, metal, etc.) at seismic brace connection locations without prior written approval from the system design engineer. Do not connect seismic bracing to insulation inserts without prior written approval from the system design engineer.

Q. Supports, seismic restraints and anchorage to the structure of all conditions that involve thermal and/or building expansion and contraction shall be engineered and built by the applicable system contractor. Engineering shall be (signed & sealed) by a licensed Nevada Structural Engineer and submitted to the designers of record for review and acceptance prior to installation. Cost of engineered adaptations and alterations borne under this section by Contractor.

3.2 FIELD QUALITY CONTROL

A. Review of seismic restraints by seismic designer's representative.

B. Inspection of seismic restraints by the (IOR) Inspector of Record, and/or (AHJ) Authority Having Jurisdiction, and/or designers of record.

C. Make all corrections recommended by the seismic system designer representative, the (IOR), the (AHJ), and/or designers of record.

END OF SECTION

SECTION 22 05 53

IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. Identification of mechanical products installed under Division 15.

1.2 REFERENCES

A. ANSI/ASME A13.1 - Scheme for the Identification of Piping Systems.

1.3 SUBMITTALS

A. Submit product data under provisions of Section 01 00 00.

B. Submit list of wording, symbols, letter size, and color coding for mechanical identification.

C. Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.

D. Submit manufacturer's installation instructions under provisions of Section 01 00 00.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Brady Corporation

B. Seton Identification Products.

C. Brimar Industries.

D. Substitutions: Under provisions of Section 01 00 00.

2.2 MATERIALS

A. Color: Unless specified otherwise, conform with ANSI/ASME A13.1.

B. Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light contrasting background color.

C. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch square.

D. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

E. Stencils: With clean cut symbols and letters of following size:

OUTSIDE DIAMETER OF INSULATION OR PIPE	LENGTH OF COLOR FIELD	SIZE OF LETTERS
3/4"-1-1/4" (20-30 mm)	8"	1/2"
1-1/2"-2" (40-50 mm)	8"	3/4"
2-1/2"-6" (56-150 mm)	12"	1-1/4"
8"-10" (200-250 mm)	24"	2-1/2"
Over 10" (250 mm)	32"	3-1/2"
Ductwork and Equipment	---	2-1/2”

F. Stencil Paint: In accordance with architectural, semi-gloss enamel.

G. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and fluid being conveyed.

H. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

I. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape of not less than 6 inch wide by 4 mil thick, manufactured for direct burial service.

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

A. Plastic Nameplates: Install with corrosive-resistant mechanical fasteners, or adhesive.

B. Plastic or Metal Tags: Install with corrosive-resistant chain.

C. Plastic Pipe Markers: Install in accordance with manufacturer's instructions.

D. Plastic Tape Pipe Markers: Install complete around pipe in accordance with manufacturer's instructions.

E. Underground Plastic Pipe Markers: Install 6 to 8 inches (150 to 200 mm) below finished grade, directly above buried pipe.

F. New Equipment: Install plastic nameplates. Small devices, such as in-line pumps, may be identified with plastic tags.

G. New Controls: Identify control panels and major control components outside panels with plastic nameplates.

H. New Valves: Identify valves in main and branch piping with tags.

I. New Piping: Identify piping, concealed or exposed, with plastic pipe markers or plastic tape pipe markers. Tags may be used on small diameter piping. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet (6 m) on straight runs including risers and drops, adjacent to each valve and "T", at each side of penetration of structure or enclosure, and at each obstruction.

3.3 VALVE CHART AND SCHEDULE

A. Provide valve chart and schedule in aluminum frame with clear plastic shield. Install within the mechanical room.

END OF SECTION

SECTION 22 07 00

PLUMBING INSULATION

PART 1 GENERAL

1.1 WORK INCLUDED

A. HVAC and plumbing pipe.

B. HVAC and plumbing equipment insulation.

C. Jackets and accessories.

1.2 RELATED WORK

A. Section 22 05 53 – Identification for Plumbing Piping and Equipment by plumbing or HVAC contractor.

1.3 REFERENCES

A. ANSI/ASTM C195 - Mineral Fiber Thermal Insulation Cement.

B. ANSI/ASTM C533 - Calcium Silicate Block and Pipe Thermal Insulation.

C. ANSI/ASTM C547 - Mineral Fiber Preformed Pipe Insulation.

D. ASTM B209 - Aluminum and Aluminum-alloy Sheet and Plate.

E. C449/C449M-00 - Standard Specification for Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement.

F. ASTM C727-01 - Standard Practice for Installation and Use of Reflective Insulation in Building Constructions.

G. ASTM E84 - Surface Burning Characteristics of Building Materials.

H. NFPA 255 - Surface Burning Characteristics of Building Materials.

I. UL 723 - Surface Burning Characteristics of Building Materials.

1.4 QUALITY ASSURANCE

A. Applicator: Company specializing in piping insulation application with three years minimum experience.

B. Materials: Flame spread/fuel contributed/smoke developed rating of 25/25 in accordance with ASTM E84, NFPA 255, and UL723.

1.5 SUBMITTALS

A. Submit product data under provisions of Section 01 00 00.

B. Include product description, list of materials and thickness for each service, and locations.

C. Submit installation instructions under provisions of Section 01 00 00.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Certainteed.

B. Owens/Corning.

C. Johns Manville.

D. Knauf.

E. FlexTherm

F. Dow.

G. Substitutions: Under provisions of the General Conditions.

2.2 INSULATION

A. Type A: Glass fiber insulation; ANSI/ASTM C547; 'k' value of 0.25 at 74 degrees F ('ksi' value of 0.035 at 24 degrees C); noncombustible.

B. Type B: Hydrous calcium silicate; ANSI/ASTM C533; rigid white; asbestos free; 'k' value of 0.44 at 300 degrees F ('ksi' value of 0.060 at 147 degrees C).

C. Type C: Closed Cellular foam; flexible, plastic; 'k' value of 0.28 at 74 degrees F ('ksi' value of 0.04 at 24 degrees C).

D. Type D: Polyisocyanurate foam; 'k' value of 0.19 at 75 degrees F ('ksi' value of 0.027 at 24 degrees C), 1.8 lbs/cu ft density, and maximum water absorption rating of 96% by volume tested in accordance with ASTM C272. Insulation manufactured in block or ‘bunstock’ form shall be fabricated into standard pipe insulation form as required to fit the specified piping. Insulation shall be Dow Trymer 1800 or approved equal.

E. Type E: Glass fiber, flexible or semi-rigid board, noncombustible ASTM C612, ‘k” value of 0.27 at 75 degrees F, operating temperature range of 0-650 degrees F. Board shall have factory applied reinforced foil kraft jackets with self-sealing adhesive joints.

2.3 JACKETS

A. Pipe Insulation:
1. ASTM C921, white Kraft paper with glass fiber yarn, bonded to aluminized film.
2. Moisture vapor transmission: ASTM E96; 0.02 per-inches.

B. Equipment Insulation Jackets:
1. Canvas Equipment Jacket: UL listed, 6 oz/sp yd, plain weave cotton fabric with fire retardant lagging adhesive compatible with insulation.

2.4 ACCESSORIES

A. Insulation Bands: ½ inch wide; 0.020 inch (0.38 mm) thick aluminum.

B. Metal Jacket Bands: ½ inch wide; 0.020 inch thick aluminum.

C. Insulating Cement: ANSI/ASTM C195; hydraulic setting mineral wool.

D. Finishing Cement: ASTM C449/C449-00.

E. Fibrous Glass Cloth: Untreated; 9 oz/sq yd (305 g/sq m) weight.

F. Adhesives: Compatible with insulation.

PART 3 EXECUTION

3.1 PREPARATION

A. Install materials after piping has been tested and approved.

3.2 INSTALLATION-PIPING SYSTEMS

A. Install materials in accordance with manufacturer's instructions.

B. Continue insulation with vapor barrier through penetrations and hangers.

C. In exposed piping, locate insulation and cover seams in least visible locations.

D. On insulated piping with vapor barrier, insulate fittings, valves, unions, flanges, strainers, and flexible connections.

E. Neatly finish and seal exposed insulation at supports, protrusions, and interruptions.

F. Inserts and Shields:
1. Piping 1-1/2 inches Diameter and Smaller: Install galvanized steel shield between pipe hanger and insulation.
2. Piping 2 inches Diameter and Larger: Install insert between support shield and piping and under finish jacket.
   a. Insert Configuration: Minimum 6 inches long, of thickness and contour matching adjoining insulation; may be factory fabricated.
   b. Insert Material: Compression resistant insulating material suitable for planned temperature range and service.
3. Piping Supported by Roller Type Pipe Hangers: Install galvanized steel shield between roller and inserts.

3.3 INSTALLATION - EQUIPMENT

A. Factory Insulated Equipment: Do not insulate.

B. Exposed Equipment: Locate insulation and cover seams in least visible locations.

C. Fill joints, cracks, seams, and depressions with bedding compound to form smooth surface. On cold equipment, use vapor retarder cement.

D. Equipment in Mechanical Equipment Rooms, package central plant or Finished Spaces: Finish with canvas jacket sized for finish painting.

3.4 SCHEDULE

PIPING	INSULATION TYPE	PIPE SIZE Inch	THICKNESS Inch
Domestic hot water and domestic hot water recirculation	"A"	Up to 1-1/4" 1-1/2" to 4"	1" 1-1/2"
Heating water supply and return	"A" "A"	Up to 1-1/4" 1-1/2" to 4"	1-1/2" 2"
Chilled water supply and return	"A"	Up to 1-1/4" 1-1/2" larger	0.5" 1.0"
Refrigerant Suction Piping	"C"	All	1"

EQUIPMENT	INSULATION TYPE	THICKNESS Inch
Air separators	"A"	1-1/2"
Heat exchangers	"E"	1-1/2"

END OF SECTION

SECTION 22 10 00

PLUMBING PIPING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Pipe and pipe fittings.

B. Valves.

C. Domestic water piping system.

D. Natural gas piping system.

1.2 RELATED WORK

A. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment.

B. Section 22 07 00 - Piping Insulation.

C. Section 22 30 00 - Plumbing Equipment.

D. Section 23 05 53 – Identification for Plumbing Piping and Equipment.

1.3 REFERENCES

A. ANSI/ASME B16.3 - Malleable Iron Threaded Fittings Class 150 NS 300.

B. ANSI/ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV.

C. ANSI/ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.

D. ANSI/ASME Sec. 9 - Welding and Brazing Qualifications.

E. ANSI/ASTM B32 - Solder Metal.

F. ANSI/AWS D1.1 - Structural Welding Code.

G. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.

H. ASTM A74 - Cast Iron Soil Pipe and Fittings.

I. ASTM A120 - Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized), Welded and Seamless, for Ordinary Uses.

J. ASTM A234 - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.

K. ASTM B88 - Seamless Copper Water Tube.

L. ASTM B306 - Copper Drainage Tube (DWV).

M. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.

N. AWS A5.8 - Brazing Filler Metal.

O. AWWA C601 - Standard Methods for the Examination of Water and Waste Water.

P. CISPI 301 - Cast Iron Soil Pipe and Fittings for Hubless Cast Iron Sanitary Systems.

Q. ASTM D2661 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings.

R. ASTM D2751- Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.

S. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.

T. ASTM D2665 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.

U. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.

V. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.

W. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.

X. ASTM B42 - Standard Specification for Seamless Copper Pipe, Standard Sizes.

Y. ANSI/AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.

Z. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.

AA. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

1.4 QUALITY ASSURANCE

A. Valves: Manufacturer's name and pressure rating marked on valve body.

B. Welding Materials and Procedures: Conform to ASME Code and applicable state labor regulations.

C. Welders Certification: In accordance with ANSI/ASME Sec 9.

1.5 SUBMITTALS

A. Submit product data under provisions of Section 01 00 00.

B. Include data on pipe materials, pipe fittings, valves and accessories.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of Section 01 00 00.

B. Store and protect products under provisions of Section 01 00 00.

C. Deliver and store valves in shipping containers with labeling in place.

D. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation. Open ends of pipe are to remain covered and protected through the duration of the project until connected to an adjoining pipe, fitting or device.

1.7 SPARE PARTS AND MAINTENANCE MATERIALS

A. Two packing kits for each type of valve.

PART 2 PRODUCTS

2.1 WATER PIPING, ABOVE GRADE

A. Copper Tubing: ASTM B88, Type L, hard drawn. Fittings: ANSI/ASME B16.23, cast brass, or ANSI/ASME B16.29, wrought copper. Joints: ANSI/ASTM B32, solder, Grade 95TA, no lead; mechanical press joints, per manufacturers recommendations, for pipe 2” and smaller; Brazed for all pipes 2-1/2" and larger.

2.2 NATURAL GAS PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A53 or A120, Schedule 40 black. Fittings: ANSI/ASME B16.3, malleable iron, or ASTM A234, forged steel welding type. Joints: Screwed for pipe two inches (50 mm) and under; ANSI/AWS D1.1, welded, for pipe over two inches (50 mm).

B. Contractor shall coordinate revised gas loads for new equipment with the gas company and make any arrangements for meter and regulator upgrades or adjustments.

C. Flexible Connectors: Not Acceptable.

2.3 FLANGES, UNIONS, AND COUPLINGS

A. Pipe Size 2 Inches (50 mm) and Under: 150 psig (1 034 kPa) malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.

B. Pipe Size Over 2 Inches (50 mm): 150 psig (1 034 kPa) forged steel slip-on flanges for ferrous piping; bronze flanges for copper piping; neoprene gaskets for gas service; 1/16 inch (1.6 mm) thick.

C. Grooved and Shouldered Pipe End Couplings: Malleable iron housing clamps to engage and lock, designed to permit some angular deflection, contraction, and expansion; "C" shape composition sealing gasket; steel bolts, nuts, and washers; galvanized couplings for galvanized pipe.

D. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.4 ACCEPTABLE MANUFACTURERS - BALL VALVES

A. Nibco, Model T-585-70.

B. Stockham, Model S-216.

C. Kitz.

D. Substitutions: Under provisions of Section 01 00 00.

2.5 BALL VALVES

A. Up to 2 Inches (50 mm): Bronze body, full port, stainless steel ball, Teflon seats and stuffing box ring, lever handle solder or threaded ends as required or with union.

B. Over 2 Inches (50 mm): Cast steel body, full port, chrome plated steel ball, Teflon seat and stuffing box seals, lever handle, flanged.

2.6 GAS COCKS

A. Up to 2 Inches (50 mm): Bronze body, bronze tapered plug. non-lubricated, Teflon packing, threaded ends.

B. Over 2 Inches (50 mm): Cast iron body and plug, non-lubricated, Teflon packing, flanged ends.

2.7 BUTTERFLY VALVES

A. Iron body, bronze disc, resilient replaceable seat for service to 180 degrees F (82 degrees C), water or lug ends, and 10 position lever handle.

2.8 SWING CHECK VALVES

A. Up to 2 Inches (50 mm): Bronze 45 degree swing disc, solder or screwed ends as required.

B. Over 2 Inches (50 mm): Iron body, bronze trim, 45 degree swing disc, renewable disc and seat, flanged ends.

2.9 SPRING LOADED CHECK VALVES

A. Iron body, bronze trim, spring loaded, renewable composition disc, screwed, wafer, or flanged ends.

2.10 WATER PRESSURE REDUCING VALVES

A. Up to 2 Inches (50 mm): Bronze body, stainless steel and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded or double union ends.

B. Over 2 Inches (50 mm): Cast iron body, bronze fitted, elastomer diaphragm and seat disc, flanged.

2.11 RELIEF VALVES

A. Bronze body, Teflon seat, steel stem and springs, automatic, direct pressure actuated, capacities ASME certified and labeled.

B. Gas Pressure Regulators:
1. ANSI Z21.18 or ANSI Z21.18a, single stage, steel jacketed, corrosion resistant pressure regulators. Include atmospheric vent, elevation compensator, with threaded ends for 2 inches and smaller and flanged ends for 2 inches and larger. Regulator pressure ratings, inlet and outlet pressures, and flow volume in standard cubic feet per hour of natural gas as indicated.

C. Acceptable Manufacturer's: Equimeter, Fisher, Maxitrol, or equal.

D. Line Gas Pressure Regulators: Inlet pressure rating not less than system pressure.

E. Appliance Gas Pressure Regulators: Inlet pressure rating not less than system pressure, with capacity and pressure setting matching appliance.

F. Gas Pressure Regulator Vents: factory or field installed corrosion resistant screen in opening when not connected to vent piping.

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

A. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

B. Route piping in orderly manner and maintain gradient.

C. Install piping to conserve building space and not interfere with use of space.

D. Group piping whenever practical at common elevations or when indicated.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Provide clearance for installation of insulation and access to valves and fittings.

G. Slope water piping and arrange to drain at low points.

H. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

I. Install valves with stems upright or horizontal, not inverted.

J. Provide one plug cock wrench for every ten plug cocks sized 2 inches (150 mm) and smaller, minimum of one. Provide each plug cock sized 2-1/2 inches (60 mm) and larger with a wrench with set screw.

3.3 APPLICATION

A. Use grooved mechanical couplings and fasteners only in accessible locations.

B. Install unions downstream of valves and at equipment or apparatus connections.

C. Install brass male adapters each side of valves in copper piped system. Sweat-solder adapters to pipe.

D. Install valves as indicated for shut-off and to isolate equipment, or part of systems.

E. Install valves as indicated for throttling, bypass, or manual flow control services.

3.4 DISINFECTION OF DOMESTIC HOT WATER PIPING SYSTEM

A. Prior to starting work, verify system is complete, flushed and clean new and existing system.

B. Disinfect entire existing and new domestic hot water system as outlined below.

C. Ensure PH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).

D. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.

E. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.

F. Maintain disinfectant in system for 24 hours.

G. If final disinfectant residual tests less than 25 mg/L, repeat treatment.

H. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

I. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C601.

END OF SECTION

SECTION 22 11 00

PLUMBING SPECIALTIES

PART 1 GENERAL

1.1 WORK INCLUDED

A. Backflow preventers.

B. Thermostatic mixing valves.

C. Pressure reducing valves.

D. Temperature Actuated Flow Reducers valves.

E. Pressure gages and pressure gage taps.

1.2 RELATED WORK

A. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment.

B. Section 22 10 00 - Plumbing Piping.

C. Section 22 30 00 - Plumbing Equipment.

1.3 REFERENCES

A. ANSI/ASSE 1012 - Backflow Preventers with Immediate Atmospheric Vent.

B. ANSI/ASSE 1062-1997 - Temperature Actuated Flow Reducers valves.

C. ANSI/ASSE 1013 - Backflow Preventers, Reduced Pressure Principle.

D. ANSI/ASSE 1019 - Wall Hydrants, Frost Proof Automatic Draining Anti-Backflow Types.

E. ANSI A112.21.1 - Floor Drains.

F. ANSI A112.21.2 - Roof Drains.

G. ANSI A112.26.1 - Water Hammer Arrestors.

H. PDI WH-201 Water Hammer Arrestors.

I. ASME B40.1 - Gages - Pressure Indicating Dial Type -Elastic Element.

J. FS-GG-G-76 - Gages, Pressure and Vacuum, Dial Indicating (for Air, Water, and Chloro-Flourhydrocarbon Gases).

1.4 QUALITY ASSURANCE

A. Manufacturer: For each product specified, provide components by same manufacturer throughout.

1.5 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 00 00.

B. Include component sizes, rough-in requirements, service sizes, and finishes.

1.6 EXTRA STOCK

A. Provide extra stock in accordance with Section 01 00 00.

B. Provide two packing kits for each type of valve supplied.

C. Provide two tempering valve kits or two complete cartridges for each type installed.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS - BACKFLOW PREVENTERS

A. Wilkins

B. Substitutions: Under provisions of Section 01 00 00.

2.2 BACKFLOW PREVENTERS

A. Reduced Pressure Backflow Preventers: ANSI/ASSE 1013; bronze body with bronze and plastic internal parts and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve which opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two resilient seat type gate valves, strainer, and four test cocks. Wilkins MODEL# 975XL-TCU or equal.

B. Double Check Valve Assemblies: ANSI/ASSE 1012; Bronze body with corrosion resistant internal parts and stainless steel springs; two independently operating check valves with intermediate atmospheric vent

2.3 THERMOSTATIC MIXING VALVES

A. Thermostatic controller with swivel action check stops, removable cartridge with strainer, stainless steel piston and liquid fill thermal motor with bellows element mounted out of water. Volume control shutoff valve, bimetal dial thermometer (3" face, range 20°-240°F), brass pipe, fittings, and unions. Standard rough chrome finish. See drawings for model.

2.4 PRESSURE REDUCING VALVES

A. Bronze body, stainless steel and thermoplastic internal parts, fabric reinforced diaphragm, strainer. See drawings for model.

2.5 TEMPERATURE ACTUATED FLOW REDUCERS

A. ANSI/ASSE 1062; Anti-scald temperature shut-off device designed to instantly reduce flow to less than 0.25 gpm if water temperature exceeds 117 deg F at faucet.

B. Brass body, polished chrome finish, designed to install on faucet spout, 185deg F max temperature, 2.2 gpm max flow rate, 145 PSI max operating pressure. See drawings for model.

2.6 ACCEPTABLE MANUFACTURERS - PRESSURE GAGES

A. Trerice.

B. Marsh.

C. Dwyer.

D. Substitutions: Under provisions of Section 01 00 00.

2.7 PRESSURE GAGES

A. ASME B40.1, 3-1/2 inch (90 mm) diameter drawn steel case, phosphor bronze bourdon tube, rotary brass movement, brass socket, with front recalibration adjustment, black scale on white background, one percent mid-scale accuracy, scale calibrated in psi.

2.8 PRESSURE GAGE TAPS

A. Gage Cock: Tee or lever handle, brass for maximum 150 psig (1034 kPa).

B. Pulsation Damper: Pressure snubber, brass with 1/4 inch (6 mm) connections.

PART 3 EXECUTION

3.1 INSTALLATION AND APPLICATION

A. Install specialties in accordance with manufacturer's instructions to permit intended performance.

B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.

C. Encase exterior cleanouts in concrete flush with grade.

D. Install water hammer arrestors complete with accessible isolation valve and access door where required for service.

E. Provide instruments with scale ranges selected according to service with largest appropriate scale.

F. Install pressure gages in locations where they are easily read from normal operating level.

END OF SECTION

SECTION 23 05 93

TESTING, ADJUSTING, AND BALANCING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Testing, adjustment, and balancing of hydronic systems.

B. Measurement of final operating condition of HVAC systems.

1.2 RELATED SECTIONS

A. Section 23 20 00 – HVAC Pumps

B. Section 23 21 16 – Hydronic Specialties

C. Section 23 30 00 – Heating, Ventilating, and Air Conditioning

1.3 REFERENCES

A. AABC - National Standards for Field Measurement and Instrumentation, Total System Balance.

B. ASHRAE - 1984 Systems Handbook: Chapter 37, Testing, Adjusting and Balancing.

1.4 SUBMITTALS

A. Test and balancing contractor shall be contracted directly by the mechanical contractor. The contractor and his sub-contractors shall provide the necessary assistance and coordination.

B. Submit test reports as a submittal under provisions of Section 01 00 00.

C. Submit test reports under provisions of Section 01 00 00.

D. Prior to commencing work, submit draft reports indicating adjusting, balancing, and equipment data required.

E. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for the Architect/Engineer and for inclusion in operating and maintenance manuals.

F. Provide reports in soft cover, letter size, 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.

G. Include detailed procedures, agenda, sample report forms, and copy of AABC National Project Performance Guaranty prior to commencing system balance.

1.5 REPORT FORMS

A. Submit reports on AABC National Standards for Total System Balance forms.

B. Forms shall include the following information:
1. Title Page:
2. Company name
3. Company address
4. Company telephone number
5. Project name
6. Project location
7. Project Architect
8. Project Engineer
9. Project Contractor
10. Project altitude
11. Instrument List:
12. Instrument
13. Manufacturer
14. Model
15. Serial number
16. Range
17. Calibration date
18. Electric Motors:
19. Manufacturer
20. HP/BHP
21. Phase, voltage, amperage; nameplate, actual, no load.
22. RPM
23. Service factor
24. Starter size, rating, heater elements

C. V-Belt Drive:
1. Identification/location
2. Required driven RPM
3. Driven sheave, diameter and RPM
4. Belt, size and quantity
5. Motor sheave, diameter and RPM
6. Center to center distance, maximum, minimum, and actual

D. Air Moving Equipment:
1. Location.
2. Manufacturer.
3. Model.
4. Air flow, specified and actual.
5. Return air flow, specified and actual.
6. Outside air flow, specified and actual.
7. Total static pressure (total external), specified and actual.
8. Inlet pressure.
9. Discharge pressure.
10. Fan RPM.

E. Exhaust Fan Data:
1. Location.
2. Manufacturer.
3. Model.
4. Air Flow, specified and actual.
5. Total static pressure (total external), specified and actual.

6. Inlet pressure.
7. Discharge pressure.
8. Fan RPM.

F. Return Air/Outside Air Data:
1. Identification/locations.
2. Design air flow.
3. Actual air flow.
4. Design return air flow.
5. Actual return air flow.
6. Design outside air flow.
7. Actual outside air flow.

G. Duct Traverse:
1. System zone/branch.
2. Duct size.
3. Area.
4. Design velocity.
5. Design air flow.
6. Test velocity.
7. Test air flow.
8. Duct static pressure.
9. Air temperature.
10. Air correction factor.

H. Air Distribution Test Sheet:
1. Air terminal number.
2. Room number/location.
3. Terminal type.
4. Terminal size.
5. Area factor.
6. Design velocity.
7. Design air flow.
8. Test (final) velocity.
9. Test (final) air flow.
10. Percent of design air flow.

I. Pump Data:
1. Identification/number
2. Manufacturer
3. Size/model
4. Impeller
5. Service
6. Design flow rate, pressure drop, BHP
7. Actual flow rate, pressure drop, BHP
8. Discharge pressure
9. Suction pressure
10. Total operating head pressure
11. Shut off, discharge and suction pressures
12. Shut off, total head pressure

J. Heating Coil Data:
1. Identification/number
2. Location
3. Service
4. Manufacturer

5. Water flow, design and actual
6. Water pressure drop, design and actual
7. Entering water temperature, design and actual
8. Leaving water temperature, design and actual

1.6 PROJECT RECORD DOCUMENTS

A. Submit record documents under provisions of the General Conditions.

B. Accurately record actual locations of flow measuring stations balancing valves and rough setting.

1.7 QUALITY ASSURANCE

A. Agency shall be company specializing in the adjusting and balancing of systems specified in this Section with minimum five years documented experience. Perform work under supervision of AABC Certified Test and Balance Engineer.

B. Total system balance shall be performed in accordance with AABC National Standards for Field Measurement and Instrumentation, Total System Balance, ASHRAE - 1984 Systems Handbook.

1.8 SEQUENCING AND SCHEDULING

A. Schedule work under the provisions of the General Conditions.

B. Sequence work to commence after completion of systems and schedule completion of work before Substantial Completion of Project.

PART 2 PRODUCTS

2.1 AGENCIES

A. Members of the Associate Air Balance Council.

B. Members of the National Environmental Balancing Bureau in strict conformance with AABC Standards and Procedures as specified.

C. Substitutions: Under provisions of Section 01 00 00.

PART 3 EXECUTION

3.1 EXAMINATION

A. Before commencing work, verify that systems are complete and operable. Ensure the following:

B. Equipment is operable and in a safe and normal condition.

C. Temperature control systems are installed complete and operable.

D. Proper thermal overload protection is in place for electrical equipment.

E. Final filters are clean and in place. If required, install temporary media in addition to final filters.

F. Coil fins have been cleaned and combed.

G. Hydronic systems have been flushed, filled, and vented.

H. Correct pump rotation.

I. Proper strainer baskets are clean and in place.

J. Service and balance valves are open.

K. Report any defects or deficiencies noted during performance of services to the Architect/Engineer.

L. Promptly report abnormal conditions in mechanical systems or conditions which prevent system balance.

M. If, for design reasons, system cannot be properly balanced, report as soon as observed.

N. Beginning of work means acceptance of existing conditions.

3.2 PREPARATION

A. Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to the Architect/Engineer to facilitate spot checks during testing.

B. Coordinate the installation of any additional devices as required.

3.3 INSTALLATION TOLERANCES

A. Adjust air handling systems and air inlets and outlets to plus or minus 5 percent for supply systems and plus or minus 10 percent for return and exhaust systems from figures indicated.

B. Adjust hydronic systems to plus or minus 10 percent of design conditions indicated.

3.4 ADJUSTING

A. Adjust work under provisions of the General Conditions.

B. Recorded data shall represent actually measured or observed condition.

C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

D. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.

E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

F. Check and adjust systems for comfort and seasonal unknowns, or movement of balancing devices approximately 18 months after final acceptance and submit 6 month reports on system performance.

3.5 AIR SYSTEM PROCEDURE

A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.

B. Make air quantity measurements in ducts by pitot tube traverse of entire cross-sectional area of duct.

C. Measure air quantities at air inlets and outlets.

D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

E. Use volume control devices to regulate air quantities only to extent that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.

F. Vary total system air quantities by adjustment of fan speeds. Provide direction to equipment manufacturer and mechanical contractor for drive changes required. Air handling equipment is to be provided with variable pitch sheaves from the factory which will be changed out at the completion of the balancing work to fixed pitch type sheaves. Vary branch air quantities by damper regulation.

G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.

H. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan.

I. Adjust outside air automatic dampers, outside air, return air, and relief dampers for design conditions.

J. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.

K. Measure building static pressure and adjust supply, return, and relief air systems to provide required relationship between each to maintain approximately 0.03 inches positive static pressure near the building entries. Set relief air barometric damper counter balance weights to maintain proper building static pressure.

3.6 WATER SYSTEM PROCEDURE

A. Adjust water systems at air handlers, closed circuit cooler and pumps to provide required or design quantities.

B. Measure flows at heat and cool transfer coils at full flow through coil. Adjust balancing valves at 3-way by-pass valves such that the pressure drop across the balancing valve is 10% higher than the full flow through coil.

C. Procedure for hydronic systems: Systems installed with self-contained pressure independent control valves shall not require hydronic system balancing.

D. Use calibrated fittings and pressure gages to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.

E. Effect adjustment of water distribution systems by means of balancing cocks, valves, and fittings. Do not use service or shut-off valves for balancing unless indexed for balance point.

F. Where available pump capacity is less than total flow requirements or individual system parts, full flow in one part may be simulated by temporary restriction of flow to other parts.

END OF SECTION

SECTION 23 09 23

DIRECT DIGITAL CONTROL SYSTEM

PART 1 GENERAL

1.1 GENERAL

A. The control system shall provide direct digital control (DDC) with Windows-based user interface. The manufacturer and/or his authorized representative shall be responsible for all work under this section of the specifications. Only pre-approved manufacturers and contractors will be allowed. All Control System Equipment is to be Alerton Inc., furnished and installed by the local Alerton representative, who shall be recognized by Alerton as an approved “Associate Dealer”, and shall be as follows:
   1. Alerton Controls, Building Control Services, Inc. (775) 826-8998
   2. No exceptions.

B. Furnish and install a microprocessor-based energy management and control system (EMCS) Install temperature control system Alerton “ENVISION for IBEX” software (most current edition) on existing computers at the WCSD Plant Facilities. User interface software shall be Windows-based (Alerton ENVISION for IBEX integral interface software compatible with Microsoft Windows 2000 professional software. Third party viewing software such as ‘Close-Up’ or ‘PC Anywhere’ will not be acceptable. All software necessary to allow for control system programming and/or editing of graphic displays (most current edition) shall also be provided.

1.2 HARDWARE

A. Remote Access:
   1. The system shall have the capability for remote dial-in via modem.

B. Controllers
   1. Communication speed between global controllers and equipment controllers shall be as required to match existing EMCS system.

1.3 SUBMITTALS AND AS-BUILT DOCUMENTATION

A. The submittals shall include complete written control sequences for each item of equipment requiring control. The sequences shall include all set points, dead-bands, throttling ranges, etc. required for successful operation of the specified equipment. The submitted sequences shall include all necessary sequencing details; whether or not those details are furnished as part of the Mechanical Engineer’s written control sequences (such details are commonly omitted from the Mechanical Engineer’s written control sequences and shall be provided by the Temperature Control Contractor at no additional cost to the Owner). The written control sequences, initial set points, dead-bands, throttling ranges, and the graphic displays shall all be reviewed and confirmed with the Engineer.

B. Seven complete sets of submittals shall be provided.

C. After all temperature control sequences have been finalized and have been approved by the Engineer (and after the HVAC systems commissioning process has been completed) the Contractor shall provide as-built documentation, which shall include written control sequences and programming flow charts. Written control sequences shall be provided both in hard copy and on diskette.

1.4 WARRANTY PERIOD SERVICES

A. The Contractor shall provide full service for the temperature control system for a period of one year after the date of Substantial Completion. Service shall include, but shall not be limited to, calibration of all sensors and other control devices, adjustments to set-points, and modifications to control sequences or programming as required/desired to fine-tune and/or finalize all control sequences.

1.5 TRAINING

A. Upon completion of work, the Temperature Control Contractor shall instruct the Owner's designated personnel on the operation of all control system software features, shall provide a complete explanation of the control sequence for each item of equipment, and shall provide instructions on the operation and maintenance of all control devices. Training time shall be a minimum of four total hours.

1.6 EMCS SOFTWARE AND PROGRAMMING REQUIREMENTS

A. Provide a security/password system with two passwords of up to four characters each. The security/password system shall allow access based on four levels of security as follows:

Level 1 Viewing only
Level 2 room temperature adjustments
Level 3 Adjustment of all set-points
Level 4 Full access to all set-points and programming

B. No set-points related to the equipment control sequences or programming shall be accessible by anyone other than the Temperature Control Contractor during the commissioning.

C. The Temperature Control Contractor shall program the eleven School District Holidays into the EMCS software for the three years following the date of the installation. The eleven School District Holidays each year are as follows:

January 1	New Year's Day
Third Monday in January	Martin Luther King, Jr's Birthday
Third Monday in February	Washington's Birthday
Last Monday in May	Memorial Day
July 4	Independence Day
First Monday in September	Labor Day
Last Friday in October	Nevada Day
November 11	Veterans' Day
Fourth Thursday in November	Thanksgiving Day
Friday following Thanksgiving	Family Day
December 25	Christmas Day

D. When January 1, July 4, November 11, or December 25 falls on a Saturday, the preceding Friday is the observed holiday. If these days fall on Sunday, the following Monday is the observed holiday.

E. Equipment Schedules - A separate occupied/unoccupied schedule shall be provided for each heat pump, air handling unit, fan coil, or other individual air handling systems. A graphic display shall be provided to allow for access to each of the schedules from the display screen.

1.7 GRAPHIC DISPLAYS

A. All temperature setpoints and all other setpoints identified as adjustable shall be adjustable from the appropriate graphic displays. Setpoints given in the control sequences are for initial set-up and trial of system operations. Control system shop drawings shall utilize the same (or similar) written sequences with all setpoints, throttling ranges, and differentials identified. As-built drawings shall include this same information with actual setpoints following start-up, testing, and adjustment.

B. Monitored points and alarms for each system shall be shown on the displays with full color graphics and real-time data as listed below. Where indicated, graphic displays shall be dynamic (animated). All graphic displays shall be submitted to the Engineer for review and approval prior to commencing any programming for the temperature controls. Graphic displays shall be developed for a screen resolution of 800 x 600 unless otherwise agreed upon in writing.

C. All temperatures shall be displayed with zero decimal places.

D. All valve and damper positions shall be displayed as per cent open and shall be displayed with zero decimal places.

E. All setpoints which are identified as “adjustable” in the written control sequences shall be adjustable via the associated graphic displays (including dead band between heating and cooling room set point).

F. All occupied mode and unoccupied mode room temperature set points shall have an adjustable dead band (adjustable from the associated graphic display).

G. All displays specified to be dynamic shall depict motion (as minimum dynamic displays shall include rotating fan wheels and rotating pump impellers).

H. All set points adjustable from the graphic displays shall be programmed with the dead band on one side of the set point (not split evenly across the set point) unless otherwise specified.

I. Zone Temperature Summary - Provide a summary screen which indicates the current room temperature set-point and current room temperature for each zone. The screen shall have a global room temperature set-point capability that will override the current/individual set-point for all zones. Each zone shall be capable of being set to either the global set-point or to a separate individual set-point. By selecting any of the zones on the screen there shall be the capability to transfer to the selected zone’s equipment control screen and back. The zone summary screen shall also include additional information such as discharge air temperature, valve position, fan status, etc. (these requirements shall be coordinated with the Owner prior to developing graphic displays).

J. Floor Plans - Provide a display showing the building floor plan(s), all space temperature sensors, and the equipment associated with each zone (with the zone borders depicted on the floor plan). The necessary AutoCAD drawing file will be furnished to the Temperature Control Contractor by the Mechanical Engineer upon request.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Approved Manufacturers subject to compliance with requirements: (See Part 3 - Execution, General, 01.).
1. Alerton Inc IBEX for Windows system to match existing school district systems, no exceptions.

2.2 MATERIALS AND EQUIPMENT

A. General:
1. Provide a distributed processing system complete with Direct Digital Control (DDC) software. The system shall be a fully integrated package of controls and instrumentation to control all heat pumps, valves, fans, pumps, etc. directly without intervening conventional controls. Control system components shall be manufacturers' standard as indicated through published product information, designed and constructed as recommended by the manufacturer.

B. System Architecture:
1. The system shall be a complete stand-alone energy management and control system consisting of a state-of-the-art menu-driven technology, dynamic graphics, and simple user-friendly operation completely programmable and highly modular in construction.
2. The basic elements shall be built up of standard components kept in inventory by the EMCS supplier. Components shall not require customizing other than setting jumpers and switches, adding firmware modules or software programming to perform required functions.
3. The system shall be a true distributed processing system with all software control functions to be performed by the remote field panels. Control software shall be in nonvolatile memory. System shall provide "on-line" programming by both "local" and "remote" computer terminals allowing any and all data to be changed, added, deleted, etc. from either terminal. Remote field computers shall communicate with the central processor and the terminal unit control panels.

C. Global Controller:
1. Each global controller (GC) shall network to other GC's in a multi-drop manner over a twisted pair of wires. Each unit supports four trunks of 32 terminal unit controllers each. Programs shall be downloaded into RAM or "burned" into nonvolatile EPROM. Clock shall be real time quartz crystal with battery backup automatically rechargeable and providing a minimum of 30 day backup. Communication with CPU shall be at 38K baud. Global controller shall include modem with communication rate compatible with existing system. The existing site global controller and modem can be used, if applicable. Existing Global Controller to be utilized.

D. DDC Unit Controllers:
1. Each controller shall be microprocessor based and communicate with its respective GC and also be stand-alone maintaining its own control strategy in the event of communication failure with the GC or remote computer terminals. Each controller shall contain RAM and ROM and be capable of controlling heat pumps, boilers, cooling tower, pumps, etc. as specified in control sequence. Inputs shall be either analog or digital. Momentary type switch closure allows an input to be both analog and digital. Outputs shall be analog or digital with LED's provided to indicate status. Each controller is linked serially by a pair of wires and

communicates to its respective GC. Controllers default to last programmed temperature or to fixed operator selectable control whenever communication to GC is lost. Default mode shall be field changeable. All operating modes (except default) and set points shall be modified at the computer terminals. Each unit shall allow complete calibration of all temperatures.

2. System shall be capable of accomplishing any controller-to-controller command in a maximum of 1 second.

E. OA Temperature Sensor:
1. Sensor shall be pre-calibrated thermistor type resistance element complete with terminal housing and sensor shield.
2. Outdoor temperature sensor shall sense dry bulb temperature.

F. Immersion Temperature Sensors:
1. Sensor shall be similar to OA sensor, except a stainless steel well shall be included providing sensor with fluid contract and capability for sensor removal without draining system.

G. Duct Temperature Sensor:
1. Sensor shall be similar to OA sensor where used in ducts not exceeding 36 inches.

H. Room Temperature Sensor (TRM):
1. Sensor shall contain temperature sensing element. Controller shall allow occupant to raise and lower set point and to activate unit for override use within limits programmed by building operator. Controller shall allow service technician access following a password entry to view and change any data relative to service, maintenance and operation of unit control.

I. Relays:
1. Relays shall be plug-in type complete with sockets for panel mounting. Poles shall be as required and contact rated for intended use.

J. Damper Actuator (M):
1. Actuators shall be permanently lubricated type with gear train sealed in dust-tight enclosure. Actuators shall conform to Industry Standards operating with 4-20ma or 0-10VDC signal for pulse-width modulation and shall be non-proprietary.

PART 3 EXECUTION

3.1 INSTALLATION

A. General:
1. By “Alerton Technologies” by: Building Control Services Inc., no exceptions.

B. Interlock and Control Wiring:
1. Installation shall be in a neat and workman like manner with all runs parallel to or perpendicular to building lines.
2. All wiring within walls shall be in EMT. All wiring on existing walls or ceilings may be run with wire mold raceway.
3. In accessible ceiling areas above finished ceiling exposed “plenum rated cabling” shall be permissible, where code permits. Cabling shall be supported above finished ceiling as high as permissible in a neat and workmanship like manner. Cabling shall not lie on top of finished ceiling.

4. “Plenum Rated” cabling shall be identified as follows:
   a. ”EMS Communication” cabling shall be “mint green” in color and identified on cabling jacket every 3 feet - minimum.
   b. “EMS Sensor” cabling shall be “blue” in color and identified on cabling jacket every 3 feet-minimum.
5. Installation shall be in accordance with manufacturer’s written instructions and with recognized industry standards.
6. All wiring shall be in conformance with all local and national code requirements.
7. Verify all room thermostat locations in the field prior to installation.

C. Control Panels:
1. Mount controllers, relays, switches, etc., for equipment located in equipment rooms in enclosed control panels with hinged locking doors. Control devices for equipment located in exposed areas subject to outside weather conditions shall be mounted inside weatherproof enclosures. Location of each panel shall be convenient for adjustment service. Provide plastic nameplates beneath each panel-mounted control device describing function of device.
2. Pre-wire electrical devices within the panel to numbered terminal strips with interdevice wiring within panel completed prior to installation. Terminal numbers to match terminals shown on control diagram.
3. Coordinate with Division 15 and 16, including power distribution and mechanical and electrical equipment, as necessary.
4. Adjust and validate all thermostats, sensors, controllers, relays, etc., provided and complete system validation forms attached in conjunction with Washoe County School District Personnel.

END OF SECTION

SECTION 23 20 00

HVAC PUMPS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Base mounted pumps.

B. In-line mounted pumps.

1.2 RELATED SECTIONS

A. Section 22 05 00 – Basic Mechanical Requirements

B. Section 23 09 23 – Direct Digital Controls System

1.3 REFERENCES

A. Hydraulic Institute

B. ANSI - American National Standards Institute

C. NEMA - National Electrical Manufacturer’s Associations

D. UL - Underwriters Laboratories

E. ETL - Electrical Testing Laboratories

F. CSA - Canadian Standards Association

G. NEC - National Electric Code

H. BOCA – Building Officials and Code Administrators International, Inc.

I. UBC – Uniform Building Code

1.4 SUBMITTALS AND OPERATION MANUALS

A. Submit under provisions of Section 01 00 00.

B. Submittals shall include the following as a minimum:

C. Pump material and construction drawing.

D. Pump curve showing design point.

E. Submit operation and maintenance data under provisions of Section 01 00 00.

F. Submittals and Operation Manuals shall be assembled in a neat and orderly manner. Submittals and Operation Manuals shall be bound in booklet form and shall include a front and back cover and a title page with appropriate job name, location and equipment title.

G. If the submittals are rejected for the same reasons more than once, upon the third submission the packaged pumping manufacturer shall be responsible for all costs incurred by the owner and his consultants for this and any further reviews necessary.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Bell & Gossett.

B. Patterson.

C. Paco.

D. Peerless.

E. Armstrong.

F. Substitutions: None

2.2 GENERAL CONSTRUCTION REQUIREMENTS

A. Balance: Rotating parts, statically and dynamically.

B. Construction: To permit servicing without breaking piping or motor connection.

C. Pump and Pump Motors: Motors shall be of the premium efficiency type and shall operate at 1750 RPM unless specified otherwise. Pumps shall not overload the motor sizes at any point on the pump curves.

D. Pump Connections: Flanged.

2.3 BASE MOUNTED PUMPS

A. Type: Horizontal shaft, single stage, flexible coupled, end suction, for 125 psig maximum working pressure.

B. Casing: Cast iron, with suction and discharge gauge ports, renewable bronze casing wear rings, seal flush connection, drain plug, flanged section and discharge.

C. Impeller: Bronze, fully enclosed, keyed to shaft.

D. Bearings: Grease lubricated roller or ball bearings.

E. Shaft: Alloy steel with copper, bronze, or stainless steel shaft sleeve.

F. Seal: Carbon rotating against a stationary ceramic seat, 225 degrees F maximum continuous operating temperature.

G. Drive: Flexible coupling with coupling guard.

H. Baseplate: Cast iron or fabricated steel with integral drain rim.

2.4 IN-LINE PUMPS

A. Type: Horizontal or vertical shaft, single stage, split coupled, with resiliently mounted motor for in-line mounting, external or internal seal flush, for 125 psig maximum working pressure.

B. Casing: Cast iron, with flanged section and discharge and steel or cast floor mounting supports.

C. Impeller: Cast bronze, keyed to shaft.

D. Bearings: Ball bearings.

E. Shaft: Alloy or stainless steel with copper or bronze sleeve, integral thrust collar.

F. Seal: Carbon rotating against a stationary ceramic seat, 225 degrees F maximum continuous operating temperature.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install pumps in accordance with manufacturer's instructions.

B. Provide access space around pumps for service. Provide no less that minimum as recommended by manufacturer.

C. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

D. Decrease adjacent pipe size to pump connection size with reducers, provide at inlet and triple duty valves at discharge. Support piping adjacent to pump such that no weight is carried on pump casings. Provide supports under elbows on pump suction and discharge line sizes 4 inches and over.

E. Provide line sized shut-off and suction diffusers with strainer on pump suction, and combination pump discharge valve at pump discharge (angled at in-line pumps and straight pattern at base mounted pumps). Discharge valve shall be sized for optimum flow control with minimum pressure drop. Suction diffusers shall also be complete with start-up strainers.

F. Provide air cock and drain connection on pump casings.

G. Provide drains for bases and seals, piped to, and discharging into floor drains or floor sinks.

H. Lubricate pumps before start-up.

I. Install each base mounted pump on concrete spring isolated inertia base, with anchor bolts, set and level, and grout in place.Qualified millwright shall check, align, and certify base mounted pumps prior to start-up.

END OF SECTION

SECTION 23 21 13

HYDRONIC PIPING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Pipe and pipe fittings.

B. Valves.

C. Heating water piping system.

1.2 RELATED WORK

A. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment.

B. Section 22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment.

C. Section 22 05 53 – Identification for Plumbing Piping and Equipment.

D. Section 22 07 00 - Plumbing Insulation.

E. Section 23 21 16 - Hydronic Specialties.

1.3 REFERENCES

A. ANSI/ASME - Boiler and Pressure Vessel Code.

B. ANSI/ASME Sec 9 - Welding and Brazing Qualifications.

C. ANSI/ASME B16.3 - Malleable Iron Threaded Fittings Class 150 and 300.

D. ANSI/ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV.

E. ANSI/ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.

F. ANSI/ASME B31.9 - Building Services Piping.

G. ANSI/AWS A5.8 - Brazing Filler Metal.

H. ANSI/AWS D1.1 - Structural Welding Code.

I. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.

J. ASTM A120 - Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized), Welded and Seamless, for Ordinary Uses.

K. ASTM A234 - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.

L. ASTM B32 - Solder Metal.

M. ASTM B88 - Seamless Copper Water Tube.

1.4 REGULATORY REQUIREMENTS

A. Conform to ANSI/ASME B31.9.

1.5 QUALITY ASSURANCE

A. Valves: Manufacturer's name and pressure rating marked on valve body.

B. Welding Materials and Procedures: Conform to ANSI/ASME SEC 9 and applicable state labor regulations.

C. Welders Certification: In accordance with ANSI/ASME SEC 9.

1.6 SUBMITTALS

A. Submit product data under provisions of Section 01 00 00.

B. Include data on pipe materials, pipe fittings, valves, and accessories.

C. Include welder’s certification of compliance with ANSI/ASME SEC 9.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of Section 01 00 00.

B. Store and protect products under provisions of Section 01 00 00.

C. Deliver and store valves in shipping containers with labeling in place.

PART 2 PRODUCTS

2.1 HEATING AND CHILLED WATER PIPING, ABOVE GROUND

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black.
   1. Fittings: ASME B16.3, malleable iron or ASTM A234/A234M, forged steel welding type.
   2. Joints: Threaded for pipe 2 inches and smaller; welded for pipe 2-1/2 inches and larger.

B. Copper Tubing: ASTM B88, Type K, hard drawn.
   1. Fittings: ASME B16.18, cast brass, or ASME B16.22, solder wrought copper.
   2. Joints:
      a. Braze, AWS A5.8 BCuP silver/phosphorus/copper alloy with melting range 1190 to 1480 degrees F.
      b. Mechanical press joints, per manufacturers recommendations, for pipe 2” and smaller.

2.2 CHILLED WATER PIPING, BELOW GROUND

A. High Density Polyethylene (HDPE) Pipe and Fittings:
   1. Manufacturers - Pipe:

a. Chevron-Philips Performance Pipe.
b. Centennial Pipe, Inc.
c. Lamson Vylon Geothermal Pipe.

2. Manufacturers - Fittings:
   a. Chevron-Philips Performance Pipe Fittings.
   b. Central Fittings.
   c. Upanor.
3. Transition Fittings:
   a. Intermountain Pipe and Supply.
   b. Arvic.
4. Piping to be constructed of high density polyethylene (HDPE) 3408 to meet ASTM D 3350 cell classification No. PE 345434C or PE 355434C with UV stabilizer. Pipe sizes two-inch through ten-inch shall conform to the specifications of ASTM D 3035 and be DR-15.5. Pipe sizes 12 inch and above shall conform to the specifications of ASTM D 3035 and be DR-17. Unless otherwise approved, the identifying line shall have one of the following labels; NSF Standard 14 Geothermal, NSF Approved, Potable Water, NGWA Accepted, or AWWA Accepted.
5. Molded pipe fittings shall be manufactured to the dimensional specifications and requirements of ASTM D 2683 (for socket fusion fittings), ASTM D 3261 (for butt/saddle fusion fittings), or ASTM F 1055 for electro-fusion fittings. All fittings below ground level shall be thermal fusion.

B. PVC Pipe: AWWA C900 Class 150 polyvinyl chloride (PVC) material.
   1. Fittings: AWWA C110, ductile iron, standard thickness.
   2. Joints: ASTM D3139 compression gasket ring.

2.3 EQUIPMENT DRAINS AND OVERFLOWS

A. Copper Tubing: ASTM B88, Type L, hard drawn.
   1. Fittings: ANSI/ASME B16.23 cast brass, or ANSI/ASME B16.29 solder wrought copper.
   2. Joints: ANSI/AWS A5.8, BCuP silver braze. or ANSI/ASTM B32, solder, Grade 95TA. No lead allowed in solder.

B. Boiler condensate: PVC schedule 40.

2.4 FLANGES AND UNIONS

A. 150 psig bronze unions for copper pipe, soldered joints.

2.5 BUTTERFLY VALVES

A. Acceptable Manufacturers:
   1. Kitz Valve.
   2. NIBCO, Inc.
   3. Substitutions: Section 01 30 00 - Product Requirements.

B. General – Where butterfly valves are used as shutoff for termination or equipment removal or repair use ductile iron lug type valves, bi-directional, dead end service-rated to full working pressure of the valve. Wafer type valve can be used for all other applications. Provide gear operators on butterfly valves 8” and larger. Provide extended necks to provide for 2-1/4” insulation at all valves located on piping to be insulated.

C. For All Hydronic Systems:
1. 2 inches and Larger Wafer Type: MSS SP 67, 200 PSIG.
a. Ductile iron body, lever-operated, 10 position throttling handle, aluminum bronze disc, type 410 stainless steel stem, EPDM seat. Kitz 5122B, Nibco WD2000.
2. 2 inches and Larger Lug Type: MSS SP 67, 200 PSIG.
a. Ductile iron body, drilled and tapped lug body, lever operated, 10 position throttling handle, aluminum bronze disc, type 410 stainless steel stem, EPDM seat. Kitz 6122E, Nibco LD2000.

2.6 GATE VALVES

A. Acceptable Manufacturers:
1. Crane Model 428UB or Model 465.
2. Nibco Model T134 or Model F617-0.
3. Red/White #298/#421.
4. Substitutions under provisions of Section 01 00 00.

B. Description:
1. Up to 2 Inches (50 mm): Bronze body, union bonnet, bronze trim, non-rising stem, handwheel, inside screw, double wedge or disc, threaded ends.
2. Over 2 Inches (50 mm): Iron body, bronze trim, bolted bonnet, rising stem, handwheel, OS&Y, double wedge, flanged or grooved ends.

2.7 BALL VALVES

A. Acceptable Manufacturers:
1. Crane.
2. Nibco Model #T-585-70.
3. Red/White Model #5044.
4. Substitutions under provisions of Section 01 00 00.

B. Description:
1. Up to 2 Inches (50 mm): Bronze two piece body, stainless steel ball, Teflon seats and stuffing box ring, lever handle, threaded ends with union.
2. Over 2 Inches (50 mm): Cast steel body, chrome plated steel ball, Teflon seat and stuffing box seals, lever handle, or gear drive handwheel for sizes 10 inches (250 mm) and over, flanged.

2.8 SWING CHECK VALVES

A. Acceptable Manufacturers:
1. Crane Model #76E.
2. Nibco Model #T-473-B.
3. Red/White #360.
4. Substitutions under provisions of Section 01 00 00.

B. Description:
1. Up to 2 inches (50 mm): bronze 45 degree swing disc, screwed ends.
2. Over 2 inches (50 mm): iron body, bronze trim, 45 degree swing disc, renewable disc and seat, flanged ends.

2.9 SPRING LOADED CHECK VALVES

A. Acceptable Manufacturers:
1. Nibco Model #T-480.
2. Watts Model #600.
3. Substitutions under provisions of Section 01 00 00.

B. Description:
1. Brass body, stainless steel spring, renewable composition disc, screwed, wafer or flanged ends.

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

A. Route piping in orderly manner, plumb and parallel to building structure, and maintain gradient.

B. Install piping to conserve building space, and not interfere with use of space and other work.

C. Group piping whenever practical at common elevations.

D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

E. Provide clearance for installation of insulation, and access to valves and fittings.

F. Provide access where valves and fittings are not exposed.

G. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.

H. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

I. Install valves with stems upright or horizontal, not inverted.

3.3 APPLICATION

A. Install unions downstream of valves and at equipment or apparatus connections.

B. Install brass male adapters each side of valves in copper piped system.

C. Install ball valves or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.

D. Provide 3/4 inch (20 mm) ball drain valves at main shut-off valves, low points of piping, bases of vertical risers, and at equipment. Provide 3/4 inch hose connection with cap and retainer chain.

E. Install dielectric unions at connections between dissimilar metals, no direct iron to copper connections are allowed.

END OF SECTION

SECTION 23 21 16

HYDRONIC SPECIALTIES

PART 1 GENERAL

1.1 WORK INCLUDED

A. Expansion tanks.

B. Glycol Feed Tank (Hydronic System Feeder)

C. Air vents.

D. Strainers.

E. Relief valves.

F. Flow control valves.

G. Pressure gages and pressure gage taps.

H. Thermometers and thermometer wells.

1.2 RELATED WORK

A. Section 22 10 00 - Plumbing Piping.

B. Section 22 30 00 - Plumbing Equipment.

C. Section 23 21 13 - Hydronic Piping.

D. Section 23 25 00 - Chemical (Water) Treatment.

1.3 REFERENCES

A. ANSI/ASME - Boilers and Pressure Vessels Code.

B. ASME B40.1 - Gages - Pressure Indicating Dial Type -Elastic Element.

C. ASTM E1 - Specification for ASTM Thermometers.

D. ASTM E77 - Verification and Calibration of Liquid-in-Glass Thermometers.

E. FS-GG-G-76 - Gages, Pressure and Vacuum, Dial Indicating (for Air, Water, and Chloro-Flourhydrocarbon Gases).

1.4 REGULATORY REQUIREMENTS

A. Conform to ANSI/ASME Boilers and Pressure Vessels Code Section 8D for manufacture of tanks.

1.5 QUALITY ASSURANCE

A. Manufacturer: For each product specified, provide components by same manufacturer throughout.

1.6 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 00 00.

B. Submit shop drawings and product data for manufactured products and assemblies required for this project.

C. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description, model and dimensions.

D. Submit inspection certificates for pressure vessels from authority having jurisdiction.

E. Include list for pressure and temperature gages which indicates use, operating range, total range and location for manufactured components.

F. Submit manufacturer's installation instructions under provisions of Section 01 00 00.

1.7 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provisions of Section 01 00 00.

B. Include installation instruction, assembly views, lubrication instructions, and replacement parts list.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of Section 01 00 00.

B. Store and protect products under provisions of Section 01 00 00.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS - DIAPHRAGM-TYPE EXPANSION TANKS

A. Elbi.

B. Amtrol.

C. ITT Bell & Gossett.

D. Wessels.

E. Substitutions: Under provisions of Section 01 00 00.

2.2 DIAPHRAGM-TYPE EXPANSION TANKS

A. Construction: Welded steel, tested and stamped in accordance with Section 8D of ANSI/ASME Code; supplied with National Board Form U-1, rated for working pressure of 125 psig, with replaceable flexible butyl diaphragm sealed into tank, and steel legs or saddles.

B. Designed for potable water systems where scheduled.

C. Accessories: Pressure gage and air-charging fitting, tank drain; precharge to 12 psig.

D. Size: As scheduled on drawings.

2.3 ACCEPTABLE MANUFACTURERS – HYDRONIC SYSTEM FEEDER

A. Axion

B. ITT Bell & Gossett.

C. Wessels

D. Substitutions: Under provisions of Section 01 00 00.

2.4 HYDRONIC SYSTEM FEEDER

A. Hydronic system feeder shall be self contained unit. System shall include 383 litre (100 US gallon) storage/mixing tank with cover; pump suction hose with inlet strainer; pressure pump with thermal cutout; integral pressure switch; integral check valve; cord and plug; pre-charged accumulator tank with EPDM diaphragm; manual diverter valve for purging air and agitating contents of storage tank; pressure regulating valve adjustable (35 – 380 KPa; 5 – 55 psig) complete with pressure gauge; built-in check valve; union connection; 12 mm (½") x 900 mm (36") long flexible connection hose with check valve; low level pump cut-out. Pressure pump shall be capable of running dry without damage. Power supply 115/60/1 0.9 A. Unit shall be completely pre-assembled and certified by a recognized testing agency to CSA standard C22.2 No 68.

B. Provide an inhibited propylene glycol with corrosion inhibitors. Fluid shall be Dow Chemical Dowfrost HD or approved equal provided in 30% concentration. Note total system volume is estimated to be approximately 1,440 gal.

2.5 ACCEPTABLE MANUFACTURERS - AIR VENTS

A. Armstrong.

B. Dresser Inc/Wheatley.

C. ITT Bell & Gossett.

D. Taco.

E. Substitutions: Under provisions of Section 01 00 00.

2.6 AIR VENTS

A. Manual Type: As detailed on plans with short vertical sections of 2 inch (50 mm) diameter pipe to form air chamber, with 1/8 inch (3 mm) brass needle valve at top of chamber.

B. Float Type: Brass or semi-steel body, copper float, stainless steel valve and valve seat; suitable for system operating temperature and pressure; with isolating valve.

2.7 ACCEPTABLE MANUFACTURERS - STRAINERS

A. AW Cash.

B. Watts.

C. Armstrong.

D. O. C. Keckley.

E. Substitutions: Under provisions of Section 01 00 00.

2.8 STRAINERS

A. Screwed brass body for 175 psig (1 200 kPa) working pressure, Y pattern with 1/32 inch stainless steel perforated screen.

2.9 ACCEPTABLE MANUFACTURERS - FLOW INDICATORS

A. Bell & Gossett.

B. Armstrong.

C. Paco.

D. Substitutions: Under provisions of Section 01 00 00.

2.10 ACCEPTABLE MANUFACTURERS - FLOW CONTROLS

A. Bell & Gossett.

B. Flow Design, Inc.

C. Griswold Valve & Controls.

D. Nibco.

E. Substitutions: Under provisions of Section 01 00 00.

2.11 AUTOMATIC FLOW CONTROLS

A. Design
1. The GPM for the automatic flow control valves shall be factory set and shall automatically limit the rate of flow to within 5% of the specified amount.
2. For 1/2" -2", the flow cartridge shall be removable from the Y-body housing without the use of special tools to provide access for regulatory change out, inspection and cleaning without breaking the main piping. (Access shall be similar to that provided for removal of a Y-strainer screen).
3. True operating ranges of 2 - 32 psid are required. The design flow should be achieved at the minimum psi differential. A 50% safety factor applied to the lower operating range is not acceptable.
4. Each valve shall have two P/T ports.
5. All automatic flow control devices shall be supplied by a single source and certified flow tests, witnessed by a professional engineer, shall be available.
6. Five year product warranty and free first year cartridge exchange.

B. Construction
1. The internal wear surfaces of the valve cartridge must be electroless nickel or stainless steel.
2. The internal flow cartridge body shall have machined threads so the spring free height may be compensated for without the use of fixed shims. A crimped sheet metal design is not acceptable.
3. The internal flow cartridge shall be permanently marked with the GPM and spring range.
4. For 1/2" through 2" pipe sizes: An assembly shall consist of a brass Y-type body, integral brass body ball valve and ‘O’ ring type union: Flow Design Model AC or equal.
5. All valves shall be factory leak tested at 100 psi air under water.

C. Minimum ratings
1. 1/2" through 2" pipe size: 400 PSIG at 250°F.
2. 2 1/2" through 14" pipe size: 600 PSIG at 250°F.

D. Flow Verification
1. Where indicated on the plans, the differential pressure across the Automatic Flow Control Valve shall be measured for flow verification and to determine the amount of system over heading or under pumping.
2. The flow shall be verified by measuring the differential pressure across the coil served or the wide-open temperature control valve and calculating the flow using coil or valve Cv.

E. Installation
1. Install automatic flow control valves on the lines of coils as indicated on the plans.
2. The standard ports and handles shall clear 1" thick insulation. Handle and port extensions are required for over 1" thick insulation.

2.12 ACCEPTABLE MANUFACTURERS - RELIEF VALVES

A. Bell & Gossett.

B. Cash Acme.

C. Watts Water Technologies, Inc.

D. Wilkins Operation, a Zurn Company.

E. Substitutions: Under provisions of Section 01 00 00.

2.13 RELIEF VALVES

A. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, capacities ASME certified and labeled.

2.14 ACCEPTABLE MANUFACTURERS - PRESSURE AND TEMPERATURE GAGES

A. Alnor Instrument Company.

B. Bristol Babcock.

C. Dwyer, Cali-Tech.

D. Marsh Bellofram, Precision Control Division.

E. Miljoco.

F. Palmer.

G. Taylor.

H. Weiss.

I. Weksler.

J. Substitutions: Under provisions of Section 01 00 00.

2.15 PRESSURE GAGES

A. ASME B40.1, 3-1/2 inch (90 mm) diameter drawn steel case, phosphor bronze bourdon tube, rotary brass movement, brass socket, with front recalibration adjustment, black scale on white background, one percent mid-scale accuracy, scale calibrated in psi.

2.16 PRESSURE GAGE TAPS

A. Gage Cock: Tee or lever handle, brass for maximum 150 psig (1034 kPa).

B. Pulsation Damper: Pressure snubber, brass with 1/4 inch (6 mm) connections.

2.17 DIAL THERMOMETERS

A. ASTM E1, 3-1/2 inch (90 mm) diameter dial in stainless steel case, bimetallic helix actuated with silicone fluid damping, white with black markings and black pointer hermetically sealed glass lens, stainless steel stem, one percent of full scale accuracy, calibrated in degrees F.

2.18 THERMOMETER SUPPORTS

A. Socket: Brass separable sockets for thermometer stems with or without extensions as required, and with cap and chain.

B. Flange: 3 inch (75 mm) outside diameter reversible flange, designed to fasten to sheet metal air ducts, with brass perforated stem.

2.19 TEST PLUGS

A. Test Plug: 1/4 inch (6 mm) brass fitting and cap for receiving 1/8 inch (3 mm) outside diameter pressure or temperature probe with neoprene core for temperatures up to 200 degrees F (93 degrees C) or Nordel core for temperatures up to 350 degrees F (176 degrees C).

B. Test Kit: Carrying case, internally padded and fitted containing two 2-1/2 inch (60 mm) diameter pressure gages, two gage adapters with 1/8 inch (3 mm) probes, two 1 inch (25 mm) 1-1/2 inch (38 mm) dial thermometers.

PART 3 EXECUTION

3.1 INSTALLATION AND APPLICATION

A. Install specialties in accordance with manufacturer's instructions to permit intended performance.

B. Support expansion tanks inside building from floor in accordance with manufacturer's instructions.

C. Where large air quantities can accumulate, provide enlarged air collection standpipes.

D. Provide manual air vents at all system high points and as indicated.

E. For automatic air vents in ceiling spaces or other concealed locations, provide vent tubing to nearest drain.

F. Provide air separator on suction side of system circulation pump.

G. Provide valved drain and hose connection on strainer blow down connection.

H. Provide relief valves on pressure tanks, low pressure side of reducing valves, heat exchangers, and expansion tanks.

I. Select system relief valve capacity so that it is greater than make-up pressure reducing valve capacity. Select equipment relief valve capacity to exceed rating of connected equipment.

J. Pipe relief valve outlet to nearest floor drain.

K. Where one line vents several relief valves, make cross sectional area equal to sum of individual vent areas.

L. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inch (60 mm) for installation of thermometer sockets.

M. Install thermometer sockets adjacent to controls system thermostat, transmitter, or sensor sockets. Refer to Section 23 09 23.

N. Provide instruments with scale ranges selected according to service with largest appropriate scale.

O. Install gages and thermometers in locations where they are easily read from normal operating level.

P. Locate test plugs adjacent to thermometers and thermometer sockets adjacent to pressure gages and pressure gauge taps adjacent to control device sockets as defined where indicated.

END OF SECTION

SECTION 23 25 00

CHEMICAL (WATER) TREATMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cleaning of boiler piping systems.

B. Chemical feeder equipment.

C. Field analysis for water treatment.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

A. Section 23 21 13 - Hydronic Piping: Bypass (pot) feeder.

1.3 OWNER FURNISHED PRODUCTS

A. Water treatment chemicals

1.4 RELATED SECTIONS

A. Section 22 05 00 – Basic Mechanical Requirements.

B. Section 23 09 23 – Direct Digital Controls System.

C. Section 23 21 13 – Hydronic Piping.

1.5 REFERENCES

A. NFPA 70 - National Electrical Code.

1.6 SUBMITTALS

A. Submit shop drawings under provisions of Section 01 00 00.

B. Product Data: Provide chemical cleaning materials, chemicals, and equipment.

C. Manufacturer’s Field Reports: Submit under provisions of Section 01 00 00.

D. Manufacturer’s Field Reports: Provide analysis of system water after cleaning and provide recommendations for owner provided water treatment.

E. Submit certificate of compliance from authority having jurisdiction indicating approval of chemicals and their proposed disposal. Supply MSDS for each chemical.

1.7 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01 00 00 and 22 05 00.

B. Prepare and submit “Attachment M” - Mechanical Field Analysis Report, form follows this Section.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum five (5) years experience. Company shall have local representatives with water analysis laboratories and full time service personnel.

B. Installer: Company specializing in performing work of this section with minimum five (5) years experience and approved by manufacturer.

C. Approved Water Treatment Providers:
1. Chem Aqua, Inc.
2. ChemTreat, Inc.
3. Ondeo Nalco.
4. Pacific Water Consultant.
5. San Joaquin.

1.9 REGULATORY REQUIREMENTS

A. Conform to applicable code for addition of non-potable chemicals to building mechanical systems and to public sewage systems.

1.10 INITIAL SERVICE

A. Provide field service and laboratory analysis as needed to diagnose and prevent potentially harmful conditions in boiler systems. Provide recommendations to owner for appropriate corrections if needed to restore water quality and system integrity and therefore maximizing system efficiency.

B. Provide detail findings in writing on proper practices, chemical treating recommendations, and corrective actions if needed. Submit report on water analysis and submit two (2) copies of Attachment M - Field Analysis Report to the Engineer and Owner’s Maintenance Department.

C. Coordinate with Owner’s Maintenance Department at least ten (10) days before chemical treatment is needed before boiler start-up.

PART 2 PRODUCTS

2.1 MATERIALS

A. Systems Cleaner:
1. A pre-operational cleaner and passivator shall be used. These products will provide for the removal of mill-scale, all grease, weld spatter and other construction debris. Products should be based on alkaline phosphates or silicates and should include suitable detergents, surfactants, and passivating agents.
2. A micro-biological cleaner may be needed in addition to a pre-operational cleaner as circumstances dictate.

2.2 BYPASS (POT) FEEDER

A. Five (5) gallon capacity with quick opening cap for working pressure of 175 psig.

PART 3 EXECUTION

3.1 PREPARATION

A. Systems shall be operational, filled, started, and vented prior to cleaning. Use water meter to record capacity in each system.

B. NOTE: Systems shall NOT be in operation more than 24 hours prior to cleaning. This includes all plate and frame heat exchangers, and boilers.

C. Place terminal control valves in closed position during cleaning.

3.2 CLEANING SEQUENCE

A. Notify Owner's Maintenance Department at least ten (10) days prior to systems cleaning to ensure adequate monitoring of cleaning sequence.

B. Concentration:
1. As recommended by manufacturer.
2. One pound per 100 gallons of water contained in the system for hot systems and one pound per 50 gallons of water contained in the cold systems.

C. Boiler Loop Water System:
1. Circulate for 48 hours, and then drain systems as quickly as possible.
2. Refill with clean water, circulate for 24 hours, and then drain.
3. Refill with clean water and repeat until system cleaner is removed.

D. Use neutralizer on recommendation of system cleaner supplier and approval of Architect/Engineer.

E. Open all valves that open to atmosphere and flush open systems with clean water for one (1) hour minimum. Drain complete and refill.

F. Remove, clean and replace strainer and spray heads.

G. Inspect, remove sludge and flush low points with clean water after cleaning process is completed.

3.3 INSTALLATION

A. Installation of all chemical treatment equipment will be performed by the mechanical contractor under the supervision of the water chemical treatment company and/or Owner's corrosion consultant, and in accordance with manufacturer's instructions.

B. Provide one bypass feeder on each system. Install isolating and drain valves and necessary piping. Install around balancing valve downstream of circulating pumps unless indicated otherwise.

END OF SECTION

"ATTACHMENT M"
WASHOE COUNTY SCHOOL DISTRICT
FIELD ANALYSIS REPORT FOR WATER TREATMENT

School:	Date:	Technician (print):

Chemical Analysis required:

TEST	City Water (Make-up)	Cooling Tower	Closed Loop(Hot)		Closed Loop (Chilled)	
Conductivity mhos						
pH						
Chlorides ppm						
Calcium Hardness ppm						
Total Hardness ppm						
M-Alkalinity ppm						
Silica ppm						
Copper ppm						
Iron ppm						
Inhibitor (1) (Closed Loops) – (Nitrite) ppm				>800< 1000		>600 <800
Inhibitor (2) (Closed Loops) (Mo) ppm						
Inhibitor (1) (Tower) (4 - 8 ppm PO)						
Inhibitor (2) (Tower) (1.2 – 5 ppm Mo)						
Cycles of Concentration (by Conductivity)						
Cycles of Concentration(by Chlorides)						
Cycles of Concentration(by Calcium)						
Cycles of Concentration (by Silica)						
Biocide (oxidizing-Bromine) (1 – 3 ppm)						

Chemical Added to system:		**Check one**	_	**Quantity**	**Added to:**
Cooling Tower Biocide (Oxidizing)	Name:	Gallons Ounces Pounds			
Cooling Tower Biocide (Non-Oxidizing)	Name:	Gallons Ounces Pounds			
Cooling Tower Inhibitor	Name:	Gallons Ounces Pounds			
Closed Loop (Hot)Inhibitor	Name:	Gallons Ounces Pounds			
Closed Loop (Chilled)Inhibitor	Name:	Gallons Ounces Pounds			

Other Observations:

Signed: _____ **Company:** _____ **Date:** _____

SECTION 23 30 00

HEATING, VENTILATING AND AIR CONDITIONING

PART 1 GENERAL

1.1 RELATED SECTIONS

A. Section 22 05 00 – Basic Mechanical Requirements.

B. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment.

C. Section 22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment.

D. Section 22 05 53 –Identification for Plumbing Piping and Equipment.

E. Section 23 21 13 – Hydronic Piping.

F. Section 23 81 46 – Unitary Heat Pump Air Conditioning Equipment.

G. Section 23 84 00 – Air Handling Units with Coils.

1.2 WORK INCLUDED

A. This Contractor shall furnish all labor, materials, tools and equipment to complete the heating, air conditioning and ventilation work as shown on the drawings and as hereinafter described ready for service to the entire satisfaction of the Engineer.

B. The work includes, in general, the following
1. Modular air handlers, exhaust fans, condensing units, and air distribution ductwork and outlets.
2. Exhaust systems.
3. All insulation for ductwork for complete thermal and acoustic purposes.
4. Start-up service including written and oral instructions to Owner's representative.
5. Refrigerant piping.
6. All miscellaneous items in conjunction with those listed above, specified herein, shown on drawings and as required for a complete operating system.

1.3 WORK EXCLUDED

A. None.

PART 2 PRODUCTS

2.1 DUCTWORK - GENERAL

A. Sheet metal ductwork shall be made with commercial grade of galvanized steel.

B. Broken places in coating made in forming shall be completely soldered over. Weights of sheets shall not be less than the following:

Size of Duct	U.S. Gauge Galvanized Iron
0" to 12"	26
13" to 30"	24
31" to 54"	22
55" and larger	20

C. Ducts 24" and under in greatest dimension shall have "S" and drive seams at centers not to exceed 48". Ducts over 24" in greatest dimension shall have government clip of pocket lock seams at 48" centers. Ducts shall be in accordance with the latest S.M.A.C.N.A. standards.

D. Elbows shall be made with a center line radius of 1.5 times the duct width parallel to the radius where possible. Where the radius must be less than this, provide rectangular elbows with turning vanes.

E. Ducts shall be provided with hangers to prevent any bending or sagging. Hangers shall be heavy galvanized 1-1/8" x No. 14 gauge strap iron loops which shall be fastened to overhead construction in a secure manner. Hangers shall extend up each side of the ducts with spacing not to exceed 5'-0".

F. Connections made to equipment shall be flexible, as specified under "Flexible Connections".

G. Slopes in sides of transition pieces shall be approximately one to five. No abrupt changes or offsets of any kind in duct system will be permitted.

H. Sheet metal ductwork shall be installed to clear all obstructions, preserve headroom, and keep openings and passageways clear.

I. Ducts lined with insulation shall be increased in size to allow for insulation thickness so that dimensions shown on drawings will be net inside dimensions.

J. All details of duct and plenum constructions, hangers, supports, duct joints, etc., shall be furnished and installed as set forth in HVAC Duct Construction Standards, metal and flexible, latest edition, as published by S.M.A.C.N.A.

K. Exhaust ductwork shall be galvanized steel in accordance with S.M.A.C.N.A. "Low Velocity Duct Construction Standards" for 2" w.c. pressure.

L. All duct joints to be sealed with S.M.A.C.N.A. approved tape and Polymer Adhesive “Airseal #33" water based duct sealant/mastic or Design Polymerics DP 10/10 adhesive/sealant.

M. Round to rectangular duct connections shall be made as shown on drawings or with conical shaped preformed spin-in fittings. Fitting shall be equipped with balancing damper.

N. All exposed rectangular supply, return, and outside air duct shall be galvanized steel ductwork.

O. All interior surfaces of ceiling diffusers, registers, grilles, etc., including ductwork visible from inside the building, shall be etched, primed and painted flat black.

2.2 INSULATION OF SHEET METAL DUCTWORK

A. All rectangular sheet metal supply and return air ductwork shall be internally lined with Johns-Manville "Permacote Linacoustic" fiberglass duct liner with factory applied edge coating 1" thick, unless noted otherwise. Adjust duct sizes to accommodate liner and to give net dimensions shown on drawings. Cement lining in place with 100% coverage of Foster's #85-20 non-flammable adhesive and fastened to sheet metal with weld pins and washers as directed in manufacturer's installation instructions. Point up all exposed edges of insulation inside ductwork with non-flammable adhesive.

B. All concealed, round sheet metal supply, outside air and return ducts, unless indicated otherwise, shall be wrapped with 2" thick, 1# density, foil faced fiberglass duct insulation lapped 4" and stapled in place.

2.3 DAMPERS

A. Volume dampers shall be furnished and installed by the Mechanical Contractor in each branch duct, at all locations indicated on drawings, and at all locations herein specified. Dampers shall have square-through shafts with a minimum of two (2) load bearing points. Residential type manual volume dampers or diffuser mounted dampers are not acceptable.

B. Dampers installed in accessible locations shall have commercial grade locking and indicating quadrants, Duro-Dyne, Ventlok, Young, or approved equal with stand-off bracket for installation of duct insulation.

C. Dampers installed in ductwork in furred ceiling spaces shall have damper rods extended to below ceiling and terminated with concealed damper regulator with removable cover, Young regulator, Duro-Dyne, Ventlok, or approved equal.

D. Dampers not shown as splitter or butterfly dampers shall be of multi-louver type arranged for opposed blade operation, Ruskin CD-36 or approved equal, unless shown otherwise. Damper blades shall not exceed 6" in width and shall be of galvanized steel, USS 16 gauge minimum, mounted in a steel channel frame, USS 16 gauge minimum.

2.4 EQUIPMENT

A. All equipment shall be as scheduled on drawings. See respective specification sections for equipment not included herein.

B. At contractor’s option equipment of equal quality, construction and capacities can be submitted for approval (see Section 01 00 00).

C. The contractor is responsible for all required mechanical, architectural, structural and electrical changes necessary to accommodate the substituted equipment.

2.5 FLEXIBLE CONNECTIONS

A. Flexible connections shall be furnished and installed at inlet and outlet duct connection of each piece of equipment that is not complete with internal isolation. Flexible duct connections shall be preassembled flexible connectors constructed of neoprene coated glass fabric, applied in accordance with manufacturers recommendations. Width of flexible connections shall be sufficient to allow minimum 1-1/2" of free space between two metal collars to be connected. Install sheet metal band completely around duct or fan outlet, at end of flexible connection. Fasten with metal screws through band and neoprene coated glass fabric.

B. Space screws approximately 3" apart. Neoprene coated glass fabric shall be Duro-Dyne, Ventfabrics, or approved equal, similar to Ventfabrics, Ventglas.

2.6 REGISTERS, GRILLES, DIFFUSERS AND APPURTENANCES

A. Registers, grilles, diffusers, and appurtenances shall be as shown on drawings. Units of equal performance and construction by major manufacturers will be considered for approval.

B. Inlet and outlet faces in finished ceilings shall be off white, inside shall be black. Paint visible ductwork behind grilles or registers flat black.

C. Manual volume dampers shall be secured to a square steel shaft fully penetrating duct with minimum two load bearing points, install commercial quality indicating, locking quadrants and end bearing. Residential type manual volume dampers or diffuser mounted dampers are not acceptable.

D. Registers, grilles and diffusers shall be selected and approved by manufacturer to operate without objectionable noise or draft.

2.7 REFRIGERANT PIPING

A. Refrigerant piping shall be copper tubing ASTM B280, Type ACR hard drawn with ASME B16.22 wrought copper fittings. All joints shall be silver brazed, AWS A5.8 BCuP silver/phosphorus/ copper alloy with melting range 1190 to 1480 degrees F (640 to 805 degrees C).

B. All branch piping shall top tap the supply and return main piping.

2.8 VIBRATION ISOLATION

A. All power drive equipment shall be quiet in operation and be free of vibration. Construct and brace metal partitions, ducts, sheet metal, housing, etc., so that there will be no vibration or rattling when the system is in operation. Design and construct connections to the equipment so that noise and vibration will not reach the conditioned area through conduit, ducts, or piping. Isolators shall be supplied by a single manufacturer to the Contractor. The isolator supplier's submittal shall include the complete design of the supplementary bases, a tabulation of the design on the isolators including o.d., free, operating and solid heights of springs. Isolation equipment shall be Kinetics Peabody Noise Control, Consolidated Kinetics, Mason or Vibrex.

PART 3 EXECUTION

3.1 REFRIGERANT PIPING

A. Adhere to general routing and methods of distribution shown, furnishing all labor and materials and appurtenances as required for satisfactory operation for the various systems.

B. Install in most direct, neat, and workmanlike manner employing only mechanics skilled in each trade. Run exposed lines parallel with or perpendicular to building lines. Group lines for easy service.

C. Arrange piping to return oil to compressor. Provide traps and loops in piping and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.

D. Provide clearance for installation of insulation and access to valves and fittings.

E. Provide access to concealed valves and fittings.

F. Flood piping system with nitrogen when brazing.

G. Follow ASHRAE 15 procedures for charging and purging of systems and for disposal of refrigerant.

H. Provide replaceable cartridge filter-driers with isolation valves and valved bypass.

I. Locate expansion valve sensing bulb immediately downstream of evaporator on suction line.

J. Provide external equalizer piping on expansion valves with refrigerant distributor connected to evaporator.

K. Install flexible connectors at right angles to axial movement of compressor, parallel to crankshaft.

L. Fully charge completed system with refrigerant after testing.

M. Provide electrical connection to solenoid valves.

3.2 BALANCE OF SYSTEMS:

A. See Section 23 05 93.

3.3 OPERATIONAL TEST AND ADJUSTMENTS:

A. In addition to Section 22 05 00, Contractor shall be responsible for the additional items noted below:

B. Coordination of all items associated with the heating, ventilating, and air conditioning systems is the responsibility of the Mechanical Contractor, including all wiring in connection with mechanical equipment and all temperature control work. It shall be this Contractor's responsibility to determine that his systems, equipment and apparatus are properly wired and controlled and completely ready for satisfactory operation and test.

C. Engineer will not be responsible for coordination of such items and irrespective of other trades and contractors involved, Mechanical Contractor shall be held completely responsible for proper operation of his systems and equipment. If need be, he shall completely check electrical and temperature control work associated therewith to absolutely determine that it meets his requirements and arrange for any necessary corrections.

D. Testing and start-up of mechanical equipment and systems will be required upon project completion. All personnel and instruments required shall be furnished by the Contractor. Mechanical Contractors shall cooperate with each other and the Owner's representatives in conducting tests.

E. Any final adjustments or balancing found necessary to be made to the equipment or systems so that they will be placed in acceptable operating conditions and meet the specified performance shall be made during any or all of the tests specified herein.

F. Any equipment, systems, or work found deficient during any tests shall be replaced or revised as required, to the entire satisfaction of the Architect.

G. Before starting or operating any equipment of systems, a thorough check shall be made to determine that all systems have been flushed and cleaned as required and that all equipment has been properly installed, lubricated and serviced.

H. During test period, final adjustments and balancing shall be made to equipment, systems, controls, and circuits so that all are placed in first-class operating condition.

I. Upon completion of the Mechanical Work, or at such a time prior to completion as may be determined by the Engineer, all mechanical equipment and systems shall be operated and tested for a period of at least five consecutive 8 hour days to demonstrate the satisfactory overall operation of the building or project as a completed unit. The tests shall include the operation of the heating and air conditioning equipment and systems for a period of not less than two 8-hour days of not less than 90% of full capacity.

END OF SECTION

SECTION 23 64 11

PACKAGE WATER CHILLERS - RECIPROCATING, SCROLL, AND SCREW

PART 1 GENERAL

1.1 SECTION INCLUDES

A. This Section includes design, performance criteria, refrigerants, controls, and installation requirements for air cooled package water chillers - reciprocating, scroll, and screw.

1.2 RELATED SECTIONS

A. Section 22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment.

1.3 REFERENCES

A. AHRI 550/590-2003

B. ANSI/ASHRAE 15

C. ASME Section VIII

D. ETL Listed

E. ASHRAE Standard 90.1

1.4 PERFORMANCE REQUIREMENTS

A. Unit shall consist of one or more tandem hermetic scroll compressors per circuit, brazed plate evaporator, air cooled condenser, free cooling section and operating controls with equipment protection.

B. Performance: Refer to schedule for specific operating conditions

C. Site Altitude: Chiller shall be suitable for altitude of 4500 ft without affecting performance indicated.

D. Acoustics: Sound pressure for the unit shall not exceed 64 dBa at 30 feet and shall represent the highest levels recorded at all load points. Sound data shall be measured according to ARI 575-87.

E. Chiller shall be equipped for single-point power connection.

F. Performance Tolerance: Comply with the following in lieu of ARI 550/590:
   1. Allowable Capacity Tolerance: Standard AHRI tolerance applies.
   2. Allowable IPLV/NPLV Performance Tolerance: Standard AHRI tolerance applies.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include refrigerant, rated capacities, operating characteristics, sound data, furnished specialties, and accessories.
   1. Dimensioned plan and elevation drawings, including required service clearances and location of all field piping and electrical connections.

2. Performance at ARI standard conditions and at conditions indicated.
3. Electrical and water quality requirements during operation, standby and shutdown.
4. Control system diagram showing points for field interface and connection to external BMS systems. Drawings shall show field and factory wiring.
5. Installation and Operating Manuals 6. Minimum and Maximum evaporator flow rate.
6. Refrigerant capacity of chiller.
7. Fluid capacity of evaporator, free cooling.
8. Characteristics of safety relief valves.
9. Detail equipment assemblies and indicate dimensions, weights, load distribution, required clearances, and methods of field assembly, components, and location and size of each field connection.
10. Wiring Diagrams: For power, signal, and control wiring.

1.6 OPERATION AND MAINTENANCE DATA

A. Include start-up instructions, maintenance data, parts lists, controls, and accessories.

B. Submit maintenance data.

1.7 QUALITY ASSURANCE

A. Warranty: Includes coverage for complete assembly including materials and workmanship for a period of 12 months from start-up or 18 months from shipping. And an additional five years warranty for parts on the compressor only.

PART 2 PRODUCTS

2.1 EQUIPMENT MANUFACTURER

A. Dunham Bush.
1. York
2. Owner-approved equal.

2.2 MANUFACTURED UNITS

A. Description: Factory-assembled and tested chiller complete with compressor, compressor motor, compressor chiller controller, evaporator, condenser, controls, interconnecting unit piping and wiring, and indicated accessories.

B. Chiller Frame and Housing - All components shall be mounted onto a unitized construction, having baked on powder coating finish welded steel frame suitable for outdoor installation. Compressors and controls shall be contained within a sheet metal enclosure to protect critical components from the weather.

2.3 DESIGN REQUIREMENTS

A. Unit shall consist of one or more tandem hermetic scroll compressors with at least one digital scroll compressor per circuit, refrigerant flooded evaporator, air cooled condenser, free cooling section and operating controls with equipment protection B. Performance: Refer to schedule for specific operating conditions.

B. Acoustics: Sound pressure for the unit shall not exceed 64 dB(A) 9 meter (30 feet) and shall represent the highest levels recorded at all load points. Sound data shall be measured according to AHRI Standard 575-87.

C. Chiller shall be equipped for single-point power connection, unless otherwise specified.

D. Each compressor shall be electrically and mechanically isolated so that if a compressor fails or needs service, it can be serviced or removed from the chiller without disabling the other compressors or the chiller, and allowing the chiller to remain in operation with the other compressor(s) on-line.

E. The chiller shall be provided with at least the number of compressors shown on the schedule.

F. HCFC Refrigerant Written Guarantee - If manufacturer offers a chiller using any HCFC refrigerant, manufacturer shall provide, in writing, documentation signed by an officer of the company assuring refrigerant availability and price schedule for a 20-year period.

G. Positive Pressure Operation - The entire chiller system, including all pressure vessels, shall remain above atmospheric pressure during all operating conditions and during shut down to ensure that non-condensables and moisture do not contaminate the refrigerant and chiller system. If any portion of the chiller system is below atmospheric pressure during either operation or shut down, the manufacturer shall include, at no charge:
1. A 20-year purge maintenance agreement that provides parts, labor, and all preventative maintenance required by the manufacturer’s operating and maintenance instructions.
2. A complete purge system capable of removing non-condensables and moisture during operation and shut-down.
3. The manufacturer shall include a factory-installed and wired system that will enable service personnel to readily elevate the vessel pressure during shutdown to facilitate leak testing.

2.4 COMPRESSOR-DRIVE ASSEMBLY

A. Compressor:
1. The compressors will be Tandem or Trio Scroll with suction and discharge manifolded and oil and gas equalization provided. All compressors will be 3500 RPM direct drive with an integral two-pole hermetic squirrel cage motor. A dustproof terminal box, located in an accessible location on the compressor, will contain all connection terminals.
2. The compressors will be fitted with a crankcase heater, and oil sight glass.

2.5 REFRIGERATION

A. Refrigerant:
1. Type: R410A.

B. Compatibility: Chiller parts exposed to refrigerants shall be fully compatible with refrigerants, and pressure components shall be rated for refrigerant pressures. B. Refrigerant Circuit:
1. Two, Four or six compressors will be used with a direct expansion evaporator.
2. Insulate evaporator and other cold surfaces as required to prevent condensation at ambient conditions of 90°F wet bulb with no air movement.
3. C. Each refrigerant circuit will include expansion valve, sight glass, moisture indicator, solenoid valve, replaceable core filter-drier, liquid line shut off valves, and charging.

C. Pressure Relief Device:
   1. Comply with requirements in ASHRAE 15 and in applicable portions of ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
   2. ASME-rated, spring-loaded, pressure relief valve; single- or multiple-reseating type. Pressure relief valve(s) shall be provided for each heat exchanger. Condenser shall have dual valves with one being redundant and configured to allow either valve to be replaced without loss of refrigerant.

2.6 EVAPORATOR

A. Description: The evaporator shall be brazed plate. Heat exchangers shall be designed, constructed, tested and stamped in accordance with the requirements of ASME Code, Section VIII Code Case 1518-5. The water sides shall be designed for a minimum of 1000 kPa (145 psig) or as specified. The water connections for the evaporator and condenser shall be either grooved suitable for Victaulic couplings or flanged as detailed herein. Vents and drains shall be provided. The refrigerant side of each vessel shall bear the ASME Code stamp, code case section VIII. Vessels shall pass a test pressure of 1.1 times the working pressure but be not less than 689 kPa (100 psig).

B. To ensure effective liquid droplet removal, prevent liquid damage to compressors, and equalize suction pressure across evaporators with multiple compressors, a perforated plate designed for vapor disengagement shall be installed inside the evaporator above the tubing.

C. The evaporator shall be provided with spring loaded reseating-type pressure relief valves according to ASHRAE-15. Rupture disks are not acceptable.

D. Designed to prevent liquid refrigerant carryover from entering compressor.

E. Provide evaporator with sight glass or other form of positive visual verification of liquid refrigerant level.

F. Minimum evaporator exiting water temperature shall be 3.3°C (38°F), unless otherwise specified and accepted by the chiller manufacturer.

G. Factory-mounted and wired water flow switches shall be provided on the evaporator in order to prevent unit operation with no water flowing through the heat exchangers.

H. Provide 1-1/2” closed cell insulation onto evaporator shell, water boxes and connections.

2.7 AIR COOLED CONDENSER

A. To provide normal and energy efficient operation in the widest range of ambient temperatures air-cooled chillers shall have dedicated and discrete refrigeration circuiting for each compressor. Air cooled packaged chillers and controls shall be capable of reliable operation between 32°F and 110° ambient air temperature.

B. Air-cooled condensers shall utilize aluminum fins with refrigeration duty copper tubes mechanically expanded into fin collars. Condenser coils shall be arranged in a Wconfiguration to reduce equipment footprint.

C. Condenser coils and fans shall be arranged such that one fan operates with one coil section so that the failure of a fan will not affect the CFM across any coil beyond that fan.

D. Condenser shall be equipped with a liquid line and mechanical float to ensure liquid subcooling necessary for effective cooling of the compressor.

E. Condenser shall be equipped with packaged fixed or variable speed fans capable of delivering specified CFM of air according to ARI standard operating conditions.

F. Fans shall be EC type with built-in variable-speed motors. To increase coil efficiency and reduce air recirculation, fans shall be rated for 16,000 nominal CFM at full speed. Fans and assemblies shall be designed to operate at reduced noise levels. Fans shall be balanced dynamically and statically and utilize direct variable-speed drives. Fan blades shall be manufactured with corrosion resistant materials. Fan assemblies shall utilize full airfoil cross section design, providing vertical air discharge from extended orifices. The guards shall be constructed of heavy duty 14 gauge steel and painted. OPTION – Fans shall be equipped with factory installed fan diffusers to reduce fan noise and increase power efficiency.

G. Refrigerant Economizer – Each dedicated refrigerant circuit shall include refrigerant components dedicated fan arrays. In order to assure reliable and efficient operation in higher ambient temperatures, each refrigeration circuit shall include a refrigerant to refrigerant brazed plate heat exchanger to provide cooled refrigerant gas injection between compressor impeller stages.

2.8 FREE-COOLING SYSTEM

A. System design – The chiller shall be designed with air cooled chilled water fluid coolers in parallel with the refrigerant condensers within each refrigerant circuits. The fluid cooler coil and the condenser coil shall be configured such that air flow passes the fluid cooler coil first then the condenser coil. The chiller system shall include a 3-way motorized modulating valve to control chilled water flow through fluid cooling coils or through the refrigerant evaporator. The system shall be designed to provide pre-cooling, mixed mode cooling and full compressor-less free-cooling utilizing threshold set-points for ambient and chilled water set points.

B. Free-Cooling Controls – The chiller controls shall have four modes of operation.
1. Full Mechanical Mode - All compressors, refrigeration circuits and fans are set to provide mechanical cooling.
2. Mechanical Mode - The fans in the associated fan bank provide condenser cooling only.
3. Pre-Cool Mode - allows the fan banks to operate independently such that some of the fan banks provide free cooling and others provide mechanical cooling.
4. Free-Cool Mode - Ambient air provides enough cooling capacity without the need to engage the compressors. In this mode, the fans and 3-way valve modulate to control the chilled water temperature at set-point.

C. Sequence Description
1. If the ambient temperature is higher than the mechanical threshold setting, then the motorized 3-way valve shall cause full fluid flow to bypass and cooling capacity shall be provided by compressors.
2. If the ambient temperature is less than the free-cooling threshold the 3-way valve shall operate to satisfy cooling demand and setpoint. Cooling capacity is provided by both fluid coolers and mechanical cooling where fluid coolers are allowed to provide as much capacity as they are able to provide with mechanical cooling providing the balance. Refrigerant and fan circuits shall be staged according to either mechanical refrigeration condensing or pre/free cooling duty.
3. Setpoint Control - The controller shall recalculate the saturated discharge setpoint continuously based on ambient temperature and optionally compressor capacity.

2.9 INSULATION

A. Closed-cell, flexible elastomeric thermal insulation complying with ASTM C 534, Type I for tubular materials and Type II for sheet materials.
   1. Thickness: ¾”

B. Adhesive: As recommended by insulation manufacturer.

C. Factory-applied insulation over all cold surfaces of chiller capable of forming condensation. Components shall include, but not be limited to, evaporator shell and end tube sheets, evaporator water boxes including nozzles, refrigerant suction pipe from evaporator to compressor, cold surfaces of compressor, refrigerant-cooled motor, and auxiliary piping.
   1. Apply adhesive to 100 percent of insulation contact surface.
   2. Before insulating steel surfaces, prepare surfaces for paint, and prime and paint as indicated for other painted components. Do not insulate unpainted steel surfaces.
   3. Seal seams and joints to provide a vapor barrier.
   4. After adhesive has fully cured, paint exposed surfaces of insulation to match other painted parts.

2.10 LIQUID LEVEL CONTROLS

A. Control of refrigerant flow shall utilize a single or multiple 6,000 step electronic expansion valve (EXV), to operate within the full range from full load to the lowest loading capacity for the chiller. Fixed orifice metering devices or float controls using hot gas bypass are not acceptable. The EXV liquid line shall have a sight glass with moisture indicator and temperature sensor connected to the control system for validation of sub-cooling.

B. Condenser shall be equipped with a mechanical float for electronic actuation of the EXV. Design shall provide a positive liquid seal to ensure effective cooling of the compressor.

C. Condenser shall be provided with a capacitive type liquid level transducer with a resolution of not less than 1024 discrete steps. The transducer shall be wired to the chiller control system. Condenser liquid level measurement shall be used in electronic expansion valve control algorithm, with a minimum level set point to ensure adequate liquid seal is maintained in the condenser, in order to provide compressor motor cooling during operation. Condenser liquid level shall be clearly displayed on a graphical operator interface in a minimum of two screens. Chillers without direct level measurement are prohibited due to possible over heating damage that may occur in compressors when liquid seal is lost. The liquid level transducer shall operate with a 0-10 volt output.

2.11 ELECTRICAL

A. Factory installed and wired, and functionally tested at factory before shipment.

B. Single-point, field-power connection to fused disconnect. Minimum withstand rating shall be as required by electrical power distribution system, but not less than 65,000 VA.

C. Terminal blocks with numbered wiring to match wiring diagram. Spare wiring terminal block for connection to external controls or equipment.

2.12 CHILLER CONTROLS

A. Control Center will be fully enclosed in a steel, baked powder coated, control panel with hinged access doors. Dual compartments, separating safety and operating controls from the power controls, are to be provided. Controls will include:
1. Compressor protection, solid state, thermal sensing overloads, with manual reset.
2. High refrigerant discharge pressure, manual reset.
3. Separate power terminal blocks for main power and 115V AC chiller heater power.
4. Compressor starter including current sensing overload protection.
5. Software function development on PC Windows® based with factory installed
6. sensors including integral anti-recycle protection (Optional for sizes 10- 70 TR).
7. Complete labeling of all control components.
8. Numbered terminal strips and labeled components for easier wire tracing.
9. Condenser pressure sensing fan cycling control for start-up and operation down to 30 °F [-1.1 °C].

B. Control Center's individual Full Function Vision 2020i controller will provide compressor staging based on leaving fluid temperature. The Vision 2020i controller is design to work with a user friendly back-lit 132 by 64 pixels DBG1 Semi-Graphic Display panel connected with controller through telephone cable. The terminal allows carrying out all program operations. The user terminal allows displaying the unit working conditions, compressor run times, alarm history and modifying the parameters. The display also has an automatically self-test of the controller on system start-up. Multiple messages will be displayed by automatically scrolling from each message to the next. All of these messages are spelled out in English language on the display terminal. There are 15 dedicated buttons enable user to access information, base on the security level of the password. The Vision 2020i will have an extended operating range of -77°F [-25°C] to +140°F [+60°C]. (It will be proactive in control and accommodate system anomalies such as high condenser pressure and high entering fluid temperature by controlling loading and refrigerant flow to keep the machine on line but at reduced capacity until the condition is corrected.)

C. C. Vision 2020i individual chiller controller will provide as a minimum the following features and options.
1. Vision 2020i- Unit Control will provide the following capabilities:
   a. Staging of compressors and hot gas bypass to achieve precise control of leaving water.
   b. Switching of fans on the air cooled condenser to control head pressure.
   c. 7 day time clock with schedules for machine control.
   d. Automatic pump-down before compressor stops and automatic pump out before liquid line opens on start-up.
   e. Proactive control of compressor cycling and /or hot gas bypass to help prevent high pressure or low pressure trips
   f. Proactive control providing safeties for high pressure, low pressure and freeze protection, to eliminate nuisance trips.
   g. Proactive compressor staging to eliminate overloading during start-up to reduce compressor cycling.
   h. Continuous evaluation of sensors.
2. Vision 2020i - Unit Protection will provide the following:
   a. Low pressure cutout with Proactive safety.
   b. High pressure cutout with Proactive safety.
   c. Automatic re-start from power outage with event posting.
   d. Battery backed-up real time clock and memory with over 10 years life and automatic recharge of lithium ion battery that requires no service.

e. Safeties for temporary shutdown as well as lockout protection that requires manual reset.
f. Freeze protection on leaving chilled fluid temperature.
g. Anti-recycle timing.
h. Sensor error.
i. Pump down -pump out failure.

3. Vision 2020i -Readouts will provide the following:
a. Sensor inputs.
b. Leaving liquid temperature.
c. Entering liquid temperature.
d. Compressor ampere draw.
e. Suction pressure each circuit.
f. Discharge pressure each refrigerant circuit.
g. Unit control contacts.
h. Water flow switch.
i. Chilled liquid reset.
j. Digital Outputs.
k. Compressor control status.
l. Liquid line solenoid control status.
m. Condenser fan control status.
n. Alarm control status.

4. Vision 2020i - Setpoints will provide the following with proper authorization):
a. High discharge pressure.
b. Low suction pressure.
c. Freeze protect temperature.
d. Leaving liquid temperature.
e. Control zone settings.
f. Fan condenser control.
g. Pump down -pump out settings.
h. Low suction circuit limiting.
i. High discharge circuit limiting.
j. Anti-recycle delay setting.

5. Vision 2020i - Alarm History will provide the following:
a. The 100 most recent alarms can be identified.
b. Low suction pressure of all circuits.
c. High discharge pressure of all circuits
d. Freeze protection cutout.
e. Pump down -pump out failure of all circuits.
f. External shutdown of each compressor.
g. Communication failure.
h. Power failure.

6. Vision 2020i remote monitoring capabilities - will include a complete full function communication system through the following means:
a. NetVisor Program The controller can be provided with optional RS232 or RS485 communications card and NETVISOR software for full graphical remote monitoring and controlled from a PC terminal and optional phone modem or Internet connection through local PC server. RS 485 communication can support up to 20 Vision 2020i station.
b. DB Link Program The controller also can be provided with optional RS485 communications card and DB Link program for simple local monitoring and controlled from a local PC terminal through RS485 to USB converter.

c. Building Management System (BMS) Interface With various optional add-on cards, Vision 2020i controller can be interfaced directly and easily to the BMS with the standard communication protocols using MODBUS, LONWORKS, BACNET MSTP or over IP.
d. Communication distance
   1) RS232 via a (3) wire shielded cable up to 100 feet [30 meters].
   2) RS485 via a (2) wire shielded cable up to 4000 feet [1200 meters].
   3) Ethernet cable up to 330 feet [100 meters].

2.13 ACCESSORIES

A. Flow Switches:
   1. Chiller manufacturer shall furnish a switch for each evaporator and verify fieldmounting location before installation.
   2. Pressure Differential Switches:
      a. Construction: Wetted parts of body and trim constructed of Type 316 stainless steel.
      b. Performance: Switch shall withstand, without damage, the full-pressure rating of the heat exchanger applied to either port and exhibit zero setpoint shift due to variation in working pressure.
      c. Set Point: Screw type, field adjustable.
      d. Electrical Connections: Internally mounted screw-type terminal blocks.
      e. Switch Action: Double-pole, double-throw switch with one pole field wired to the chiller control panel and the other pole field wired to the DDC system for HVAC.

2.14 SOURCE QUALITY CONTROL

A. Perform functional tests of chillers before shipping.

B. Optional – Perform four-point standard factory performance test on all scheduled chillers, before shipping, according to ARI 506/110.
   1. Test the following conditions:
      a. Design conditions indicated.
      b. Reduction in capacity from design to minimum load in steps of 100%, 75%, 50% and 25% with condenser fluid at design conditions.
   2. Allow owners representative access to place where chillers are being tested. Notify 10 days in advance of testing.
   3. Prepare test report indicating test procedures, instrumentation, test conditions, and results. Submit copy of results within one week of test date.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine chillers before installation. Reject chillers that are damaged.

B. Examine roughing-in for equipment support, anchor-bolt sizes and locations, piping, and electrical connections to verify actual locations, sizes, and other conditions affecting chiller performance, maintenance, and operations before equipment installation.
   1. Final chiller locations indicated on Drawings are approximate. Determine exact locations before roughing-in for piping and electrical connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CHILLER INSTALLATION

A. Install chillers on support structure indicated. Install per manufacturer’s IOM documentation, shop drawings, and submittal documents.

B. Maintain manufacturer's recommended clearances for service and maintenance.

C. Arrange piping to enable dismantling and permit head removal for tube cleaning

D. Charge chiller with refrigerant if not factory installed.

E. Install separate devices furnished by manufacturer and not factory installed.

3.3 CONNECTIONS

A. Comply with requirements for piping specified in Section 23 21 13 - Hydronic Piping, and Section 23 21 16 - Hydronic Specialties. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to chiller to allow service and maintenance.

C. Evaporator Fluid Connections: Connect to evaporator outlet with shutoff valve, flow switch, thermometer, plugged tee with shutoff valve and pressure gauge and drain connection with valve. Make connections to chiller with a mechanical coupling.

D. Refrigerant Pressure Relief Device Connections: For chillers installed indoors, extend to the outdoors without valves or restrictions. Comply with ASHRAE 15. Connect to chiller pressure relief device with flexible connector and dirt leg with drain valve.

E. Connect each chiller drain connection with a union and drain pipe, and extend pipe, full size of connection, to floor drain. Provide a shutoff valve at each connection.

3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

B. Factory Start-Up Services: Provide factory supervised start-up on-site for a minimum of two working days and ensure proper operation of the equipment. During the period of start-up, the factory authorized technician shall instruct the owner’s representative in proper care and operation of the equipment.
   1. Provide installation and startup checks according to manufacturer's instructions.
   2. Verify that refrigerant charge is sufficient and chiller has been leak tested.
   3. Verify that pumps are installed and functional.
   4. Verify that thermometers and gauges are installed.
   5. Operate chiller for run-in period.
   6. Verify that refrigerant pressure relief device is vented outside.
   7. Verify and record performance of fluid flow and low-temperature interlocks.
   8. Verify and record performance of chiller protection devices.
   9. Test and adjust controls and safeties. Replace damaged or malfunctioning controls and equipment.

C. Inspect field-assembled components, equipment installation, and piping and electrical connections for proper assembly, installation, and connection.

D. Prepare test and inspection startup reports.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chillers.

END OF SECTION

SECTION 23 81 23

TERMINAL HEATING AND COOLING UNITS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Unit Ventilators.

1.2 RELATED WORK

A. Section 23 30 00 – Heating, Ventilating, and Air Conditioning.

1.3 REFERENCES

A. AMCA 99 - Standards Handbook.

B. AMCA 210 - Laboratory Methods of Testing Fans for Rating Purposes.

C. AMCA 300 - Test Code for Sound Rating Air Moving Devices.

D. AMCA 301 - Method of Publishing Sound Ratings for Air Moving Devices.

E. AMCA 500 - Test Methods for Louver, Dampers, and Shutters.

F. ANSI/AFBMA 9 - Load Ratings and Fatigue Life for Ball Bearings.

G. ANSI/AFBMA 11 - Load Ratings and Fatigue Life for Roller Bearings.

H. ANSI/UL 900 - Test Performance of Air Filter Units.

I. ARI 410 - Forced-Circulation Air-Cooling and Air-Heating Coils.

J. ARI 430 - Standard for Central-Station Air-Handling Units.

K. ARI 435 - Standard for Application of Central-Station Air-Handling Units.

L. NFPA 90A - Installation of Air Conditioning and Ventilation Systems.

M. SMACNA - Low Pressure Duct Construction Standards.

1.4 QUALITY ASSURANCE

A. Fan Performance Ratings: Conform to AMCA 210 and bear the AMCA Certified Rating Seal.

B. Sound Ratings: AMCA 301; tested to AMCA 300 and bear AMCA Certified Sound Rating Seal.

C. Fabrication: Conform to AMCA 99 and ARI 430.

D. Filter Media: ANSI/UL 900 listed, Class I or Class II.

E. Air Coils: Certify capacities, pressure drops, and selection procedures in accordance with ARI 410.

F. Air Handling Units: Product of manufacturer regularly engaged in production of components who issues complete catalog data on total product.

1.5 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01 00 00.

B. Shop drawings shall indicate assembly, unit dimensions, weight loading, required clearances, construction details, and field connection details.

C. Product data shall indicate dimensions, weights, capacities, ratings, fan performance, motor electrical characteristics, and gauges and finishes of materials.

D. Provide fan curves with specified operating point clearly plotted.

E. Submit sound power levels for both fan outlet and casing radiation at rated capacity.

F. Submit product data of filter media, filter performance data, filter assembly, and filter frames.

G. Submit electrical requirements for power supply wiring including wiring diagrams for interlock and control wiring, clearly indicating factory-installed and field-installed wiring.

H. Submit manufacturer's installation instructions under provisions of Section 01 00 00.

1.6 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provisions of Section 01 00 00.

B. Include instructions for lubrication, filter replacement, motor and drive replacement, spare parts lists, and wiring diagrams.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in factory-fabricated protective containers, with factory-installed shipping skids and lifting lugs.

B. Store and protect products.

C. Store in clean dry place and protect from weather and construction traffic. Handle carefully to avoid damage to components, enclosures, and finish.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Do not operate units for any purpose, temporary or permanent, until ductwork is clean, filters are in place, bearings lubricated, and fan has been test run under observation.

1.9 EXTRA STOCK

A. Provide one set of disposable panel filters.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Modine.

B. Herman Nelson.

C. Trane.

D. Substitutions under provisions of Section 01 00 00.

2.2 GENERAL

A. Furnish and install complete factory tested Unit Ventilators as indicated on the plans and as specified herein.

B. The Unit Shall Consist Of:
1. Factory-built housing.
2. Supply fan and motor.
3. Outside air and Return air Dampers.
4. Chilled water coil.
5. Hot water coil.
6. DDC capable controls.

2.3 HOUSING

A. Exterior cabinet panels shall be constructed of heavy-gauge steel. All sheet metal panels must be cleaned and phosphatized, then painted electrostatically with an oven baked environmentally friendly thermosetting urethane powder finish.

2.4 FANS, MOTORS AND DRIVES

A. Fans shall be double inlet, forward curved centrifugal type with offset aerodynamic blades. Assembly shall be statically and dynamically balanced.

B. Fan and motor assembly shall be direct drive type with ECM motor. Unit to be DDC Prepped for full modulation of motor by BMS.

2.5 FILTERS

A. Filter shall be one-piece design located to provide filtration of the outdoor air/return air mixture to assure even dust loading and balanced airflow in lieu of separate filters for outdoor air and return. Filter shall be factory furnished and initially installed in all units.

2.6 DAMPERS

A. Provide with separate room air and outdoor air dampers. The room air damper shall be constructed of aluminum using metal-forming techniques to resist twisting and shall be counterbalanced against back pressure. Outdoor air damper shall be two-piece double-wall construction with 1/2" thick, 1.5 lbs. density fiberglass insulation encapsulated between welded 20 ga. galvanized steel blades for rigidity.

2.7 HEATING AND COOLING COILS

A. Coils shall be constructed with copper tubes and mechanically bonded aluminum corrugated plate fins. All coils shall have aluminum individual unshared fin surfaces.

2.8 DRAIN PAN

A. All units shall have a drain pan constructed of corrosion-resistant composite material and shall be insulated. A drain outlet shall be provided on both ends of the pan. The drain hand of connection shall be easily field reversed to the opposite end. The drain pan shall be able to be sloped in either direction for proper condensate removal. Drain shall be provided with an optional secondary, overflow drain connection on both ends of the pan

2.9 TEMPERATURE CONTROLS

A. Each unit ventilator shall be furnished with a factory installed and wired, microprocessor based DDC Unit Ventilator Controller (UVC), by the manufacturer of the unit ventilator, which is pre-programmed, factory pretested prior to shipment and capable of complete, standalone unit control, master-slave arrangement or incorporation into a building-wide network using an optional plug-in communication module. The UVC shall be preprogrammed with the application code required to operate the unit using ASHRAE Cycle II. The unit control system shall include all required temperature sensors, input/output boards, main microprocessor modules, Local User Interface (referred to as LUI) Touch Pad with Digital LED Display, wiring, 24 volt power and direct coupled damper actuators. The UVC shall support up to 6 analog inputs, 12 binary inputs, and 9 binary outputs plus additional I/O points of 4 analog inputs and 8 binary outputs.

2.10 WARRANTIES

A. The entire unit shall be warranted for one year from date of start up. All components shall be guaranteed against defects and shall be replaced at no cost to the owner including labor for the warranty period.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions and in conformance with ARI 435.

END OF SECTION

SECTION 23 81 46

UNITARY HEAT PUMP AIR CONDITIONING EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section includes packaged heat pump unit, and unit controls.

B. Related Sections:
1. Division 26 Wiring Connections: Execution requirements for electrical connection to units specified by this section.

1.2 REFERENCES

A. ARI 210/240-89 or 360-85 (Air-Conditioning and Refrigeration Institute) - Unitary Air-Conditioning Equipment.

B. ARI 270 (Air-Conditioning and Refrigeration Institute) - Sound Rating of Outdoor Unitary Equipment.

C. UL Standard UL1995.

D. ANSI Standard Z21.47.

1.3 SUBMITTALS

A. Submit under provisions of Section 01 00 00 - General Requirements.

B. Shop Drawings: Indicate capacity and dimensions of manufactured products and assemblies. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.

C. Product Data: Submit data indicating dimensions, rough-in connections, and electrical characteristics and connection requirements Provide capacity and dimensions of manufactured products and assemblies required for this Project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections. Provide data for manufactured products and assemblies. Indicate water, drain, thermostatic valves, and electrical rough-in connections with electrical characteristics and connection requirements.

D. Manufacturer's Installation Instructions: Submit assembly, support details, connection requirements, and include start-up instructions.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.4 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Accept equipment on site in factory packaging. Inspect for damage.

B. Store and protect products under provisions of Section 01 00 00. Protect equipment from damage by providing temporary covers until construction is complete in adjacent space. Protect rooftop units from damage by storing off the roof until the roof mounting curbs are in place.

1.6 WARRANTY

A. Section 01 00 00 – General Requirements: Warranties.

1.7 EXTRA MATERIALS

A. Section 01 00 00 – General Requirements.

B. Supply one extra set of filters for each unit. Filters shall be clean at substantial completion and the extra set new in the box provided to the owner.

PART 2 - PRODUCTS

2.1 PACKAGED HEAT PUMP UNITS

A. Manufacturers:

1. AAON.
2. Trane.
3. Carrier.
4. Substitutions: Under provisions of Section 01 00 00.

2.2 GENERAL REQUIREMENTS

A. Unit cooling and heating capacities shall be in accordance with and tested to ARI standard 210/240 and 270 and shall carry the ARI compliance label. Capacities listed shall be for unit operation between 115F and 0F degrees F ambient.

B. Units shall be safety certified in accordance with UL Standard UL1995 by an accredited testing laboratory and shall carry the label of the testing agency.

C. Unit shall be manufactured in a facility registered to ISO 9001 manufacturing quality standard.

D. Roof curb shall be designed to conform to NRCA Standards.

E. Insulation and adhesives shall meet NFPA 90A requirements for flame spread and smoke generation and shall meet ASHRAE Standard 62P.

F. Unit shall be shipped completely assembled by the manufacturer including all standard and optional items.

G. Unit shall be 100% run tested by the manufacturer with a copy of the run test report shipped with the unit and provided in the O&M Manuals at the end of the project.

2.3 FABRICATION

A. Cabinet: Specifically designed for outdoor rooftop application constructed entirely from G90 galvanized metal. All exterior components shall be 18 gauge or heavier material. Unit shall be painted with polyurethane paint capable of withstanding at least 500 hours when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.

B. Roof: Constructed as listed above for the cabinet and shall be broken or sloped to insure drainage.

C. Insulation: Factory applied to exposed vertical and horizontal panels. Minimum one inch thick neoprene coated or aluminum foil faced glass fiber with edges protected from erosion.

D. Access Doors: Access to all items requiring periodic inspections shall be through hinged, insulated, fully gasketed, access doors complete with quarter turn cam locks, internal metal liner, and rain break overhangs.

E. Wiring: All wiring shall be color-coded. Matching color-coded wiring diagrams shall be laminated and permanently fixed to the inside of the control panel door.

2.4 BLOWERS

A. Blowers: All blowers shall be plenum fan design, and direct drive.

B. Blowers, drives and motors shall be dynamically balanced.

C. Blower motor shall be of the ECM type.

2.5 OUTSIDE AIR

A. Shall be a modulating sensible controlled economizer with multi-stage integrated economizer and compressor operation for maximum benefit.

B. The economizer shall consist of a motor operated outdoor air damper and return air damper.

C. Damper blades shall be gear driven and designed to have no more than 25 CFM of leakage per square foot of damper area when subjected to 2" WG air pressure differential across the damper.

D. Damper motor shall be spring return to ensure closing of outdoor air damper during periods of unit shut down or power failure.

E. A pressure relief damper sized for 100% relief air shall be provided as part of the economizer.

2.6 CONDENSING SECTION

A. The condensing section shall be equipped with direct drive, vertical discharge condenser fan(s).

B. The condenser coil(s) shall be copper tube with aluminum fins mechanically bonded to the tubes.

2.7 EVAPORATOR COIL

A. The Coil shall have copper tubes with aluminum fins mechanically bonded to the tubes.

B. End casings shall be fabricated from galvanized steel.

C. Coils shall have equalizing type vertical tube distributors with a top suction connection.

2.8 REFRIGERATION SYSTEM

A. Compressors shall be of the hermetic scroll type with internal overload protection and mounted on the compressor manufacturer's recommended rubber vibration isolators.

B. Compressors shall be isolated from the base pan and supply air to avoid any transmission of noise from the compressor into the building area.

C. System shall be equipped with reversing valve and thermostatic expansion valves type refrigerant flow control.

D. Unit shall be fully factory charged with refrigerant R-410a.

2.9 ELECTRIC HEATERS

A. Electric elements shall be open wire type, adequately supported and insulated with ceramic bushings.

B. Electric heater packages must provide single point power capability.

2.10 ROOF CURB

A. Pitched roof curb shall be a minimum of 14" high above finished roof surface and shall have seal strip and wood nailer for flashing. Roof curbs shall be seismically rated.

2.11 CONTROLS

A. Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device.

B. Microprocessor controls shall provide for all 24V control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control and minimizes drift from set point. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

2.12 ECONOMIZER

A. The economizer assembly shall include fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control. The barometric relief shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment "off" cycle. Optional solid state or differential enthalpy control shall be available for either factory or field installation. The economizer arrives in the shipping position and shall be moved to the operating position by the installing contractor.

2.13 FILTERS

A. Unit to be furnished with 2”, MERV 13, pleated, throw away supply air filters.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install roof curb in accordance with manufacturer’s recommendations.

B. Install unit on roof curb in accordance with manufacturer’s recommendation.

C. Install all field installed options such as electric heaters in accordance with manufacturer’s recommendations.

3.2 MANUFACTURER'S FIELD SERVICES

A. Prepare and start systems in accordance with manufacturer’s recommendations.

3.3 DEMONSTRATION AND TRAINING

A. Demonstrate unit operation and maintenance under provisions of Section 01 00 00.

END OF SECTION