PROJECT MANUAL FOR:

Leon Johnson Hall Fire Suppression

MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA

December 8, 2019

PPA No. 18-2184

SET NO.:

MONTANA STATE UNIVERSITY

CAMPUS PLANNING,
DESIGN AND CONSTRUCTION
BOZEMAN, MONTANA
PHONE: (406) 994-5413 FAX: (406) 994-5665

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MONTANA
STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street • P.O. Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

PERMIT NOTICE

The drawings and specifications for this project have been submitted to the city of Bozeman for review. The contractor will pay all permit fees. The owner shall pay for plan review fee and the impact fee required for this project. The building permit must be appropriately displayed at the project site before construction may begin. The contractor shall contact the city of Bozeman for further clarification at the following:

CITY OF BOZEMAN
BUILDING INSPECTION DIVISION
DEPARTMENT OF PUBLIC WORKS
20 EAST OLIVE STREET, SUITE 208
PO BOX 640
BOZEMAN, MONTANA 59771-0640
(406) 582-2300

MONTANA
STATE UNIVERSITY

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INVITATION TO BID

Sealed bids will be received until **2:00 PM** on **Thursday, January 9, 2020,** and will be publicly opened and read aloud in the offices of **MSU Campus Planning, Design and Construction, Plew Building, 6th & Grant, Bozeman, Montana**, for: **Leon Johnson Hall Fire Suppression, PPA No. 18-2184.**

Bids shall be submitted on the form provided within the Contract Documents. Contract documents may be obtained at the offices of:

Montana State University
Campus Planning, Design and Construction
Plew Building, 6th & Grant
PO Box 172760
Bozeman, Montana 59717-2760

On the web at:
http://www.montana.edu/pdc/bids.html

A PRE-BID WALK-THROUGH IS SCHEDULED FOR Wednesday, December 18, 2019, AT 9:00 AM PARTICIPANTS SHOULD MEET AT: Plew Building, 6th & Grant, Room 214, Bozeman, Montana. ATTENDANCE IS STRONGLY RECOMMENDED. Bidders should thoroughly review the contract documents before the pre-bid conference.

Bids must be accompanied by a bid security meeting the requirements of the State of Montana in the amount of 10% of the total bid. After award, the successful bidder must furnish an approved Performance Security and a Labor & Material Payment Security each in the amount of 100% of the contract for contracts equal to or greater than $25,000.

No bidder may withdraw his bid for at least thirty (30) calendar days after the scheduled time for receipt of bids except as noted in the Instructions to Bidders.

The Owner reserves the right to reject any or all bids and to waive any and all irregularities or informalities and the right to determine what constitutes any and all irregularities or informalities.

Time of Completion
Bidder agrees to commence work immediately upon receipt of the Notice to Proceed and to substantially complete the project **within Two Hundred Forty (240) consecutive days**.

The State of Montana makes reasonable accommodations for any known disability that may interfere with an applicant's ability to compete in the bidding and/or selection process. In order for the state to make such accommodations, applicants must make known any needed accommodation to the individual project managers or agency contacts listed in the contract documents.

State of Montana - Montana State University

Facilities Services Campus Planning, Design and Construction

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street
PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

INSTRUCTIONS TO BIDDERS

1. Table of Contents

Provided in the Printed Project Manual:
Invitation to Bid
Instruction to Bidders
Bid Proposal, Form 098
Sample Standard Form of Contract
State of Montana General Conditions
MSU Supplementary Conditions
State of Montana Prevailing Wage Rates
Specifications
Drawings

These additional forms can be found on our website or will be provided upon request:
http://www.montana.edu/pdc/docs/index.html
Substitution Request, Form 99
Schedule of Values, Form 100
Periodic Estimate for Partial Payment, Form 101
Acknowledgement of Subcontractors, Form 102
Consent of Surety to Final Payment, Form 103
Contract Change Order, Form 104
Contractor's Affidavit, Form 106
Certificate of Substantial Completion, Form 107
Construction Change Directive, Form 109
Request for Information, Form 111
Performance Bond, Form 112
Labor and Material Payment Bond, Form 113
Certificate of Final Acceptance, Form 118

2. Viewing of Contract Documents

2.1. The Contract Documents may be viewed at the following locations:

Builders Exchange of Billings
2050 Broadwater STE A
Billings MT 59102
406/652-1311
bbx@billingsplanroom.com

Bozeman Builders Exchange
1105 Reeves RD W STE 800
Bozeman MT 59718
406/586-7653
exchange@bozemanplanroom.com

Butte Builders Exchange
4801 Hope Road
Butte MT 59701
406/782-5433
butteplans@gmail.com

NW MT - Flathead Builders Exchange
2303 Hwy 2 E
Kalispell, MT 59901
406/755-5888
planex@kalcopy.com

Great Falls Builders Exchange
202 2ND Avenue S
Great Falls MT 59401
406/453-2513
gfbe@greatfallsplans.com

Helena Plans Exchange
1530 Cedar Street Suite C
Helena MT 59601
406/457-2679
helenaplanex@helenacopycenter.com

Missoula Plans Exchange
201 N Russell ST
Missoula MT 59801
406/549-5002
mpe@vemcoinc.com

3. Borrowing of Documents: Up to two hard copy sets may be obtained for General Contractors. Additionally, Contract Documents will be available electronically. If shipping of hard copies is required, it will be at the contractor's expense.

3.1. Contract Documents may be obtained at the office of:
MONTANA STATE UNIVERSITY
CAMPUS PLANNING, DESIGN & CONSTRUCTION
PLEW BUILDING 1st FLOOR
6TH AND GRANT
BOZEMAN, MONTANA 59717-2760
406/994-5413

3.2. All borrowed Contract Documents shall be returned to Campus Planning, Design & Construction within ten (10) calendar days after the bid opening for the deposit refund (if deposit was required). However, if the Contract Documents are not in a condition where they can be reused by the Owner to construct the project, the Owner may at its sole discretion may retain the deposit or levy costs to contractor in order to reproduce a replacement set.

4. Visits to Site

4.1. Prospective bidders are requested to contact the following for inspection of the site:

Karen Hedglin, Project Manager
Montana State University
Campus Planning, Design & Construction
6th and Grant, PO Box 172760
Bozeman, Montana 59717-2760
Ph: 406/570-4304; Fax: 406/994-5665

4.2. Failure to visit site will not relieve the Contractor of the conditions of the contract.

5. Requests for Substitution

5.1 Any requests for product substitutions must be submitted on the "Substitution Request" Form 099, to the Architect/Engineer at least ten (10) days prior to the date of the bid opening for consideration by the Architect/Engineer. Any request for substitution made after this time restriction, including those made after award during project construction may be rejected without consideration by either the Architect/Engineer or the Owner.

6. Bids/Proposals

6.1. The bidder shall submit his bid on the Bid Proposal Form furnished with the Contract Documents.

6.2. DO NOT send the Contract Documents with the Proposal. The Contract Documents shall be returned as noted in Article 3.2 of the Instructions to Bidders.

6.3. If the project is funded by any portion of federal funds, the following may apply: on Federally-funded projects, a "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion" form must be submitted with the bid proposal. If the debarment form is not included within the Construction Documents, federal funds (if included) do not require the form or are not included in the project and the debarment form is not required.

6.4. Proposals shall be in a sealed envelope and addressed to:

STATE OF MONTANA, MONTANA STATE UNIVERSITY
CAMPUS PLANNING, DESIGN & CONSTRUCTION
PLEW BUILDING 1ST FLOOR
6TH AND GRANT
PO BOX 172760, BOZEMAN, MONTANA 59717-2760

6.5. The envelope shall state that it contains a "BID PROPOSAL" and indicate the following information:

Name of Project:	**Leon Johnson Hall Fire Suppression**
Location:	**Montana State University Bozeman Campus**
MSU PPA Project Number:	**18-2184**
Name of Bidder:	_____
Acknowledge Addendum Number:	__, __, __, __

6.6. It is the bidder's responsibility to deliver or ensure delivery of the bid proposal to Montana State University, Campus Planning, Design, and Construction. Proposals received after the scheduled closing time for bids by either the bidder, a delivery service (e.g. Federal Express, U.S. Postal Service, United Parcel Service, etc.), or the state's own mail delivery system, will be rejected. Proposals entitled for consideration must be time-stamped in the Owner's office prior to the closing time for receipt of bids. The official time clock for receipt of bids and fax modifications is the Owner's time and date stamp clock located in the reception area of the Owner's office. No other clocks, calendars or timepieces are recognized. All bidders are responsible to ensure all bids and fax modifications are received in the Owner's office prior to the scheduled closing time.

6.7. If requested on the Bid Proposal, any person making a bid to perform the Work shall, as a requirement of a responsible bid, set forth the name of each subcontractor specified in the "List of Subcontractors" which is part of the bid proposal. The bidder shall list only one subcontractor for each such portion or work listed. The bidder whose bid is accepted shall not:

6.7.1. Substitute any other subcontractor in place of the subcontractor listed in the original bid, except

by specific consent of the Owner. The Owner, at its sole discretion, may grant substitution with consent of the originally listed subcontractor, or in consideration of other factor(s) involved if deemed relevant to the successful performance of the Contract.

6.7.2. Permit any such subcontract to be voluntarily assigned, transferred or allow it to be performed by any party other than the subcontractor listed in the original bid without the consent of the Owner.

6.8. Bid Proposals entitled to consideration shall be made in accordance with the following instructions:

6.8.1. Made upon form provided;
6.8.2. All blank spaces properly filled;
6.8.3. All numbers stated in both writing and in figures;
6.8.4. Shall contain no additions, conditional or alternate bids, erasures or other irregularities;
6.8.5. Shall acknowledge receipt of all addenda issued.

6.9. Bid Proposals entitled to consideration shall be signed by the proper representative of the firm submitting the proposal as follows:

6.9.1. The principal of a single owner firm;
6.9.2. A principal of a partnership firm;
6.9.3. An officer of an incorporated firm, or an agent whose signature is accompanied by a certified copy of the resolution of the Board of Directors authorizing that agent to sign; or,
6.9.4. Other persons signing for a single-owner firm or a partnership shall attach a power-of-attorney evidencing his authority to sign for that firm.

6.10. Unit Prices: When a Bid Proposal Form contains unit prices, any errors discovered in the extension of those unit prices will be corrected by the Owner using the unit price figures. The adjusted extended amount will then be used to determine the correct total bid. Only after the amounts have been checked and adjusted, if necessary, will the valid low bid be determined.

6.11. Estimated Quantities: All estimated quantities stipulated in the Bid Proposal and other Contract Documents are approximate and are to be used only as a basis for estimating the probable cost of the work and for the purpose of comparing proposals submitted for the work. It is understood and agreed that the actual amounts of work done, and materials furnished under unit price items may vary from such estimated quantities. The actual quantities will depend on the conditions encountered at the time the work is performed.

6.12. Any bidder may modify his bid by fax communication only.

6.12.1 It is the bidder's responsibility to ensure that the entire modification is received at the bid opening location prior to the scheduled closing time for receipt of bids. The modification shall not reveal the bid price but shall only provide the ADDITION or SUBTRACTION from the original proposal.

6.12.2 The Owner is not responsible for the performance of the facsimile/printer machine, maintaining adequate paper levels, toner levels, the telephone connection, quality of the facsimile, or any other factors affecting receipt of the fax. Unreadable or difficult-to-read facsimiles may be rejected at the sole discretion of the Owner.

6.12.3 Changes in the listed subcontractors, if any, shall also be provided.

6.12.4 Bid modifications must be verified by hard copy provided to the Owner within two (2) business days after the bid opening.

6.12.5 Bid modifications shall be directed to fax phone (406) 994-5665.

6.12.6 All facsimiles shall be date and time stamped on the same time-stamp clock in the Owner's office that is used for receipt of bids in order to be considered valid. The Owner may also use the date and time on the automatically-generated email notification of facsimile receipt as generated by the State's system. Any date and time indicated at the top of the facsimile on either the bidder's or the Owner's facsimile/printer machine will not be used in determining time of arrival of the modification.

6.13. The Owner reserves the sole right to reject any or all bids and to waive any irregularities or informalities. The Owner also reserves the sole right to determine what constitutes irregularities or informalities and/or what is material and/or immaterial to the bids received.

7. Bid Security

7.1. IF THE PROJECT COST IS LESS THAN $25,000, AT ITS SOLE DISCRETION THE STATE OF MONTANA MAY OR MAY NOT REQUIRE BID SECURITY (18-2-302 MCA).

7.2. All proposals shall be accompanied by a bid security in the amount of 10% of the bid price, as evidence of good faith (18-2-302 MCA). (**MSU does not waive bid security**.)

7.3. Bid security shall be in the form of lawful moneys of the United States, cashier's check, certified check, bank money order or bank draft, bid bond or bonds payable to the State of Montana (18-2-302 MCA).

7.4. If the bidder, to whom a contract is awarded, fails to enter into and execute the proposed contract within fifteen (15) calendar days of award, the bidder shall forfeit the bid security (18-1-204 MCA).

7.5. The bid security of unsuccessful bidders will be returned when the contract has been awarded to the successful bidder or when all bids have been rejected (18-1-205 MCA).

7.6. Execution of and entering into a contract includes providing all necessary insurance certificates, bonds, signed contract and current copy of the construction contractor registration certificate.

7.7. **NOTE: PER STATE POLICY, IF CASH, CHECK, MONEY ORDER, OR BANK DRAFT ARE PROVIDED AS BID SECURITY, IT WILL BE DEPOSITED IN THE TREASURY. UNSUCCESSFUL BIDDERS WILL HAVE THEIR SECURITY RETURNED UPON CONTRACT AWARD. THE SUCCESSFUL BIDDER'S SECURITY MAY BE RETURNED UPON ISSUANCE OF NOTICE TO PROCEED.**

8. Withdrawal of Bids

8.1. Any bidder may withdraw his bid proposal at any time prior to the scheduled closing time for the receipt of bids.

8.2. Once the closing time for the receipt of bids is reached, a bid may not be withdrawn for a period of thirty (30) calendar days.

9. Interpretation of Contract Documents

9.1. Bidders shall promptly notify the Architect/Engineer of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents or of the site and local conditions.

9.2. Bidders requiring clarification or interpretation of the Contract Documents shall request, in writing, clarification from the Architect/Engineer at least ten (10) calendar days prior to the date set for receipt of bids.

9.3. Any interpretations, corrections, or change in the Contract Documents prior to the bid opening will be made by written addendum issued by the Architect/Engineer. The Architect/Engineer will endeavor to notify all plan holders of any addenda issued but it shall be the responsibility of the individual bidders to insure they have received all addenda prior to the submission of their bid.

9.4. All written addenda issued by the Architect/Engineer will become part of the Contract Documents and all bidders shall be bound by such addenda whether or not received and/or acknowledged by the bidder. No oral or telephone modifications of the Contract Documents will be considered or allowed.

10. Award of Bids

10.1. All bids received by the stated hour will be opened and publicly read aloud.

10.2. The Owner reserves the right to reject any and all bids and to waive any informality or irregularity in any bid received. Owner reserves the right to determine what constitutes material and/or immaterial informalities and/or irregularities.

10.3. The low bid shall be determined on the basis of the lowest Base Bid or the lowest combination of Base Bid and Alternate Bids, accepted in consecutive order.

10.4. The Owner shall award such contract to the lowest responsible bidder (18-1-102 MCA).

10.4.1. The Owner may make such investigations as it deems necessary to determine whether or not any or all bidders are responsible.

10.4.2. The term "responsible" does not refer to pecuniary ability only, nor the ability to tender sufficient performance and payment bonds.

10.4.3. The term "responsible" includes, but is not limited to:

10.4.3.1. Having adequate financial resources to perform the contract or the ability to obtain them;

10.4.3.2. Being able to comply with the required delivery, duration, and performance schedule;

10.4.3.3. Having a satisfactory record of integrity and business ethics;

10.4.3.4. Having the necessary organization, experience, accounting, and operational controls;

10.4.3.5. Having the necessary production, construction, technical equipment, and facilities; and,

10.4.3.6. Having the technical skill, ability, capacity, integrity, performance, experience, lack of claims and disputes, lack of actions on bonds, lack of mediations, arbitrations and/or lawsuits related to construction work or performance, and such like.

10.4.4. Bidders shall furnish to the Owner all information and data for this purpose as the Owner may request.

10.4.5. The Owner reserves the right to reject any bid if the investigation or evidence of any Bidder fails to satisfy the Owner that such Bidder is properly and adequately qualified to suitably perform and satisfactorily execute the obligations of the Contract and Work defined in the Contract Documents.

10.5. The Owner shall award such contract to the lowest responsible bidder without regard to residency except on a reciprocal basis: a resident bidder will be allowed a preference on a contract against the bid of any non-resident bidder from any state or country that enforces a preference for resident bidders. The preference given to resident bidders of the State of Montana must be equal to the preference given in the other state or country (18-1-102, MCA). This does not apply when prohibited by Federal requirements.

10.6. The State of Montana may negotiate deductive changes, not to exceed 7% of the total cost of the project, with the lowest responsible bidder when the lowest responsible bids causes the project cost to exceed the appropriation; or with the lowest responsible bidders if multiple contracts will be awarded on the projects when the total of the lowest responsible bids causes the project cost to exceed the appropriation. A bidder is not required to negotiate his bid but is required to honor his bid for the time specified in the bidding documents. The Owner may terminate negotiations at any time (18-2-105(7) MCA).

11. Contract

11.1. The sample Standard Form of Contract between Contractor and Owner, as issued by the Owner, will be used as the contracting instrument and is bound within the Contract Documents.

11.2. The form shall be signed by a proper representative of the bidder as defined above in these instructions.

11.3. The contractor shall also complete and return a federal form W-9 with the Contract.

12. Performance, Labor and Material Payment Security

12.1. IF THE PROJECT COST IS LESS THAN $25,000, AT ITS SOLE DISCRETION THE STATE OF MONTANA MAY OR MAY NOT REQUIRE A PERFORMANCE OR LABOR AND MATERIAL PAYMENT SECURITY (18-2-201 MCA). (**MSU REQUIRES BONDS ON ALL PROJECTS ABOVE $25,000.)**

12.2. THE CONTRACTOR SHALL PROVIDE BOTH SECURITIES FOR THIS PROJECT AS SPECIFIED BELOW, UNLESS SPECIFICALLY DIRECTED THAT THIS REQUIREMENT HAS BEEN WAIVED ELSEWHERE IN THESE DOCUMENTS.

12.3. The Owner shall require the successful bidder to furnish a Performance Bond in the amount of 100% of the contract price as security for the faithful performance of his contract (18-2-201, MCA).

12.4. The Owner shall require the successful bidder to furnish a Labor and Material Payment Bond in the amount of 100% of the contract price as security for the payment of all persons performing labor and furnishing materials in connection therewith (18-2-201 MCA).

12.5. The bonds shall be executed on forms furnished by the Owner. No other forms will be acceptable.

12.6. The bonds shall be signed in compliance with State statutes (33-17-111 MCA).

12.7. Bonds shall be secured from a State licensed bonding company.

12.8. Power of Attorney

12.8.1. Attorneys-in-fact who sign contract bonds must file with each bond a certified and effectively dated copy of their power of attorney;
12.8.2. One original copy shall be furnished with each set of bonds.
12.8.3. Others furnished with a set of bonds may be copies of that original.

13. Notice To Proceed

13.1. The successful bidder who is awarded the contract for construction will not be issued a Notice to Proceed until there is a signed Contract, the specified insurance certificates and a copy of the bidder's current Construction Contractor Registration Certificate in the Owner's possession. All items are required within fifteen (15) calendar days of contract award made by the Owner.

14. Laws and Regulations

14.1. The bidders' attention is directed to the fact that all applicable federal and state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the project shall apply to the contract throughout and will be deemed to be included in this contract as if bound herein in full.

15. Payments

15.1. NOTICE OF APPROVAL OF PAYMENT REQUEST PROVISION. Per Title 28, Chapter 2, Part 21, this contract allows the Owner to change the number of days to approve a Contractor's payment request. This contract allows the Owner to approve the Contractor's payment request within thirty-five (35) calendar days after it is received by the Owner without being subject to the accrual of interest.

16. Buy Safe Montana Provisions

16.1. The successful bidder who is awarded the contract for construction shall provide their incident rate, experience modification ratio (EMR) and loss ratio with the first pay application

17. Time of Completion

17.1. Bidder agrees to commence work immediately upon receipt of the Notice to Proceed and to substantially complete the project **Two Hundred Forty (240) Consecutive Calendar days**.

17.2. Actual damages may be assessed pursuant to the General Conditions. The Contractor acknowledges and understands that the Owner may suffer loss for every day of delay Final Acceptance is not achieved. Nothing contained in this waiver of liquidated damages shall be deemed to preclude an award of actual damages in accordance with Paragraphs 4.3 through 4.6 of the General Conditions of the Contract for Construction.

~END OF INSTRUCTIONS~

MONTANA
STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street • PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

BID PROPOSAL

LEON JOHNSON HALL FIRE SUPPRESSION
PPA No. 18-2184

TO:
State of Montana, Montana State University
Campus Planning, Design & Construction
Attn: Rebecca Barney, Contract Administrator
Plew Building, 6th & Grant,
PO Box 172760
Bozeman, Montana 59717-2760

Prospective Bidders:

The undersigned, having familiarized themselves with the Contract Documents, site, location, and conditions of the Work as prepared by **Coffman Engineers, 751 Osterman Drive, Suite 104, Bozeman, MT 59715, 406-582-1936,** by submission of this Bid Proposal, hereby agrees to provide all materials, systems, equipment and labor necessary to complete the Work for the total sum as follows:

BASE BID:

_____ and _____ /100 DOLLARS
(ALPHA notation)

$_____
(NUMERIC notation)

ALTERNATE NO. 1: ADD Fire Sprinkler Work and associated Asbestos Abatement to the Third Floor Annex area as marked on Sheet FX1.6.
THE BIDDER AGREES TO **ADD** THE SPECIFIED SCOPE OF WORK FOR THE TOTAL SUM OF:

_____ and _____ /100 DOLLARS
(ALPHA notation)

$_____
(NUMERIC notation)

LIST OF SUBCONTRACTORS

This section must be completed to meet the requirements of a responsive bid (The Owner still retains the right to determine whether or not this requirement is an irregularity or informality in the bids submitted). If work will be performed by the General Contractor, enter the name of the General Contractor. Should Alternates be included in the bid proposal, and the listed subcontractors change based upon the pricing of the alternates, the General Contractor shall provide a listing or notation of the change in subcontractors for each alternate for each description of the work.

DESCRIPTION OF WORK	SUBCONTRACTOR
Fire Alarm	_____
Fire Sprinkler	_____
Asbestos Abatement	_____

This bidder acknowledges receipt of the following addenda:

ADDENDUM No.:	_____	Dated:	_____
ADDENDUM No.:	_____	Dated:	_____
ADDENDUM No.:	_____	Dated:	_____

By signing below, the bidder agrees to all terms specified and AGREES TO fulfill the requirements of the CONTRACT in strict accordance with the bidding documents.

Company Name: _____

Signature: _____

Print Name: _____

Title: _____

Business Address: _____

_____

_____

Construction Contractor Registration No.: _____

Phone No.: _____

Fax No.: _____

Email: _____

Date.: _____

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street
PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

STANDARD FORM OF CONTRACT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION

THIS CONTRACT IS SUBJECT TO ARBITRATION PURSUANT TO THE UNIFORM ARBITRATION ACT, MCA TITLE 27, CHAPTER 5

This **CONTRACT** is made as of: (date)

BETWEEN:

[FIRM NAME]
[ADDRESS]
[CITY, STATE, ZIP]
[PHONE, FAX]

Herein after identified as the "**CONTRACTOR**" and the State of Montana, acting through its Director, Campus Planning, Design, and Construction, hereinafter identified as the "**OWNER**":

State of Montana
Montana State University
Campus Planning, Design, and Construction
Plew Building 6th & Grant, PO Box 172760
Bozeman, Montana 59717-2760

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

ARTICLE 1 – SCOPE OF WORK
The Contractor shall perform all Work as shown in the Contract Documents entitled:

[PROJECT NAME]

PPA NO.: ***[PPA NO.]***

Bid Documents Dated: (alpha date)

As prepared by:

[FIRM NAME]
[ADDRESS]
[CITY, STATE, ZIP]
[PHONE, FAX]

Hereinafter identified as the "**ARCHITECT/ENGINEER**."

ARTICLE 2 – TIME OF COMPLETION
As time is of the essence in performance, coordination, and completion of the Work contemplated under this Contract, the Work to be performed shall commence on a date set forth by the Owner in a written "Notice To Proceed" and shall be completed Within or by:
CONSECUTIVE CALENDAR DAYS.

If the Work is not completed within the time specified, the Owner may assess liquidated damages in the amount of:

[DOLLARS IN ALPHA] DOLLARS ($numeric) PER CALENDAR DAY.

ARTICLE 3 – CONTRACT SUM
The Owner shall pay the Contractor for performance of the Work, subject to additions and/or deductions by Change Order or damages as provided in the Contract Documents, the Contract Sum of:

[DOLLARS IN ALPHA] DOLLARS ($(dollars in numeric)).

ARTICLE 4 – PROGRESS PAYMENTS
The Owner shall make payments on account in accordance with the Contract Documents as follows: Ninety-Five (95%) of the portion of the Contract Sum for labor, materials, and equipment incorporated in the Work and for materials suitable stored. The Contractor shall be aware that the Owner has thirty-five (35) calendar days upon receipt in which to make approval and payment without being in

violation of statute or being subject to the accrual of interest shall, or the need to make written notice or justification to deny payment in whole or in part. The Contractor shall, within seven (7) calendar days following receipt of payment from the Owner, make payment to subcontractor(s).

ARTICLE 5 – FINAL PAYMENT

Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor when: 1) the Work is completed in accordance with the Contract Documents; 2) the Contract fully performed; 3) a final Form 101, Periodic Estimate for Partial Payment showing the final correct amounts is approved by the Architect/Engineer; 4) a Form 106, "Contractor's Affidavit of Completion, Payment of Debts and Claims, and Release of Liens" is completed and submitted; and 5) a Form 103, "Consent of Surety Company To Final Payment" if required, is completed and submitted.

ARTICLE 6 – CONTRACT DOCUMENTS

The Contract Documents, together with this Contract, form the entire Contract and Agreement between the Contractor and Owner. The Contract Documents, which are totally and completely a part of this Contract as if attached hereto or repeated herein, are enumerated in the General Conditions of the Contract for Construction inclusive of Wage Rates, Reports, and all other items bound with the Specifications and/or Project Manual(s).

ARTICLE 7 – PREVAILING WAGE SCHEDULE

The Contractor and all subcontractors at any tier or level shall, as a minimum, pay the standard prevailing rate of wages schedule (including per diem, fringe benefits for health, welfare, and pension contributions and travel allowance) in effect and as applicable to the district in which the Work is being performed.

ARTICLE 8 – VENUE

In the event of any mediation, arbitration, or litigation concerning any matter or dispute arising out of or related to the Contract, venue shall be the Eighteenth Judicial District in and for the County of Gallatin, Montana. The Contract shall be interpreted and subject to the laws of the State of Montana.

ARTICLE 9 – MISCELLANEOUS PROVISIONS

Other documents if any forming part of these contract documents are as follows:
Addendum #1 dated: ____ Addendum #2 dated: ____ Addendum #3 dated: ____

Contractor's Bid Proposal dated: ____
Contractor's Revised Proposal dated: ____

EXECUTION OF THIS CONTRACT

This Contract is entered into as of the day and year first written above:

CONTRACTOR: **(COMPANY)**
(ADDRESS)
(CITY, STATE, ZIP)
(PHONE, FAX)

_____
(Signature)

_____
(Print Name)

_____
(Title)

_____
(Date)

Contractor's Registration Certificate No. _____

Federal Tax Identification No. _____

Incorporated? _____ No _____ yes

Please refer to PPA No. in all correspondence.

OWNER: STATE OF MONTANA
MONTANA STATE UNIVERSITY
CAMPUS PLANNING, DESIGN, AND CONSTRUCTION
6TH & GRANT AVENUE, P.O. Box 172760
BOZEMAN, MONTANA 59717-2760

_____
John How, Director

_____
(Date)

MONTANA
STATE UNIVERSITY

GENERAL CONDITIONS
OF THE CONTRACT FOR CONSTRUCTION

State of Montana Version
(Form Revision Date: October 2019)

FRONT PAGE HIGHLIGHTS

Note: This list of items is not an exhaustive or all-inclusive list of the contractor's responsibilities for the Project but is provided solely for convenience and reference.

ITEM	REFERENCE	GENERAL CONDITIONS
Prevailing Wage Rates	Article 3.4.4	The Commissioner of The Montana Department of Labor and Industry (DOLl) has established the standard prevailing rate of wages in accordance with 18-2-401 and 18-2-402, MCA.
Warranty	Article 3.5.2	The warranty period shall be defined as commencing with Substantial Completion (or with each Substantial Completion if there is more than one) of the Project, or any portion thereof, and continuing for one (1) calendar year from the date of Final Acceptance of the entire project.
Schedule	Article 3.10.1	The Contractor's schedule shall be in the "Critical Path Method" and shall be in a form that is acceptable to the Owner and meet all the conditions of 3.10.
Time Limit on Claims	Article 4.3.1.1	Claims by either party must be initiated within 21 calendar days after occurrence of the event giving rise to such claim.
Weather Delays	Article 4.3.5.2	If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the current critical- path scheduled construction activities.
Waiver of Consequential Damages	Article 4.3.6	The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract.
Mediation & Arbitration	Article 4.5 & 4.6	The parties shall endeavor to resolve their Claims by mediation unless the parties mutually agree otherwise. Claims not resolved by mediation shall be decided by arbitration.
Changes	Article 7	Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive, or order for a minor change in the Work subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.
Change Order Allowable Costs	Article 7.2.2.1	As described with a 5% allowance for overhead and a 10% allowance for profit.
Time	Article 8	Time is of the essence in performance, coordination, and completion of the Work contemplated herein.
Liquidated Damages	Article 8.1.6	The Contractor and his surety shall be liable for and shall pay to the Owner the sums stipulated as liquidated damages for each calendar day of delay until the Work is substantially complete.
Contract Duration/Milestones/Phases	Article 8.1.9	All Work shall reach Substantial Completion by the date(s) listed or within the consecutive calendar days indication after the start date on the written Notice To Proceed.
Applications for Payment	Article 9.3.2	The Owner has thirty-five (35) calendar days after receipt for approval of the Contractor's Pay Request without being subject to the accrual of interest.
Retainage	Article 9.3.7	Until the Work is complete, the Owner will pay 95% of the amount due the Contractor on account of progress payments. If the Work and its progress are not in accordance with all or any part, piece, or portion of the Contract Documents, the Owner may, at its sole discretion and without claim by the Contractor, increase the amount held as retainage to whatever level deemed necessary to effectuate performance and progress of the Work.
Safety & Protection	Article 10	The Contractor shall be solely responsible for initiating, maintaining and supervising all safety, safety precautions, and safety programs in connection with the performance of the Contract.
Indemnification and Insurance Requirements	Article 11	The Contractor shall indemnify the Owner against the Contractor's negligence. The Contractor shall least carry Workers' Comp, General Liability, Automobile/Equipment, and Property (all-risk) Insurance Coverages as identified. State of Montana shall be listed as an additional insured with copy of ENDORSEMENT provided along with certificates of insurance. No waivers of subrogation shall be accepted.
Performance & Payment Bonds	Article 11.7	The Contract shall furnish a Performance Bond in the amount of 100% of the contract price as security for the faithful performance of his contract. The Contractor shall also furnish a Labor and Material Payment Bond in the amount of 100% of the contract price as security for the payment of all persons performing labor and furnishing materials in connection therewith.
Payroll & Basic Records	Article 13.8	Payrolls and basic records pertaining to the project shall be kept on a generally recognized accounting basis and shall be available to the Owner, Legislative Auditor, the Legislative Fiscal Analyst or his authorized representative at mutually convenient times. Accounting records shall be kept by the Contractor for a period of three years after the date of the Owner's Final Acceptance of the Project.

MONTANA STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
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GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

(Form Revision Date: October 2019)

1. ARTICLE 1 – GENERAL PROVISIONS

1.1. BASIC DEFINITIONS

1.1.1. CONTRACT DOCUMENTS. The Contract Documents consist of the Contract between Owner and Contractor (hereinafter the "Contract"), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Contract and Modifications issued after execution of the Contract. A Modification is: (1) a written amendment to the Contract signed by both parties; (2) a Change Order; (3) a Construction Change Directive; or, (4) a written order for a minor change in the Work issued by the Architect/Engineer. The Contract Documents shall include the bidding documents and any alterations made thereto by addenda. In the event of a conflict, discrepancy, contradiction, or inconsistency within the Contract Documents and for the resolution of same, the following order of hierarchy and control shall apply and prevail:

1) Contract; 2) Addenda; 3) Supplementary General Conditions; 4) General Conditions; 5) Specifications; 6) Drawings; 7) Instructions to Bidders; 8) Invitation To Bid; 9) Sample Forms.

1.1.1.1. If a conflict, discrepancy, contradiction, or inconsistency occurs within or between the Specifications and the Drawings, resolution shall be controlled by the following:

1.1.1.1.1. As between figures, dimensions, or numbers given on drawings and any scaled measurements, the figures, dimensions, or numbers shall govern;
1.1.1.1.2. As between large scale drawings and small scale drawings, the larger scale drawings shall govern;
1.1.1.1.3. As between the technical specifications and drawings; the technical specifications shall govern.
1.1.1.1.4. Shop Drawings and Submittals: Shop drawings and other submittals from the Contractor, subcontractors, or suppliers do not constitute a part of the Contract Documents.

1.1.1.2. The Contractor acknowledges, understands and agrees that the Contract Documents cannot be changed except as provided herein by the terms of the Contract. No act(s), action(s), omission(s), or course of dealing(s) by the Owner or Architect/Engineer with the Contractor shall alter the requirements of the Contract Documents and that alteration can be accomplished only through a written Modification process defined herein.

1.1.2. THE DRAWINGS. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, intent, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.3. THE SPECIFICATIONS. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

1.1.4. THE CONTRACT. The entire Contract for Construction is formed by the Contract Documents. The

Contract represents the entire, complete, and integrated agreement between the Owner and Contract hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between: (1) the Architect/Engineer and Contractor; (2) the Owner and any Subcontractor, Sub-subcontractor, or Supplier; (3) the Owner and Architect/Engineer; or, (4) between any persons or entities other than the Owner and Contractor. However, the Architect/Engineer shall at all times be permitted and entitled to performance and enforcement of its obligations under the Contract intended to facilitate performance of the Architect/Engineer's duties.

1.1.5. THE WORK. The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to completely fulfill the Contract and the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.1.6. THE PROJECT. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.7. TIME. Time is of the essence in performance, coordination, and completion of the Work contemplated herein. The Owner may suffer damages if the Work is not completed as specified herein. When any duration or time period is referred to in the Contract Documents by days, the first day of a duration or time period shall be determined as the day following the current day of any event or notice starting a specified duration. All durations in the Contract Documents are calendar days unless specifically stated otherwise.

1.2. CORRELATION, INTER-RELATIONSHIP, AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1. The intent of the Contract Documents is to include all items and all effort necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and inter-related, and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

1.2.2. Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. It is the Contractor’s responsibility to control the Work under the Contract.

1.2.3. Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3. CAPITALIZATION

1.3.1. Terms capitalized in these General Conditions include those which are: (1) specifically defined; and, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document.

1.4. INTERPRETATION

1.4.1. In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.5. EXECUTION OF THE CONTRACT AND CONTRACT DOCUMENTS

1.5.1. The Contract shall be signed by the Owner and Contractor. Execution of the Contract by the Contractor constitutes the complete and irrevocable binding of the Contractor and his Surety to the Owner for complete performance of the Work and fulfillment of all obligations. By execution of the Contract, the Contractor acknowledges that it has reviewed and familiarized itself with all aspects of the Contract Documents and agrees to be bound by the terms and conditions contained therein.

1.5.2. Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

1.5.3. The Contractor acknowledges that it has taken all reasonable actions necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to: (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, gas, electric power, phone service, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation, topography, and conditions of the ground; and, (5) the character of equipment and facilities needed for performance of the Work. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory geotechnical work done by the Owner, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the action described and acknowledged in this paragraph will not relieve the Contractor from responsibility for properly ascertaining and estimating the difficulty and cost of successfully performing the Work or for proceeding to successfully perform the Work without additional expense to the Owner.

1.5.4. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Owner, nor does the Owner assume responsibility for any understanding reached or representation made by any of its officers, agents, or employees concerning conditions which can affect the Work unless that understanding or representation is expressly stated in the Contract Documents.

1.5.4.1. Performance of any portion of the Work beyond that required for complying with the specifications and all other requirements of the Contract, shall be deemed to be for the convenience of the Contractor and shall be at the Contractor's sole expense.

1.5.4.2. There shall be no increase in the contract price or time allowed for performance which is for the convenience of the Contractor.

1.6. OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER INSTRUMENTS OF SERVICE

1.6.1. The Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect/Engineer and the Architect/Engineer's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect/Engineer or the Architect/Engineer's consultants. Unless otherwise indicated, the Architect/Engineer and the Architect/Engineer's consultants shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights except as defined in the Owner's Contract with the Architect/Engineer. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect/Engineer upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect/Engineer and the Architect/Engineer's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect/Engineer, and the Architect/Engineer's consultants. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect/Engineer and the Architect/Engineer's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings Specifications and other documents prepared by the Architect/Engineer and the Architect/Engineer's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect/Engineer's or Architect/Engineer's consultants' copyrights or other reserved rights.

1.6.2. Owner's Disclaimer of Warranty: The Owner has requested the Architect/Engineer prepare the Contract Documents for the Project which are adequate for bidding and constructing the Project. However, the Owner makes no representation, guarantee, or warranty of any nature whatsoever to the Contractor concerning such documents. The Contractor hereby acknowledges and represents that it has not, does not, and will not rely upon any such representation, guarantee, or warranty concerning the Contract Documents as no such representation, guarantee, or warranty have been or are hereby made.

2. ARTICLE 2 – THE OWNER

2.1. THE STATE OF MONTANA

2.1.1. The Owner is the State of Montana and is the sole entity to be identified as Owner in the Contract and as referred to throughout the Contract Documents as if singular in number.

2.1.2. Except as otherwise provided in Subparagraph 4.2.1, the Architect/Engineer does not have authority to bind the Owner. The observations and participations of the Owner or its authorized representative do not alleviate any responsibility on the part of the Contractor. The Owner reserves the right to observe the work and make comment. Any action or lack of action by the Owner shall not be construed as approval of the Contractor's performance.

2.1.3. The Owner reserves the right to require the Contractor, all sub-contractors and material suppliers to provide lien releases at any time. The Owner reserves the right to withhold progress payments until such lien releases are received for all work for which prior progress payments have been made. Upon the Owner's demand for lien releases (either verbally or written), the Contractor, all sub-contractors and material suppliers shall provide such releases with every subsequent application for payment through Final Acceptance of the Project.

2.1.4. Except for permits and fees, including those required under Subparagraph 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

2.1.5. Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

2.1.6. Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Specifications as are reasonably necessary for execution of the Work.

2.2. OWNER'S RIGHT TO STOP WORK

2.2.1. If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. However, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph 6.1.3. The issuance of a stop work order by the Owner shall not give rise to a claim by the Contractor or any subcontractor for additional cost, time, or other adjustment.

2.3. OWNER'S RIGHT TO CARRY OUT THE WORK

2.3.1. If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies

the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and increased costs, and compensation for the Architect/Engineer's additional services made necessary by such default, neglect, or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

2.4. OWNER'S RIGHT TO PERSONNEL

2.4.1. The Owner reserves the right to have the Contractor and/or subcontractors remove person(s) and/or personnel from any and all work on the project with cause but without cost to the Owner. Such requests from the Owner may be made verbally or in writing and may be done directly with the Contractor or indirectly through the Architect/Engineer. Cause may be, but not limited to, any of the following: incompetence, poor workmanship, poor scheduling abilities, poor coordination, disruption to the facility or others, poor management, causes delay or delays, disruption of the Project, will not strictly adhere to facility procedures and Project requirements either knowingly or unknowingly, insubordination, drug/alcohol use, possession of contraband, belligerent acts or actions, etc. The Contractor shall provide replacement person(s) and/or personnel acceptable to the Owner at no cost to the Owner.

2.4.2. Any issue or circumstance relating to or resulting out of this clause shall not be construed or interpreted to be interference with or impacting upon the Contractor's responsibilities and liabilities under the Contract Documents.

2.4.3. Person(s) and/or personnel who do not perform in accordance with the Contract Documents, shall be deemed to have provided the Owner with cause to have such persons removed from any and all involvement in the Work.

2.4.4. The Contractor agrees to indemnify and hold harmless the Owner from any and all causes of action, demands, claims, damages, awards, attorneys' fees, and other costs brought against the Owner and/or Architect/Engineer by any and all person(s) or personnel as a result of actions under this clause.

3. ARTICLE 3 – THE CONTRACTOR

3.1. GENERAL

3.1.1. The Contractor is the person or entity identified as such in the Contract and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

3.1.2. Construction Contractor Registration: The Contractor is required to be registered with the Department of Labor and Industry under 39-9-201 and 39-9-204 MCA prior to the Contract being executed by the Owner. A bidder must demonstrate that it has registered or promises that it will register immediately upon notice of award and prior to the commencement of any work. If the prevailing bidder cannot or does not register in time for the Owner to execute the Contract within fifteen (15) days of the date on the notice of award, the Owner may award, at its sole discretion, to the next lowest responsible bidder who meets this requirement. The Owner will not execute a contract for construction nor issue a Notice to Proceed to a Contractor who is not registered per 39-9-401(a) MCA. It is solely the Contractor's responsibility to ensure that all Subcontractors are registered in accordance with Title 39, Chapter 9, MCA.

3.1.3. The Owner's engagement of the Contractor is based upon the Contractor's representations by submission of a bid to the Owner that it:

3.1.3.1. has the requisite skills, judgment, capacity, expertise, and financial ability to perform the Work;

3.1.3.2. is experienced in the type of labor and services the Owner is engaging the Contractor to perform;

3.1.3.3. is authorized, licensed and registered to perform the type of labor and services for which it is being engaged in the State and locality in which the Project is located;

3.1.3.4. is qualified, willing and able to perform the labor and services for the Project in the manner and scope defined in the Contract Documents; and,

3.1.3.5. has the expertise and ability to provide labor and services that will meet the Owner's objectives, intent and requirements, and will comply with the requirements of all governmental, public, and quasi-public authorities and agencies having or asserting jurisdiction over the Project.

3.1.4. The Contractor shall perform the Work in accordance with the Contract Documents.

3.1.5. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect/Engineer in the Architect/Engineer's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.1.6. Quality Control (i.e. ensuring compliance with the Contract Documents) and Quality Assurance (i.e. confirming compliance with the Contract Documents) are the responsibility of the Contractor. Testing, observations, and/or inspections performed or provided by the Owner are solely for the Owner's own purposes and are for the benefit of the Owner. The Owner is not liable or responsible in any form or fashion to the Contractor regarding quality assurance or extent of such assurances. The Contractor shall not, under any circumstances, rely upon the Owner's testing or inspections as a substitute or in lieu of its own Quality Control or Assurance programs.

3.1.7. Buy-Safe Montana Provision: The Owner shall review the information provided by the Bidder under Articles 16 of the Instructions to Bidders. To promote a safe work environment, the Owner encourages an incidence rate less than the latest average for non-residential building construction for Montana as established by the federal Bureau of Labor Statistics for the prior year; an experience modification rating (EMR) less than 1.0; or a loss ratio of less than 100%. The Contractor shall submit with the first pay application or at Owner's request an explanation of why Contractor's incident rate, EMR, and/or loss ratio is greater than those listed in the previous sentence. The Contractor with a greater-than-average incidence rate, an EMR greater than 1.0, or a loss ratio of more than 100% shall schedule and obtain a Comprehensive Safety Consultation from the Montana Department of Labor & Industry, Employment Relations Division, Safety Bureau before the Owner grants Substantial Completion of the Work. For assistance in obtaining the Comprehensive Safety Consultation, the Owner shall submit the Contractor's information to the Montana Department of Labor and Industry, Employment Relations Division, Safety Bureau in those instances where the incident rate, EMR, and/or loss ratio is greater than the limits stated above

3.2. REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1. Since the Contract Documents are complementary and inter-related, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions affecting the Work. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents. However, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Architect/Engineer as a request for information in such form as the Architect/Engineer may require.

3.2.2. Any errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect/Engineer, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

3.2.3. If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect/Engineer in response to the Contractor's notices or requests for information pursuant to Subparagraphs 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in Subparagraphs 4.3.4 and 4.3.5. If the Contractor fails to perform the obligations of Subparagraphs 3.2.1 and 3.2.2, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Architect/Engineer for damages resulting from errors, inconsistencies, or omissions in the Contract

Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and failed to report it to the Architect/Engineer.

3.2.4. Except as otherwise expressly provided in this Contract, the Contractor assumes all risks, liabilities, costs, and consequences of performing any effort or work in accordance with any written or oral order (including but not limited to direction, instruction, interpretation, or determination) of a person not authorized in writing by the Owner to issue such an order.

3.2.5. By entering into this Contract, the Contractor acknowledges that it has informed itself fully regarding the requirements of the Drawings and Specifications, the General Conditions, the Supplementary General Conditions, all other documents comprising a part of the Contract Documents and all applicable laws, building codes, ordinances and regulations. Contractor hereby expressly acknowledges, guarantees, and warrants to the Owner that:

3.2.5.1. the Contract Documents are sufficient in detail and scope to enable Contractor to construct the finished project;

3.2.5.2. no additional or further work should be required by Owner at the time of Owner's acceptance of the Work; and,

3.2.5.3. when the Contractor's work is finished and the Owner accepts, the Work will be complete and fit for the purpose intended by the Contract Documents. This acknowledgment and guarantee does not imply that the Contractor is assuming responsibilities of the Architect/Engineer.

3.2.6. Sufficiency of Contract Documents: Prior to submission of its bid, and in all events prior to and upon signing the Contract, the Contractor certifies, warrants and guarantees that it has received, carefully reviewed, and evaluated all aspects of the Contract Documents and agrees that said Documents are adequate, consistent, coordinated, and sufficient for bidding and constructing the Work requested, intended, conceived, and contemplated therein.

3.2.6.1. The Contractor further acknowledges its continuing duty to review and evaluate the Contract Documents during the performance of its services and shall immediately notify the Architect/Engineer of any problems, conflicts, defects, deficiencies, inconsistencies, errors, or omissions it discovers in the Contract Documents and the Work to be constructed; and, any variances it discovers between the Contract Documents and applicable laws, statutes, building codes, rules or regulations.

3.2.6.2. If the Contractor performs any Work which it knows or should have known due to its experience, ability, qualifications, and expertise in the construction industry, that involves problems, conflicts, defects, deficiencies, inconsistencies, errors, or omissions in the Contract Documents and the Work to be constructed and, any variances between the Contract Documents and applicable laws, statutes, building codes, rules or regulations, without prior written notification to the Architect/Engineer and without prior authorization to proceed from the Architect/Engineer, the Contractor shall be responsible for and bear the costs and delays (including costs of any delay) of performing such Work and all corrective actions as directed by the Architect/Engineer.

3.2.6.3. Any and all claims resulting from the Contractor’s failure, including those of any subcontractor or supplier, to carefully review, evaluate, and become familiar with all aspects of the Contract Documents shall be deemed void and waived by the Contractor.

3.2.7. Sufficiency of Site Conditions: Prior to submission of its bid, and in all events prior to and upon signing the Contract, the Contractor certifies, warrants and guarantees that it has visited, carefully reviewed, evaluated, and become familiar with all aspects of the site and local conditions at which the Project is to be constructed. The Contractor agrees that the Contract Documents are an adequate, consistent, coordinated, and sufficient representation of the site and local conditions for the Work.

3.2.7.1. The Contractor has reviewed and become familiar with all aspects with the Site Survey and Geotechnical Report for the Project and has a full understanding of the information provided therein.

3.2.7.2. If the Work involves modifications, renovations, or remodeling of an existing structure(s) or other man-made feature(s), the Contractor certifies, warrants and guarantees that it has reviewed, evaluated, and become familiar with all available as-built and record drawings, plans and specifications, and has thoroughly inspected and become familiar with the structure(s) or man-made feature(s).

3.2.7.3. Any and all claims resulting from the Contractor's failure, including those of any subcontractor or supplier, to visit, carefully review, evaluate, and become familiar with all aspects of the site, available geotechnical information, and local conditions at which the Project is to be constructed shall be deemed void and waived by the Contractor.

3.3. SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1. The Contractor shall supervise and direct the Work using the Contractor's best skill and attention recognizing that time and quality are of the essence of the Work. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. It is the responsibility of and incumbent upon the Contractor to ensure, confirm, coordinate, inspect and oversee all Work (which is inclusive of but not limited to all submittals, change orders, schedules, workmanship, and appropriate staffing with enough competent and qualified personnel) so that the Work is not impacted in terms of any delays, costs, damages, or additional time, or effort on the part Architect/Engineer or Owner. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect/Engineer and shall not proceed with that portion of the Work without further written instructions from the Architect/Engineer. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Architect/Engineer or Owner as appropriate shall be solely responsible for any resulting loss or damage. The Contractor will be required to: review any specified construction or installation procedure; advise the Architect/Engineer if the specified procedure deviates from good construction practice; to advise the Architect/Engineer if following the procedure will affect any warranties, including the Contractor's general warranty, or of any objections the Contractor may have to the procedure and shall propose any alternative procedure which the Contractor will warrant and guarantee. The Contractor is required to: review any specified construction or installation procedure; advise the Architect/Engineer if the specified procedure deviates from good construction practice; to advise the Architect/Engineer if following the procedure will affect any warranties, including the Contractor's general warranty, or of any objections the Contractor may have to the procedure and to propose any alternative procedure which the Contractor will warrant.

3.3.2. The Contractor shall furnish management, supervision, coordination, labor and services that: (1) expeditiously, economically, and properly completes the Work; (2) comply with all requirements of the Contract Documents; and, (3) are performed in a quality workmanlike manner and in accordance with the standards currently practiced by persons and entities performing or providing comparable management, supervision, labor and services on projects of similar size, complexity, cost, and nature to this Project. However, the standards currently practiced within the construction industry shall not relieve the Contractor of the responsibility to perform the Work to the level of quality, detail, and excellence defined and intended by the Contract Documents as interpreted by the Architect/Engineer.

3.3.3. All services and labor rendered by the Contractor, including any subcontractors or suppliers, shall be performed under the immediate supervision at the site of persons possessing expertise and the requisite knowledge in the discipline or trade of service being rendered. The Contractor shall maintain such

supervision and personnel at all times that the Contractor's personnel, subcontractors, and/or suppliers are at the site. The Contractor shall never be absent from the site during performance of any portion of the Work by any entity under the supervision and direction of the Contractor. Full time attendance by the Contractor from Notice to Proceed through Final Acceptance is an explicit requirement of this Contract.

3.3.4. The Contractor shall be responsible to the Owner for acts, damages, errors, and omissions of the Contractor's employees, subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

3.3.5. The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

3.4. LABOR, WAGES, AND MATERIALS

3.4.1. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, permits, licenses, goods, products, equipment, tools, construction equipment and machinery, water, heat, all utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work in accordance with the Contract Documents, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4.2. The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect/Engineer and in accordance with a Change Order. This opportunity to request substitutions does not negate or waive any requirement for the Contractor to follow a pre-bidding "prior approval" requirement nor obligate the Owner to approve any substitution request.

3.4.3. The Contractor shall enforce strict discipline, appropriate behavior, and good order among the Contractor's employees, subcontractors at every tier and level, and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.4.4. Prevailing Wages and Montana Residents.

3.4.4.1. The Contractor and all subcontractors at any level or tier of the Work shall give preference to the employment of bona fide Montana residents in the performance of the Work and shall pay the standard prevailing rate of wages, including fringe benefits for health and welfare and pension contributions and travel allowance provisions in effect and applicable to the county or locality in which the work is being performed. (18-2-403, MCA)

3.4.4.2. At least 50% of the workers, as defined by the Department of Labor & Industry (DOLI), must be bona fide Montana residents. (18-2-401, 18-2-402, MCA)

3.4.4.3. Indian Employment Preference within the Boundaries of an Indian Reservation. All contractors that are awarded a state agency construction contract within the exterior boundaries of an Indian Reservation shall extend a hiring preference to qualified Indians as provided herein:

3.4.4.3.1. "State agency" means a department, office, board, bureau, commission, agency, or other instrumentality of the executive or judicial branches of the government of this State. "Indian" means a person who is enrolled or who is a lineal descendent of a person enrolled in an enrollment listing of the Bureau of Indian Affairs or in the enrollment listing of a recognized Indian tribe domiciled in the United States.

3.4.4.3.2. Qualified Indians – Employment Criteria: An Indian shall be qualified for employment in a permanent, temporary, or seasonal position if he or she has substantially equal qualifications for any position and resides on the reservation where the construction contract is to be performed.

3.4.4.3.3. Non-Applicability: The Indian Employment Preference Policy does not apply to a project partially funded with federal-aid money from the United States Department of Transportation or when residency preference laws are specifically prohibited by federal law. It does not apply to independent contractors and their employees, student interns, elected officials, or appointed positions.

3.4.4.4. The Commissioner of The Montana Department of Labor and Industry (DOLI) has established the standard prevailing rate of wages in accordance with 18-2-401 and 18-2-402, MCA. A copy of the Rates entitled "State of Montana, Prevailing Wage Rates" are bound herein. The Commissioner of the Montana DOLI has established the resident requirements in accordance with 18-2-409, MCA. The Contractor and all subcontractors at any level or tier of the Work shall direct any and all questions concerning prevailing wage and Montana resident issues for all aspects of the Work to DOLI.

3.4.4.5. The Contractor and all subcontractors at any tier or level of the Work, and as determined by the Montana DOLI, shall classify all workers in the project in accordance with the State of Montana, Prevailing Wage Rates. In the event the Contractor is unable to classify a worker in accordance with these rates he shall contact DOLI for a determination of the classification and the prevailing wage rate to be paid.

3.4.4.6. The Contractor and all subcontractors at any tier or level of the Work shall be responsible for obtaining wage rates for all workers prior to their performing any work on the project. The Contractor is required to pay and insure that its subcontractors at any tier or level and others also pay the prevailing wage determined by the DOLI, insofar as required by Title 18 of the MCA and the pertinent rules and standards of DOLI.

3.4.4.7. It is not the responsibility of the Owner to determine who classifies as a subcontractor, sub-subcontractor, material man, supplier, or any other person involved in any aspect of the Work at any tier or level. All such determinations shall be the sole responsibility of the Contractor, subcontractors, sub-subcontractors, material men, suppliers and others involved in the project at any tier or level. The Contractor, subcontractors, sub-subcontractors, material men, suppliers and others involved in the project shall indemnify and hold harmless the Owner from all claims, attorneys' fees, damages and/or awards involving prevailing wage or Montana resident issues. Any changes to wages or penalties for failure to pay the correct wages will be the sole responsibility of the Contractor and/or his subcontractors and no further charges or claims shall be made to the Owner. If the parties mutually agree or an arbitrator or court determines that any change in wages is due and any part is attributable to the Owner, the Owner's sole liability shall be for the amount of wages ordered only and not for other expenses, charges, penalties, overhead, profit or other mark-ups.

3.4.4.8. In accordance with 18-2-422(1) MCA, each job classification's standard prevailing wage rate, including fringe benefits, that the contractors and employers shall pay during construction of the project is included herein by both reference to DOLI's "Building" or 'Heavy/Highway" schedules and as part of these Contract Documents.

3.4.4.9. The Contractor and every employer, including all subcontractors at any tier or level, is required by 18-2-422(2) MCA to maintain payroll records in a manner readily capable of being certified for submission under 18-2-423 MCA, for a period of not less than 3 years after the contractor's, subcontractor's, or employer's completion of work on the project or the Final Acceptance by the Owner, whichever is later.

3.4.4.10. Each contractor is required by 18-2-422(3) MCA to post in a visible and accessible location a statement of all wages and fringe benefits in compliance with 18-2-423.

3.5. WARRANTY AND GUARANTEE

3.5.1. The Contractor warrants to the Owner and Architect/Engineer that materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective and rejected. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.5.2. The Contractor shall and does hereby warrant and guarantee all work, workmanship, and materials for the full warranty period as specified in the Contract Documents. The warranty period shall be defined as commencing with Substantial Completion (or with each Substantial Completion if there is more than one) of the Project, or any portion thereof, and continuing for one (1) calendar year from the date of Final Acceptance of the entire project by the Owner. The date of Final Acceptance shall be the date of the Architect/Engineer's signature on the final request for payment unless otherwise agreed upon in writing for the entire project or any portion thereof, by the Owner, Architect/Engineer and Contractor.

3.5.3. In addition to the one (1) calendar year warranty and guarantee specified in this herein above, the Contractor warrants and guarantees all materials and workmanship for the roofing system for a period of two (2) calendar years from the date of Final Acceptance. This warranty shall cover all labor and materials for roof and roofing finish systems (e.g. flashing, terminations, parapet caps, etc.) repairs from moisture penetration and/or defects in workmanship.

3.5.4. Manufacturer and product warranties and guarantees, as provided by the manufacturer or as specified in the Contract Documents, are in addition to the Contractor's warranty.

3.6. TAXES

3.6.1. The Contractor is responsible for and shall pay all sales, consumer, use, and similar taxes for the Work provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

3.6.2. In compliance with 15-50-206 MCA, the Contractor will have 1% of his gross receipts withheld by the Owner from all payments due and sent to the Montana Department of Revenue. Each subcontractor who performs work greater than $5,000 shall have 1% of its gross receipts withheld by the Contractor and sent to the Montana Department of Revenue. The Contractor shall notify the Department of Revenue on the Department's prescribed form.

3.7. PERMITS, FEES, AND NOTICES

3.7.1. Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract, including but not limited to, the building permit fee, electrical, plumbing, sewer connection fee and mechanical permit fee, and any required impact fees and which are legally required when bids are received or negotiations concluded.

3.7.2. The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work.

3.7.3. If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations, and does so without providing notice to the Architect/Engineer and Owner, the Contractor shall assume responsibility for such Work and shall bear the costs attributable to correction. The Contractor shall be solely responsible to insure that all work it performs is in full compliance with all prevailing and applicable codes and regulations.

3.7.4. Incident Reporting: The Contractor shall immediately notify the Owner and Architect/Engineer, both orally and in writing, of the nature and details of all incidents which may adversely affect the quality or progress of the Work, including, but not limited to, union disputes, accidents, delays, damages to Work, and other significant occurrences. Such notices are in addition to any other notices required regarding claims.

3.8. ALLOWANCES

3.8.1. The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

3.8.2. Unless otherwise provided in the Contract Documents:

3.8.2.1. allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

3.8.2.2. Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included by the Contractor in the Contract Sum but not in the allowances;

3.8.2.3. whenever costs are more than or less than stated allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect: (1) the difference between actual costs and the allowances under Clause 3.8.2.1; and, (2) changes in Contractor's costs under Clause 3.8.2.2.

3.8.3. Materials and equipment under an allowance shall be selected by the Owner.

3.9. CONTRACTOR'S PERSONNEL

3.9.1. The Contractor shall employ competent personnel, supervisors, project managers, project engineers, project superintendent, and all others who shall be assigned to the Work throughout its duration. Contractor's personnel extend to those employed by the Contractor whether at the site or not. The Owner shall have right to review and approve or reject all replacement of Contractor's personnel. All personnel assigned by the Contractor to the Work shall possess the requisite experience, skills, abilities, knowledge, and integrity to perform the Work.

3.9.2. The superintendent and others as assigned shall be in attendance at the Project site during the performance of any and all Work. The superintendent shall represent the Contractor. All communications given to the Contractor's personnel such as the project manager or the superintendent, whether verbal, electronic or written, shall be as binding as if given to the Contractor.

3.9.3. It is the Contractor's responsibility to appropriately staff, manage, supervise and direct the Work which is inclusive of the performance, acts, and actions of his personnel and subcontractors. As such, the Contractor further agrees to indemnify and hold harmless the Owner and the Architect/Engineer, and to protect and defend both from and against all claims, attorneys' fees, demands, causes of action of any kind or character, including the cost of defense thereof, arising in favor of or against the Owner, Architect/Engineer, Contractor, their agents, employees, or any third parties on account of the performance, behavior, acts or actions of the Contractor's personnel or subcontractors.

3.9.4. Prior to the commencement of any work, the Contractor shall prepare and submit a personnel listing and organizational chart in a format acceptable to the Owner which lists by name, phone number (including cell phone), job category, and responsibility the Contractor's key/primary personnel who will work on the Project. The Contractor shall promptly inform the Owner in writing of any proposed replacements, the reasons therefore, and the name and qualifications of any proposed replacements. The Owner shall have the right to reject any proposed replacements without cost or claim being made by the Contractor. The chart shall be provided to the Owner at the time of the pre-construction conference.

3.9.5. The Contractor shall immediately remove for the duration of the Project, any person making an inappropriate racial, sexual, or ethnic comment, statement, joke, or gesture toward any other individual.

3.9.6. The Contractor shall immediately remove for the duration of the Project, any person who is incompetent, careless, disruptive, or not working in harmony with others.

3.10. CONSTRUCTION SCHEDULES

3.10.1. The Contractor shall, promptly after being awarded the Contract, prepare and submit for the Owner's and Architect/Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and per the requirements of the Contract Documents, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The Contractor's schedule shall be in the "Critical Path Method" and shall show the Critical Path of the Work in sufficient detail to evaluate the Contractor's progress. A request for time extension by the Contractor will not be allowed unless a change in the Work

is approved by the Owner and materially affects the Critical Path. It is the Contractor's responsibility to demonstrate that any time extensions requests materially affect the Critical Path.

3.10.2. The Contractor shall prepare and keep current, for the Architect/Engineer's approval, a schedule of submittals which is coordinated with the Contractor's Construction Schedule and allows the Architect/Engineer reasonable time to review submittals.

3.10.3. The Contractor shall perform the Work in accordance with the most recent schedule submitted to the Owner and Architect/Engineer.

3.10.4. The Contractor's operations (including but not limited to the Contractor's forces employed, sequences of operations, and methods of operation) at all times during the performance of the contract shall be: (a) subject to the review of the Owner or the Architect/Engineer; and, (b) sufficient to insure the completion of the Work within the specified performance period.

3.10.5. The Critical Path Method Construction Schedule prepared by the Contractor must be in a form that is acceptable to both the Architect/Engineer and the Owner.

3.10.5.1. The Schedule shall show the estimated progress of the entire Project through the individual time periods allowed for completion of each discipline, trade, phase, section, and aspect of the Work. The Contractor shall provide written reports of all logic and resource loading data with the Schedule and with all updates to the Schedule.

3.10.5.2. The Schedule shall show percent complete, progress to date, project work, and projected time to complete the work for all activities. The percent complete and minor schedule changes, including additions of activities, change orders, construction change directives, changes to sequences of activities and significant changes in activity demands must be shown by a revised Schedule. A written report providing details about the changes and what actions are anticipated to get the work completed in the contractual time period shall be submitted with the revised schedule.

3.10.5.3. The Construction Schedule shall include coordinate dates for performance of all divisions of the Work, including shipping and delivery, off-site requirements and tasks, so the Work can be completed in a timely and orderly fashion consistent with the required dates of Substantial Completion and Final Acceptance.

3.10.5.4. The Construction Schedule shall include: (i) the required commencement date, the required dates of Substantial Completion(s) and Final Acceptance for the complete Project and all phases (if any); (ii) any guideline and milestone dates required by the Owner or the Contract Documents; (iii) subcontractor and supplier schedules; (iv) a submittal schedule which allows sufficient time for review and action by the Architect/Engineer; (v) the complete sequence of all construction activities with start and completion dates; and, (vi) required decision dates.

3.10.5.5. By receiving, reviewing, and/or commenting on the Construction Schedule or any portion thereof (including logic and resource loading), neither the Owner or Architect/Engineer assume any of the Contractor's responsibility or liability that the Schedule be coordinated or complete, or for timely and orderly completion of the Work.

3.10.5.6. Receiving, reviewing, and/or commenting on the Schedule, any portion thereof, or any revision thereof, does not constitute an approval, acknowledgement, or acceptance of any duration, dates, milestones, or performance indicated therein.

3.10.5.7. A printout of the Schedule's logic showing all activities and all resource loading is required with the Schedule and with all updates to the Schedule.

3.10.6. The Contractor shall review and compare, at a minimum on a weekly basis, the actual status of the Work against its Construction Schedule.

3.10.7. The Contractor shall routinely, frequently, and periodically (but not less than monthly) update and/or revise its Construction Schedule to show actual progress of the Work through the date of the update or

revision, projected level of completion of each remaining activity, activities modified since the previous update or revision, and major changes in scope or logic. The updated/revised Schedule shall be accompanied by a narrative report which: (1) states and explains any modifications of the critical path, if any, including any changes in logic; (2) defines problem areas and lists areas of anticipated delays; (3) explains the anticipated impact the change in the critical path or problems and delays will have on the entire Schedule and the completion of the Work; (4) provides corrective action taken or proposed; and, (5) states how problems or delays will be resolved in order to deliver the Work by the required phasing milestones (if any), Substantial Completion(s), and Final Acceptance dates.

3.10.8. Delay in Performance: If at any time the Contractor anticipates that performance of the Work will be delayed or has been delayed, the Contractor shall: (1) immediately notify the Architect/Engineer by separate and distinct correspondence of the probable cause and effect of the delay, and possible alternatives to minimize the delay; and, (2) take all corrective action reasonably necessary to deliver the Work by the required dates. Nothing in this paragraph or the Contract Documents shall be construed by the Contractor as a granting by the Architect/Engineer or Owner of constructive acceleration. The results of failure to anticipate delays, or to timely notify the Owner and Architect/Engineer of an anticipated or real delay, are entirely the responsibility of the Contractor whether compensable or not.

3.10.9. Early Completion: The Contractor may attempt to achieve Substantial Completion(s) on or before the date(s) required in the Contract. However, such early completion shall be for the Contractor's sole convenience and shall not create any real or implied additional rights to Contractor or impose any additional obligations on the Owner or Architect/Engineer. The Owner will not be liable for nor pay any additional compensation of any kind to the Contractor for achieving Substantial Completion(s) or Final Acceptance prior to the required dates as set forth in the Contract. The Owner will not be liable for nor pay any additional compensation of any kind should there by any cause whatsoever that the Contractor is not able to achieve Substantial Completion(s) earlier than the contractually required dates of Substantial Completion(s) or Final Acceptance.

3.10.10. Float in Schedule. Any and all float time in the Contractor's schedule, regardless of the path or activity, shall accrue to the benefit of the Owner and the Work, and not to the Contractor. Float also includes any difference shown between any early completion dates shown on the Contractor's Schedule for any phasing milestone(s), Substantial Completion(s) or Final Acceptance and the dates or durations as required by the Contract Documents.

3.10.11. Modification of Required Substantial Completion(s) or Final Acceptance Dates: Modification of the required dates shall be accomplished only by duly authorized, accepted, and approved change orders stating the new date(s) with specificity on the change order form. All rights, duties, and obligations, including but not limited to the Contractor's liability for actual, delay, and/or liquidated damages, shall be determined in relation to the date(s) as modified.

3.11. DOCUMENTATION AND AS-BUILT CONDITIONS AT THE SITE

3.11.1. The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and accurately marked to record current field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect/Engineer or Owner at any time and shall be delivered to the Architect/Engineer for submittal to the Owner upon completion of the Work.

3.11.2. The Owner shall not be required to process final payment until all documentation and data required by the Contract Documents is submitted to and approved by the Architect/Engineer including, but not limited to, the As-Built Drawings. The Owner will not process any final request for payment until the Architect/Engineer has received and verified that the Contractor has performed the requirements pertaining to the as-built drawings.

3.11.3. The as-built drawings shall be neatly and clearly marked during construction to record all deviations, variations, changes, and alterations as they occur during construction along with such supplementary notes and details necessary to clearly and accurately represent the as-built condition. The as-built drawings shall be available at all times to the Owner, Architect/Engineer and Architect/Engineer's consultants.

3.12. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.1. Definitions:

3.12.1.1. Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

3.12.1.2. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

3.12.1.3. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

3.12.2. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Architect/Engineer is subject to the limitations of Subparagraph 4.2.7. Informational submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.

3.12.3. The Contractor shall review, approve, and submit to the Architect/Engineer, Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents within sixty (60) calendar days of being issued the Notice To Proceed unless noted otherwise and shall do so in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Any and all items submitted by the Contractor which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor, or in the opinion of the Architect/Engineer, have not been reviewed for compliance by the Contractor even if marked as such, may be returned by the Architect/Engineer without action and shall not result in any accusation or claim for delay or cost by the Contractor. Any submittal that, in the opinion of the Architect/Engineer, is incomplete in any area or detail may be rejected and returned to the Contractor. It is the responsibility of and incumbent upon the Contractor to ensure and confirm that all submittals are complete, accurate, and in conformance to the Contract Documents prior to submission.

3.12.4. By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents and guarantees to the Architect/Engineer and Owner that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

3.12.5. The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect/Engineer. Should the Contractor, Subcontractors or Sub-subcontractors install, construct, erect or perform any portion of the Work without approval of any requisite submittal, the Contractor shall bear the costs, responsibility, and delay for removal, replacement, and/or correction of any and all items, material, and /or labor.

3.12.6. The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and: (1) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work; or, (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect/Engineer's approval thereof.

3.12.7. The Contractor shall direct specific attention, in writing or on re-submitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect/Engineer on previous submittals. In the absence of such written notice the Architect/Engineer's approval of a re-submission shall not apply to such revisions.

3.12.8. The Contractor shall not be required to provide professional services which constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect/Engineer will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect/Engineer. The Owner and the Architect/Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and Architect/Engineer have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this subparagraph, the Architect/Engineer will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents but shall be responsible and held liable for review and verification of all performance or design criteria as required by Paragraph 3.2.

3.12.9. Unless noted otherwise in the Contract Documents, the Contractor shall submit to the Architect/Engineer within sixty (60) days from the date of the Notice To Proceed a minimum of six (6) complete copies of all shop/setting drawings, schedules, cut sheets, products, product data, and samples required for the complete Work. Copies shall be reviewed, marked, stamped and approved on each and every copy by the Contractor prior to submission to the Architect/Engineer or they shall be returned without review or action. The Architect/Engineer shall review with reasonable promptness, making corrections, rejections, or other actions as appropriate. The Architect/Engineer's approval or actions on shop/setting drawings, schedules, cut sheets, products, product data, or samples shall not relieve the Contractor from responsibility for, nor deviating from, the requirements of the plans and specifications. Any deviations from the plans and specifications requested or made by the Contractor shall be brought promptly to the attention of the Architect/Engineer.

3.12.10. Cost for Re-Submissions: the Contractor is responsible for ensuring that all shop drawings, product data, samples, and submittals contain all information required by the Contract Documents to allow the Architect/Engineer to take action. The Contractor shall pay the Architect/Engineer's cost for any re-submission of any rejected item. Such costs shall be deducted from the contract sum by Change Order. The Contractor agrees that any action taken by the Architect/Engineer is solely in the Architect/Engineer's discretion and is non-negotiable for the purposes of the Architect/Engineer's cost recovery for multiple (i.e. more than one) review.

3.13. USE OF SITE

3.13.1. The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

3.13.2. The Contractor shall not damage, endanger, compromise or destroy any part of the Project or the site, including but not limited to work performed by others, monuments, stakes, bench marks, survey points, utilities, existing features or structures. The Contractor shall be fully and exclusively responsible for and bare all costs and delays (including and costs of delay) for any damage, endangerment, compromise, or destruction of any part of the Project or site.

3.14. CUTTING AND PATCHING

3.14.1. The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.14.2. The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

3.15. CLEAN UP AND SITE CONTROL

3.15.1. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract during performance of the Work and at the direction of the Owner or Architect/Engineer. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.15.2. If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.16. ACCESS TO WORK

3.16.1. The Contractor shall provide the Owner and Architect/Engineer access to the Work at all times wherever located.

3.17. ROYALTIES, PATENTS AND COPYRIGHTS

3.17.1. The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect/Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect/Engineer. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect/Engineer.

3.18. INDEMNIFICATION

3.18.1. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph. The Contractor agrees that it will defend, protect, indemnify and save harmless the State of Montana and the Owner against and from all claims, liabilities, demands, causes of action, judgments (including costs and reasonable attorneys' fees), and losses from any cause whatever (including patent, trademark and copyright infringement) except the Owner's sole or partial negligence. This includes any suits, claims, actions, losses, costs, damages of any kind, including the State and Owner's legal expenses, arising out of, in connection with, or incidental to the Contract, but does not include any such suits, claims, actions, losses, costs or damages which are the result of the negligent acts, actions, losses, costs, or damages which are acts, omissions or misconduct of the Owner if they do not arise out of, depend upon or relate to a negligent act, omission or misconduct of the Contractor in whole or in part.

3.18.2. In claims against any person or entity indemnified under this Paragraph 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Subparagraph 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

4. ARTICLE 4 – ADMINISTRATION OF THE CONSTRUCTION CONTRACT

4.1. THE ARCHITECT/ENGINEER

4.1.1. The Architect/Engineer is the person lawfully licensed to practice or an entity lawfully practicing identified as such in the Agreement with the Owner and is referred to throughout the Contract Documents as if singular in number. The term "Architect/Engineer" means the Architect/Engineer's duly authorized representative.

4.1.2. Duties, responsibilities and limitations of authority of the Architect/Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner.

4.1.3. If the employment of the Architect/Engineer is terminated, the Owner shall employ a new Architect/Engineer at the sole choice and discretion of the Owner, whose status under the Contract Documents shall be that of the former Architect/Engineer.

4.2. ARCHITECT/ENGINEER'S ADMINISTRATION OF THE CONSTRUCTION CONTRACT

4.2.1. The Architect/Engineer will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative throughout the complete duration of the Project, including the warranty period. The Architect/Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with the Architect/Engineer Contract.

4.2.2. The Architect/Engineer, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations to: (1) become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed; (2) endeavor to guard the Owner against defects and deficiencies in the Work; and, (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Owner and Architect/Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Contractor's Work. The Owner and Architect/Engineer will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, for the safety of any person involved in the work, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

4.2.3. The Architect/Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect/Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

4.2.4. Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect/Engineer about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor to the Architect/Engineer. Communications by and with separate contractors shall be through the Owner to the Architect/Engineer.

4.2.5. Based on the Architect/Engineer's evaluations of the Contractor's Applications for Payment, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts. The Contractor is fully aware that the Owner (i.e. the State of Montana) has established a billing cycle for processing payments in Article 9 of these General Conditions. The

Contractor and all Subcontractors are subject to all provisions of Title 28, Chapter 2, Part 21 MCA regarding all aspects of the Work.

4.2.6. The Architect/Engineer will have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect/Engineer considers it necessary or advisable, the Architect/Engineer will have authority to require inspection or testing of the Work in accordance with the General Conditions and any applicable technical specification requirements, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect/Engineer nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect/Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

4.2.7. The Architect/Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect/Engineer's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Architect/Engineer's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs 3.3, 3.5 and 3.12. The Architect/Engineer's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8. The Architect/Engineer will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph 7.4.

4.2.9. The Architect/Engineer will conduct inspections to determine the date or dates of Substantial Completion(s) and the date of Final Acceptance, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10. If the Owner and Architect/Engineer agree, the Architect/Engineer will provide one or more project representatives to assist in carrying out the Architect/Engineer's responsibilities. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in the Owner’s Agreement with the Architect/Engineer.

4.2.11. The Architect/Engineer will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the Owner or Contractor. The Architect/Engineer's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Architect/Engineer shall be furnished in compliance with this Paragraph 4.2, then delay shall not be recognized on account of failure by the Architect/Engineer to furnish such interpretations until 15 days after written request is made for them.

4.2.12. Interpretations and decisions of the Architect/Engineer will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Architect/Engineer will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will render such interpretations and decisions in good faith.

4.2.13. The Architect/Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

4.2.14. The Architect/Engineer's or Owner's observations or inspections do not alleviate any responsibility on the part of the Contractor. The Architect/Engineer and the Owner reserves the right to observe and inspection the work and make comment. Action or lack of action following observation or inspection is not to be construed as approval of Contractor's performance.

4.3. CLAIMS AND DISPUTES

4.3.1. Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extensions of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes, controversies, and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest solely with the party making the Claim.

4.3.1.1. Time Limits on Claims. Claims by either party must be initiated within 21 calendar days after occurrence of the event giving rise to such claim. The following shall apply to the initiation of a claim:

4.3.1.1.1. A written notice of a claim must be provided to the Architect/Engineer and the other party within 21 calendar days after the occurrence of the event or the claim is waived by the claiming party and void in its entirety.

4.3.1.1.2. Claims must be initiated by separate, clear, and distinct written notice within the 21 calendar day time frame to the Architect/Engineer and the other party and must contain the notarized statement in Sub-Paragraph 4.3.1.5 when the claim is made by the Contractor. Discussions in any form with the Architect/Engineer or Owner, whether at the site or not, do not constitute initiation of a claim. Notes in project meeting minutes, email correspondence, change order proposals, or any other form of documentation does not constitute initiation of a claim. The written notice must be a separate and distinct correspondence provided in hardcopy to both the Architect/Engineer and Owner and must delineate the specific event and outline the causes and reasons for the claim whether or not cost or time have been fully determined. Written remarks or notes of a generic nature are invalid in their entirety. Comments made at progress meetings, project site visits, inspections, emails, voice mails, and other such communications do not meet the requirement of providing notice of claim.

4.3.1.1.3. Physical Injury or Physical Damage. Should the Owner or Contractor suffer physical injury or physical damage to person or property because of any error, omission, or act of the other party or others for whose acts the other party is legally and contractually liable, claim will be made in writing to the other party within a reasonable time of the first observance of such physical injury or physical damage but in no case beyond 30 calendar days of the first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. The provisions of this paragraph shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose. In all such cases, the indemnification provisions of the Contract shall be effectual and the Contractor’s insurance shall be primary and in full effect.

4.3.1.2. All Claims must contain sufficient justification and substantiation with the written notice or they may be rejected without consideration by the Architect/Engineer or other party with no additional impact or consequence to the Contract Sum, Contract Time, or matter(s) in question in the Claim.

4.3.1.3. If additional compensation is claimed, the exact amount claimed and a breakdown of that amount into the following categories shall be provided with each and every claim:

4.3.1.3.1. Direct costs (as listed in Subparagraph 7.3.9.1 through 7.3.9.5);
4.3.1.3.2. Indirect costs (as defined in Paragraph 7.2.5); and,
4.3.1.3.3. Consequential items (i.e. time extensions, credits, logic, reasonableness, impacts, disruptions, dilution) for the change.

4.3.1.4. If additional time is claimed the following shall be provided with each and every claim:

4.3.1.4.1. The specific number of days and specific dates for which the additional time is sought;

4.3.1.4.2. The specific reasons, causes, and/or effects whereby the Contractor believes that additional time should be granted; and,

4.3.1.4.3. The Contractor shall provide analyses, documentation, and justification of its claim for additional time in accordance with the latest Critical Path Method schedule in use at the time of event giving rise to the claim.

4.3.1.5. With each and every claim, the Contractor shall submit to the Architect/Engineer and Owner a notarized statement containing the following language:

"Under penalty of law (including perjury and/or false/fraudulent claims against the State), the undersigned,

_____, _____
(Name) (Title)

Of _____ _____
(Company) (Date)

hereby certifies, warrants, and guarantees that this claim made for Work on this Contract is a true statement of the costs, adjustments and/or time sought and is fully documented and supported under the contract between the parties.

_____, _____
(Signature) (Date)"

4.3.2. Continuing Contract Performance.

4.3.2.1. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph 9.7.1 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents on the portion of the Work not involved in a Claim.

4.3.3. Claims for Cost or Time for Concealed or Unknown Conditions.

4.3.3.1. If conditions are encountered at the site which are: (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents; or, (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed.

4.3.3.2. The Architect/Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect/Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect/Engineer shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the date of the Architect/Engineer's decision.

4.3.3.3. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect/Engineer for initial determination, subject to further proceedings pursuant to Paragraph 4.4.

4.3.3.4. Nothing in this paragraph shall relieve the Contactor of its obligation to adequately and sufficiently investigate, research, and examine the site, the site survey, topographical information, and the geotechnical information available whether included by reference or fully incorporated in the Contract Documents.

4.3.4. Claims for Additional Cost.

4.3.4.1. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph 10.6.

4.3.4.2. If the Contractor believes additional cost is involved for reasons including but not limited to: (1) a written interpretation from the Architect/Engineer; (2) an order by the Owner to stop the Work solely for the Owner's convenience or where the Contractor was not at least partially at fault; (3) a written order for a minor change in the Work issued by the Architect/Engineer; (4) failure of payment by the Owner per the terms of the Contract; (5) termination of the Contract by the Owner; or, (6) other reasonable grounds, Claim must be filed in accordance with this Paragraph 4.3.

4.3.5. Claims for Additional Time

4.3.5.1. If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as specified in these General Conditions shall be provided along with the notarized certification. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay for the same event or cause only one Claim is necessary. However, separate and distinct written notice is required for each separate event.

4.3.5.2. Weather Delays:

4.3.5.2.1. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction activities.

4.3.5.2.2. Inclement or adverse weather shall not be a prima facie reason for the granting of an extension of time, and the Contractor shall make every effort to continue work under prevailing conditions. The Owner may grant an extension of time if an unavoidable delay occurs as a result of inclement/severe/adverse weather and such shall then be classified as a "Delay Day". Any and all delay days granted by the Owner are and shall be non-compensable in any manner or form. The Contractor shall comply with the notice requirements concerning instances of inclement/severe/adverse weather before the Owner will consider a time extension. Each day of inclement/severe/adverse weather shall be considered a separate instance or event and as such, shall be subject to the notice requirements.

4.3.5.2.3. An "inclement", "severe", or "adverse" weather delay day is defined as a day on which the Contractor is prevented by weather or conditions caused by weather resulting immediately there from, which directly impact the current controlling critical-path operation or operations, and which prevent the Contractor from proceeding with at least 75% of the normal labor and equipment force engaged on such critical path operation or operations for at least 60% of the total daily time being currently spent on the controlling operation or operations.

4.3.5.2.4. The Contractor shall consider normal/typical/seasonal weather days and conditions caused by normal/typical/seasonal weather days for the location of the Work in the planning and scheduling of the Work to ensure completion within the Contract Time. No time extensions will be granted for the Contractor's failure to consider and account for such weather days and conditions caused by such weather for the Contract Time in which the Work is to be accomplished.

4.3.5.2.5. A “normal”, “typical”, or “seasonal” weather day shall be defined as weather that can be reasonably anticipated to occur at the location of the Work for each particular month involved in the Contract Time. Each month involved shall not be considered individually as it relates to claims for additional time due to inclement/adverse/severe weather but shall consider the entire Contract Time as it compares to normal/typical/seasonal weather that is reasonably anticipated to occur. Normal/typical/seasonal weather days shall be based upon U.S. National Weather Service climatic data for the location of the Work or the nearest location where such data is available.

4.3.5.2.6. The Contractor is solely responsible to document, prepare and present all data and justification for claiming a weather delay day. Any and all claims for weather delay days shall be tied directly to the current critical-path operation or operations on the day of the instance or event which shall be delineated and described on the Critical-Path Schedule and shall be provided with any and all claims. The Contractor is solely responsible to indicate and document why the weather delay day(s) claimed are beyond those weather days which are reasonably anticipated to occur for the Contract Time. Incomplete or inaccurate claims, as determined by the Architect/Engineer or Owner, may be returned without consideration or comment.

4.3.5.3. Where the Contractor is prevented from completing any part of the Work with specified durations or phases due to delay beyond the control of both the Owner and the Contractor, an extension of the contract time or phase duration in an equal amount to the time lost due to such delay shall be the Contractor’s sole and exclusive remedy for such delay.

4.3.5.4. Delays attributable to and/or within the control of subcontractors and suppliers are deemed to be within the control of the Contractor.

4.3.5.5. In no event shall the Owner be liable to the Contractor, any subcontractor, any supplier, Contractor’s surety, or any other person or organization, for damages or costs arising out of or resulting from: (1) delays caused by or within the control of the Contractor which include but are not limited to labor issues or labor strikes on the Project, federal, state, or local jurisdiction enforcement actions related directly to the Contractor’s Work (e.g. safety or code violations, etc.); or, (2) delays beyond the control of both parties including but not limited to fires, floods, earthquakes, abnormal weather conditions, acts of God, nationwide material shortages, actions or inaction by utility owners, emergency declarations by federal, state, or local officials enacted in the immediate vicinity of the project, or other contractors performing work for the Owner.

4.3.6. Claims for Consequential Damages

4.3.6.1. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

4.3.6.1.1. damages incurred by the Owner for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and,

4.3.6.1.2. damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, income, and for loss of profit.

4.3.6.2. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this waiver of consequential damages shall be deemed to preclude an award of liquidated or actual damages, when applicable, in accordance with the requirements of the Contract Documents.

4.4. RESOLUTION OF CLAIMS, DISPUTES, AND CONTROVERSIES

4.4.1. Decision of Architect/Engineer. Claims, including those alleging an error or omission by the Architect/Engineer, shall be referred initially to the Architect/Engineer for decision. A decision by the Architect/Engineer shall be required as a condition precedent to mediation, arbitration or litigation of all

Claims between the Contractor and Owner arising prior to the date of Final Acceptance, unless 30 days have passed after the Claim has been referred to the Architect/Engineer with no decision having been rendered by the Architect/Engineer. The Architect/Engineer will not decide disputes between the Contractor and persons or entities other than the Owner. Any Claim arising out of or related to the Contract, except those already waived in Subparagraphs 4.3.6, 7.2.6, 7.3.8, 9.10.4 and 9.10.5 shall, pending compliance with Subparagraph 4.4.5, be subject to mediation, arbitration, or the institution of legal or equitable proceedings. Claims waived in Subparagraphs 4.3.6, 7.2.6, 7.3.8, 9.10.4, and 9.10.5 are deemed settled, resolved, and completed.

4.4.2. The Architect/Engineer will review Claims and within ten (10) days of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party; (2) reject the Claim in whole or in part; (3) approve the Claim; (4) suggest a compromise; or (5) advise the parties that the Architect/Engineer is unable to resolve the Claim if the Architect/Engineer lacks sufficient information to evaluate the merits of the Claim or if the Architect/Engineer concludes that, in the Architect/Engineer's sole discretion, it would be inappropriate for the Architect/Engineer to resolve the Claim.

4.4.3. If the Architect/Engineer requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond within ten (10) days after receipt of such request and shall either provide a response on the requested supporting data, advise the Architect/Engineer when the response or supporting data will be furnished, or advise the Architect/Engineer that no supporting data will be furnished. Upon either no response or receipt of the response or supporting data, the Architect/Engineer will either reject or approve the Claim in whole or in part.

4.4.4. The Architect/Engineer will approve or reject Claims by written decision, which shall state the reasons therefore and which shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect/Engineer shall be final and binding on the parties but subject to mediation and arbitration.

4.4.5. When 30 days have passed upon submission of a Claim without decision or action by the Architect/Engineer, or the Architect/Engineer has rendered a decision or taken any of the actions identified in Subparagraph 4.4.2, a demand for arbitration of a Claim covered by such decision or action must be made within 30 days after the date of expiration of Subparagraph 4.4.1 or within 30 days of the Architect/Engineer’s decision or action. Failure to demand arbitration within said 30 day period shall result in the Architect/Engineer's decision becoming final and binding upon the Owner and Contractor whenever such decision is rendered.

4.4.6. If the Architect/Engineer renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but shall not supersede arbitration proceedings unless the decision is acceptable to all parties concerned.

4.4.7. Upon receipt of a Claim against the Contractor or at any time thereafter, the Architect/Engineer or the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Architect/Engineer or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

4.4.8. A Claim subject to or related to liens or bonds shall be governed by applicable law regarding notices, filing deadlines, and resolution of such Claim prior to any resolution of such Claim by the Architect/Engineer, by mediation, or by arbitration, except for claims made by the Owner against the Contractor’s bonds.

4.5. MEDIATION

4.5.1. Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Subparagraphs 4.3.6, 7.2.6, 7.3.8, 9.10.4 and 9.10.5 shall, after initial decision by the Architect/Engineer or 30 days after submission of the Claim to the Architect/Engineer, be subject to mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party.

4.5.2. The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect and/or those rules specified in the contract documents or separately agreed upon between the parties. Construction Industry Mediation Rule M-2 (filing with AAA) is void. The parties shall mutually agree upon a mediator who shall then take the place of AAA in the Construction Industry Mediation Rules. The parties must mutually agree to use AAA and no filing of a request for mediation shall be made to AAA by either party until such mutual agreement has been made. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

4.5.3. The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

4.6. ARBITRATION

4.6.1. Any controversy or Claim arising out of or related to this Contract or the breach thereof shall be settled by arbitration in accordance with the Montana Uniform Arbitration Act (MUAA). To the extent it does not conflict with the MUAA, the Construction Industry Arbitration Rules of the American Arbitration Association shall apply except as modified herein. The parties to the arbitration shall bear their own costs and expenses for participating in the arbitration. Costs of the Arbitration panel shall be borne equally between the parties except those costs awarded by the Arbitration panel (including costs for the arbitration itself).

4.6.2. Prior to the arbitration hearing all parties to the arbitration may conduct discovery subject to the provisions of Montana Rules of Civil Procedure. The arbitration panel may award actual damages incurred if a party fails to provide full disclosure under any discovery request. If a party claims a right of information privilege protected by law, the party must submit that claim to the arbitration panel for a ruling, before failing to provide information requested under discovery or the arbitration panel may award actual damages.

4.6.3. The venue for all arbitration proceedings required by this Contract shall be the seat of the county in which the work occurs or the First Judicial District, Lewis & Clack County, as determined solely by the Owner. Arbitration shall be conducted by a panel comprised of three members with one selected by the Contractor, one selected by the Owner, and one selected by mutual agreement of the Owner and the Contractor.

4.6.4. Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Subparagraphs 4.3.6, 7.2.6, 7.3.8, 9.10.4 and 9.10.5, shall, after decision or action by the Architect/Engineer or 30 days after submission of the Claim to the Architect/Engineer, be subject to arbitration provided a demand for arbitration is made within the time frame provided in Subparagraph 4.4.5. If such demand is not made with the specified time frame, the Architect/Engineer's decision or action is final. Prior to arbitration, the parties shall endeavor to resolve disputes by mediation in accordance with the provisions of Paragraph 4.5.

4.6.5. Claims not resolved by mediation shall be decided by arbitration which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect and/or those rules specified in the Contract Documents or separately agreed upon between the parties. Construction Industry Arbitration Rule R-3 (filing with AAA) is void. The parties shall mutually agree upon an arbitrator or arbitrators who shall then take the place of AAA in the Construction Industry Arbitration Rules. The parties must mutually agree to use AAA and no filing of a demand for arbitration shall be made to AAA by either party until such mutual agreement has been made. The demand for arbitration shall be filed in writing with the other party to the Contract and a copy shall be filed with the Architect/Engineer.

4.6.6. A demand for arbitration shall be made within the time limits specified in Subparagraphs 4.4.5 and in no event shall it be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations as determined pursuant to Paragraph 13.7.

4.6.7. Pending final resolution of a Claim including arbitration, unless otherwise mutually agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract on Work or amounts not in dispute.

4.6.8. **Limitation on Consolidation or Joinder**. Arbitration arising out of or relating to the Contract may include by consolidation or joinder the Architect/Engineer, the Architect/Engineer's employees or consultants, except by written consent containing specific reference to the Agreement and signed by the Architect/Engineer, Owner, Contractor and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the Owner, Architect/Engineer, Contractor, a separate contractor as described in Article 6 and other persons substantially involved in a common question of fact or law whose presence is required if complete relief is to be accorded in arbitration. No person or entity other than the Owner, Architect/Engineer, Contractor or a separate contractor as described in Article 6 shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

4.6.9. **Claims and Timely Assertion of Claims**. The party filing a demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

4.6.10. **Judgment on Final Award**. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. The parties agree that the costs of the arbitrator(s') compensation and expenses shall be borne equally. The parties further agree that the arbitrator(s) shall have authority to award to either party some or all of the costs and expenses involved, including attorney's fees.

5. ARTICLE 5 – SUBCONTRACTORS

5.1. DEFINITIONS

5.1.1. A Subcontractor is a person or entity who has a direct or indirect contract at any tier or level with the Contractor or any Subcontractor to the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

5.2. AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1. Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract and in no instance later than (30) days after award of the Contract, shall furnish in writing to the Owner through the Architect/Engineer the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect/Engineer will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect/Engineer, after due investigation, has reasonable objection to any such proposed person or entity.

5.2.2. The Contractor shall not contract with a proposed person or entity to which the Owner or Architect/Engineer has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

5.2.3. If the Owner or Architect/Engineer has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect/Engineer has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

5.2.4. The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Architect/Engineer makes reasonable objection to such substitute. The Contractor shall not change or substitute for a Subcontractor who was required to be listed on the bid without first getting the approval of the Owner.

5.2.5. Buy-Safe Montana Provision: Before commencement of each subcontractor's portion of the Work, the Contractor shall obtain each subcontractor's incidence rate, experience modification rate, or loss ratio. The Contractor shall endeavor--but is not required--to use subcontractors whose incidence rate is less than the latest average for non-residential building construction for Montana as established by the Federal Bureau of Labor Statistics for the prior year; whose experience modification rating (EMR) is less than 1.0; or whose loss ratio is less than 100%. Contractor shall require any of its subcontractors who, based on the safety information that the Contractor obtains, have greater-than-average incidence rate, an EMR greater than 1.0, or a loss ratio of more than 100%, to schedule and obtain a Comprehensive Safety Consultation from the Montana Department of Labor & Industry, Employment Relations Division, Safety Bureau before substantial completion of each such subcontractor's portion of the Work. For assistance in obtaining the Comprehensive Safety Consultation, the Contractor shall submit subcontractor information to the Montana Department of Labor and Industry, Employment Relations Division, Safety Bureau in those instances where the incident rate, EMR, and/or loss ratio is greater than the limits stated above.

5.3. SUBCONTRACTUAL RELATIONS

5.3.1. By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect/Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect/Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

5.3.2. Upon written request by the Owner, the Contractor shall require its subcontractors to provide to it performance and payment securities for their portion of the Work in the types and form defined in statute (18-2-201 and 18-2-203 MCA) for all sub-contractual agreements.

5.3.3. The Contractor shall prepare a Subcontractors' and Suppliers' chart in CSI division format acceptable to the Owner which lists by name, all contact information, job category, and responsibility the Contractor's Subcontractors (at all tiers or levels) and Suppliers with a pecuniary interest in the Project of greater than $5,000.00. The Contractor shall not enter into any agreement with any subcontractor or supplier to which the Owner raises a timely objection. The Contractor shall promptly inform the Owner in writing of any proposed replacements, the reasons therefore, and the name and qualifications of any proposed replacements. The Owner shall have the right to reject any proposed replacements without cost or claim being made by the Contractor. The chart shall be provided to the Owner at the time of the pre-construction conference but no less than 30 days after award of the Contract.

5.3.4. All Contractors and Subcontractors to this contract must comply with all Montana Department of Labor and Industry requirements, regulations, rules, and statutes.

5.3.5. In accordance with 39-51-1104 MCA, any Contractor who is or becomes an employer under the provisions of Title 39, Chapter 51 of Montana Code Annotated, who contracts with any Subcontractor

who also is or becomes an employer under the provisions of Title 39, Chapter 51 of Montana Code Annotated, shall withhold sufficient money on the contract to guarantee that all taxes, penalties, and interest are paid upon completion of the contract.

5.3.5.1. It is the duty of any Subcontractor who is or becomes an employer under the provisions of Title 39, Chapter 51 of Montana Code Annotated, to furnish the Contractor with a certification issued by the Montana Department of Labor and Industry, prior to final payment stating that said Subcontractor is current and in full compliance with the provisions of Montana Department of Labor and Industry.

5.3.5.2. Failure to comply shall render the Contractor directly liable for all taxes, penalties, and interest due from the Subcontractor, and the Montana Department of Labor and Industry has all of the remedies of collection against the Contractor under the provisions of Title 39, Chapter 51 of Montana Code Annotated, as though the services in question were performed directly for the Contractor.

5.3.6. In compliance with state statutes, the Contractor will have the 1% Gross Receipts Tax withheld from all payments. Each "Public Contractor" includes all Subcontractors with contracts greater than $5,000 each. The Contractor and all Subcontractors will withhold said 1% from payments made to all Subcontractors with contracts greater than $5,000.00 and make it payable to the Montana Department of Revenue. The Contractor and all Subcontractors shall also submit documentation of all contracts greater than $5,000.00 to the Montana Department of Revenue on the Department's prescribed form.

5.3.7. Construction Contractor Registration: All Subcontractors at any tier or level are required to be registered with the Department of Labor and Industry under 39-9-201 and 39-9-204 MCA prior to the Contract being executed by the Owner. Subcontractors shall demonstrate to the Contractor that it has registered or promises that it will register immediately upon notice of award and prior to the commencement of any work.

5.4. CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.1. Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

5.4.1.1. assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and,

5.4.1.2. assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

5.4.2. Upon such assignment, if the Work has been suspended for more than 30 days as a result of the Contractor's default, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension. Such adjustment shall be at the expense of the Contractor.

5.4.3. The Contractor shall engage each of its subcontractors and suppliers with written contracts that preserve and protect the rights of the Owner and include the acknowledgement and agreement of each subcontractor and supplier that the Owner is a third-party beneficiary of their sub-contractual and supplier agreements. The Contractor's agreements shall require that in the event of default by the Contractor or termination of the Contractor, and upon request of the Owner, the Contractor's subcontractors and suppliers will perform services for the Owner.

5.4.4. Construction Contractor Registration: All Subcontractors at any tier or level are required to be registered with the Department of Labor and Industry under 39-9-201 and 39-9-204 MCA prior to the Contract being executed by the Owner. Subcontractors shall demonstrate to the Contractor that it has registered or promises that it will register immediately upon notice of award and prior to the commencement of any work.

6. ARTICLE 6 – CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1. OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph 4.3.

6.1.2. When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

6.1.3. The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

6.1.4. Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

6.2. MUTUAL RESPONSIBILITY

6.2.1. The Contractor shall afford the Owner and separate contractors reasonable opportunity' for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

6.2.2. If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect/Engineer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

6.2.3. The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

6.2.4. The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Paragraph 12.2.

6.2.5. The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Subparagraph 3.14.

6.3. OWNER'S RIGHT TO CLEAN UP

6.3.1. If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste

materials and rubbish, the Owner may clean up and the Architect/Engineer will determine the responsibility of those involved and allocate the cost accordingly.

7. ARTICLE 7 – CHANGES IN THE WORK

7.1. GENERAL

7.1.1. Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive, or order for a minor change in the Work subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents. Minor changes as ordered by the Architect/Engineer has the definition provided in Paragraph 7.4

7.1.2. A Change Order shall be based upon agreement among the Owner, Contractor, and Architect/Engineer; a Construction Change Directive requires agreement by the Owner and Architect/Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect/Engineer alone.

7.1.3. Changes in the Work shall be performed under applicable provisions of the Contract Documents and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

7.1.4. No act, omission, or course of dealing, shall alter the requirement that Change Orders or Construction Change Directives shall be in writing and signed by the Owner, and that Change Orders and Construction Change Directives are the exclusive method for effecting any adjustment to the Contract. The Contractor understands and agrees that neither the Contract Sum nor the Contract Time can be changed by implication, oral agreement, verbal directive, or unsigned Change Order.

7.2. CHANGE ORDERS

7.2.1. A Change Order is a written instrument prepared by the Architect/Engineer and signed by the Owner, Contractor and Architect/Engineer, stating their agreement upon all of the following:

7.2.1.1. change in the Work;

7.2.1.2. the amount of the adjustment, if any, in the Contract Sum; and,

7.2.1.3. the extent of the adjustment, if any, in the Contract Time.

7.2.2. The cost or credit to the Owner resulting from a change in the Work shall be determined as follows:

7.2.2.1. Per the limitations of this Subparagraph, plus a 5% allowance for overhead and a 10% allowance for profit. The allowances for overhead and for profit are limited to the percentages as specified herein unless they are determined to be unreasonable by the Architect/Engineer (not the Contractor) per Subparagraph 7.3.9 for each Change Order or Construction Change Directive; or,

7.2.2.2. By one of the methods in Subparagraph 7.3.4, or as determined by the Architect/Engineer per Subparagraph 7.3.9, plus a 5% allowance for overhead and a 10% allowance for profit. The allowances for overhead and for profit are limited to the percentages as specified herein unless they are determined to be unreasonable by the Architect/Engineer (not the Contractor) per Subparagraph 7.3.9 for each Change Order or Construction Change Directive.

7.2.2.3. The Contractor's proposed increase or decrease in cost shall be limited to costs listed in Subparagraph 7.3.9.1 through 7.3.9.5.

7.2.3. The Contractor shall not submit any Change Order, response to requested cost proposals, or requested changes which are incomplete and do not contain full breakdown and supporting documentation in the following three areas:

7.2.3.1. Direct costs (only those listed in Subparagraph 7.3.9.1 through 7.3.9.5 are allowable);

7.2.3.2. Indirect costs (limited as a percentage on each Change Order per Supplementary General Conditions, Paragraph 7.2.2); and

7.2.3.3. Consequential items (e.g. time extensions, credits, logic, reasonableness, impacts, disruptions, dilution).

7.2.4. Any Change Order, responses to requested proposals, or requested changes submitted by the Contractor which, in the opinion of the Architect/Engineer, are incomplete, may be rejected and returned to the Contractor without comment. It is the responsibility of and incumbent upon the Contractor to ensure and confirm that all Change Orders, responses to requested proposals, or requested changes are complete prior to submission.

7.2.5. Overhead, applicable to all areas and sections of the Contract Documents, means "Indirect Costs" as referenced in Subparagraph 7.2.3.2. Indirect costs are inclusive of, but not limited to, the following: home office overhead; off-site supervision; home office project management; change order and/or proposal preparation, design, research, negotiation and associated travel; effects of disruption and dilution of management and supervision off-site; time delays; coordination of trades; postage and shipping; and, effective increase in guarantee and warranty durations. Indirect costs applicable to any and all changes in the work, either through Change Order or Construction Change Directive, are limited to the percentage allowance for overhead in Subparagraph 7.2.2.

7.2.6. By signature on any Change Order, the Contractor certifies that the signed Change Order is complete and includes all direct costs, indirect costs and consequential items (including additional time, if any) and is free and clear of all claims or disputes (including, but not limited to, claims for additional costs, additional time, disruptions, and/or impacts) in favor of the Contractor, subcontractors, material suppliers, or other persons or entities concerning the signed change order and on all previously contracted Work and does release the Owner from such claims or demands.

7.2.7. Any and all changes or adjustments to the Contract Time requested or claimed by the Contractor as a result of a Change Order shall require documentation and justification for the adjustment by a Critical Path Method analysis of the Contractor's most recent Critical Path Schedule in use prior to the change. Changes which affect or concern activities containing float or slack time (i.e. not on the critical path) and which can be accomplished within such float or slack time, shall not result in an increase in the Contract Time.

7.2.8. Supervision means on-site, field supervision and not home office overhead, off-site management or off-site supervision.

7.2.9. Labor means those persons engaged in construction occupations as defined in Montana Prevailing Wage Rates for Building Construction or Heavy/Highway as bound in the Contract Documents and does not include design, engineering, superintendence, management, on-site field supervision, home office or other off-site management, off-site supervision, office or clerical work.

7.3. CONSTRUCTION CHANGE DIRECTIVES

7.3.1. A Construction Change Directive is a written order prepared by the Architect/Engineer directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

7.3.2. Any and all changes or adjustments to the Contract Time requested or claimed by the Contractor as a result of a Construction Change Directive, shall require documentation and justification for the adjustment by a Critical Path Method analysis of the Contractor's most recent Critical Path Schedule in use prior to the change. Changes that affect or concern activities containing float or slack time (i.e. not on the critical path) and which can be accomplished within such float or slack time shall not result in an increase in the Contract Time.

7.3.3. A Construction Change Directive shall be used in the absence of agreement on the terms of a Change Order.

7.3.4. If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

7.3.4.1. mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

7.3.4.2. unit prices stated in the Contract Documents or subsequently agreed upon;

7.3.4.3. cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee;

7.3.4.4. By actual cost as shown by the Contractor's and Subcontractor's itemized invoices; or

7.3.4.5. as provided in Subparagraph 7.3.9.

7.3.5. Costs shall be limited to the following: cost of materials, including cost of delivery; cost of labor, including social security, old age and unemployment insurance and fringe benefits under collective bargaining agreements; workers' compensation insurance; bond premiums; and rental value of power tools and equipment.

7.3.6. Overhead and profit allowances shall be limited on all Construction Change Directives to those identified in 7.2.2.

7.3.7. Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect/Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

7.3.8. A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

7.3.9. If the Contractor does not respond or disagrees with the method for adjustment in the Contract Sum in writing within seven (7) calendar days, the method and the adjustment made shall be determined by the Architect/Engineer on the basis of reasonable expenditures and/or savings of those performing the Work directly attributable to the change including, in the case of an increase in the Contract Sum, plus an allowance for overhead and profit as listed under Subparagraph 7.2.2. In such case, and also under Clause 7.3.4.3, the Contractor shall keep and present, in such form as the Architect/Engineer may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.9 shall be limited to the following:

7.3.9.1. costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance as determined by the Prevailing Wage Schedules referenced in the Contract Documents;

7.3.9.2. costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

7.3.9.3. rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

7.3.9.4. costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

7.3.9.5. additional costs of field supervision and field office personnel directly attributable to the change.

7.3.10. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect/Engineer. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.11. Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Architect/Engineer will make an interim determination for purposes of monthly certification for payment for those costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a claim in accordance with Article 4.

7.3.12. When the Owner and Contractor agree with the determination made by the Architect/Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

7.4. MINOR CHANGES IN THE WORK

7.4.1. The Architect/Engineer will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

8. ARTICLE 8 – TIME

8.1. DEFINITIONS

8.1.1. Time is of the essence in performance, coordination, and completion of the Work contemplated herein. The Owner may suffer damages if the Work is not completed as specified herein. When any duration or time period is referred to in the Contract Documents by days, the first day shall be determined as the day following the current day of any event or notice starting a specified duration.

8.1.2. Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

8.1.3. The date of commencement of the Work is the date established in the NOTICE TO PROCEED AS ISSUED BY THE OWNER.

8.1.4. The date the Contractor reaches Substantial Completion is the date certified by the Architect/Engineer in accordance with Paragraph 9.8.

8.1.5. The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

8.1.6. Liquidated Damages. The Owner may suffer loss if the project is not substantially complete on the date set forth in the contract documents. The Contractor and his surety shall be liable for and shall pay to the Owner the sums hereinafter stipulated as liquidated damages for each calendar day of delay until the work is substantially complete: **See Instructions to Bidders.**

8.1.7. The Contractor shall not be charged liquidated or actual damages when delay in completion of the Work is due to:

8.1.7.1. Any preference, priority or allocation order issued by the government;

8.1.7.2. Unforeseeable cause beyond the control and without the fault or negligence of the Contractor, such as acts of God or of the public enemy, fires, floods, epidemics, quarantine restrictions,

freight embargoes, and unusually severe weather. All such occurrences resulting in delay must be documented and approved by Change Order; or,

8.1.7.3. Any delays of Subcontractors or suppliers occasioned by any of the causes specified in 8.1.7.1 and 8.1.7.2 of this article.

8.1.8. The Contractor is completely obligated and responsible to provide written notice of each day of delay as provided for in Paragraph 4.3.

8.1.9. Contract Time. All work shall reach Substantial Completion by: **See Instructions to Bidders.** The Owner will issue a written NOTICE TO PROCEED and finalized contract.

8.2. PROGRESS AND COMPLETION

8.2.1. Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Contract, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

8.2.2. The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the date on the Notice to Proceed and in no case prior to the effective date of insurance required by Article 11 to be furnished by the Contractor. The date of commencement of the Work shall not be changed by the effective date of such insurance.

8.2.3. The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

8.2.4. If the Contractor falls behind the latest construction schedule by more than 14 calendar days through its own actions or inaction, neglect, inexperience, lack of oversight and management of the Work including that of any Subcontractors, written notice to the Owner and Architect/Engineer shall be provided within three (3) days with explanation of how the Contractor intends to get back on schedule. Response to getting back on schedule consists of providing a sufficient number of qualified workers and/or proper materials or an acceptably reorganized schedule to regain the lost time in a manner acceptable to the Owner.

8.3. DELAYS AND EXTENSIONS OF TIME

8.3.1. If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect/Engineer, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Architect/Engineer determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect/Engineer may determine.

8.3.2. Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.3.

8.3.3. This Paragraph 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

9. PAYMENTS AND COMPLETION

9.1. CONTRACT SUM

9.1.1. The Contract Sum is stated in the Contract and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

9.2. SCHEDULE OF VALUES

9.2.1. Before the first Application for Payment, the Contractor shall submit to the Architect/Engineer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect/Engineer may require. This schedule, unless objected to by the Architect/Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3. APPLICATIONS FOR PAYMENT

9.3.1. The Contractor shall submit to the Architect/Engineer an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be signed and supported by such data substantiating the Contractor's right to payment as the Owner or Architect/Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

9.3.2. NOTICE OF APPROVAL OF PAYMENT REQUEST PROVISION. Per Title 28, Chapter 2, Part 21, this contract allows the Owner to change the number of days to approve a Contractor's payment request. This contract allows the Owner to approve the Contractor's payment request within thirty-five (35) calendar days after it is received by the Owner without being subject to the accrual of interest.

9.3.3. As provided in Subparagraph 7.3.11, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Architect/Engineer, but not yet included in Change Orders.

9.3.4. Applications for payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

9.3.5. Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.6. The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

9.3.7. Until the work is complete, the Owner will pay 95% of the amount due the Contractor on account of progress payments.

9.3.7.1. If the Work and its progress are not in accordance with all or any part, piece, or portion of the Contract Documents, the Owner may, at its sole discretion and without claim by the Contractor, increase the amount held as retainage to whatever level deemed necessary to effectuate performance and progress of the Work, for anticipated repairs, warranties or completion of the Work by the Contractor or through the letting of other contracts. The Contractor will not be entitled to additional costs, expenses, fees, time, and such like, in the event the Owner increases the amount held as retainage due to non-compliance and/or non-performance with all or any part, piece, or portion of the Contract Documents.

9.3.7.2. Prior to the first application for payment, the Contractor shall submit the following information on the appropriate forms:

9.3.7.2.1. Schedule of Amounts for Contract Payment (Form 100): This form shall contain a breakdown of the labor, material and other costs associated with the various

portions of the work and shall be the basis for the progress payments to the Contractor. The use of electronic method shall be in the Owner's format.

9.3.7.2.2. Project/Progress Schedule: If no Schedule (or revised Schedule) is provided with each and every Periodic Estimates for Partial Payment, the Architect/Engineer and/or Owner may return the pay request, or hold it, and may choose not pay for any portion of the Work until the appropriate Schedule, indicating all changes, revisions and updates, is provided. No claim for additional costs or interests will be made by the Contractor or any subcontractor on account of holding or non-payment of the Periodic Estimate for Partial Payment request.

9.3.7.3. Progress Payments

9.3.7.3.1. Periodic Estimates for Partial Payment shall be on a form provided by the Owner (Form 101) and submitted to the Architect/Engineer for payment by the Owner. Payment shall be requested for the labor and material incorporated in the work to date and for materials suitably stored, less the aggregate of previous payments, the retainage, and the 1% gross receipts tax.

9.3.7.3.2. The Contractor, by submission of any partial pay request, certifies that every request for partial payment is correct, true and just in all respects and that payment or credit had not previously been received. The Contractor further warrants and certifies, by submission of any partial pay request, that all previous work for which payment has been received is free and clear of all liens, disputes, claims, security interests, encumbrances, or causes of action of any type or kind in favor of the Contractor, subcontractors, material suppliers or other persons or entities and does release the Owner from such.

9.3.7.3.3. Progress payments do not constitute official acceptance of any portion of the work or materials whether stored on or off-site.

9.3.7.3.4. In compliance with 15-50-206 MCA, the Contractor will have 1% of his gross receipts withheld by the Owner from all payments due. Each subcontractor who performs work greater than $5,000 shall have 1% of its gross receipts withheld by the Contractor. The Contractor shall notify the Department of Revenue on the department's prescribed forms.

9.3.7.4. The Contractor may submit obligations/securities in a form specified in 18-1-301 Montana Code Annotated (MCA) to be held by a Financial Institution in lieu of retainage by the Owner. The Owner will establish the amount that would otherwise be held as retainage. Should the Contractor choose to submit obligations/securities in lieu of retainage, the Owner will require the Financial Institution to execute the Owner's "Account Agreement for Deposit of Obligations Other Than Retainage" (Form 120) prior to submission of any obligations/securities in accordance with 18-1-302 MCA. The Contractor must extend the opportunity to participate in all obligations/securities in lieu of retainage on a pro rata basis to all subcontractors involved in the project and shall be solely responsible for the management and administration of same. The Owner assumes no liability or responsibility from or to the Contractor or Subcontractors regarding the latter's participation.

9.3.7.5. The Contractor shall maintain a monthly billing cycle.

9.4. CERTIFICATES FOR PAYMENT

9.4.1. The Architect/Engineer will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect/Engineer determines is properly due, or notify the Contractor and Owner in writing of the Architect/Engineer's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1. For the purposes of this paragraph regarding certification of payment, electronic mail and/or notes provided through the use of an electronic approval system shall constitute written notice.

9.4.2. The issuance of a Certificate for Payment will constitute a representation by the Architect/Engineer to the Owner, based on the Architect/Engineer's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect/Engineer's knowledge, information and belief, the quality of the Work is in accordance with the

Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect/Engineer. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect/Engineer has: (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences or procedures; (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or, (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.5. DECISIONS TO WITHHOLD CERTIFICATION

9.5.1. The Architect/Engineer may withhold or reject a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect/Engineer's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made. If the Architect/Engineer is unable to certify payment in the amount of the Application, the Architect/Engineer will notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Architect/Engineer cannot agree on a revised amount, the Architect/Engineer will promptly issue a Certificate for Payment for the amount for which the Architect/Engineer is able to make such representations to the Owner. The Architect/Engineer may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect/Engineer's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph 3.3.4, because of:

9.5.1.1. defective Work not remedied;

9.5.1.2. third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

9.5.1.3. failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

9.5.1.4. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

9.5.1.5. damage to the Owner or another contractor;

9.5.1.6. reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or,

9.5.1.7. persistent failure to carry out the Work in accordance with the Contract Documents.

9.5.2. When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.5.3. Owner’s Right to Refuse Payment: The Architect/Engineer’s approval, or partial approval, of the Contractor’s request for payment shall not preclude or prevent the Owner from exercising any of its remedies under this Contract. The Owner shall have right to refuse to make payment(s) to the Contractor due to:

9.5.3.1. the Contractor’s failure to perform the Work in compliance with the Contract Documents;

9.5.3.2. the Contractor’s failure to correct any defective or damaged Work;

9.5.3.3. the Contractor’s failure to accurately represent the Work performed in the pay request;

9.5.3.4. the Contractor's performance of its Work at a rate or in a manner that, in the Owner's opinion, is likely to result in the Work, or any portion thereof, to be delayed;

9.5.3.5. the Contractor's failure to use funds previously paid to it by the Owner to pay for the Contractor's Work-related obligations including, but not limited to, subcontractors and suppliers on this Project;

9.5.3.6. claims made, or anticipated by the Owner to be made, against the Owner or its property;

9.5.3.7. inclusion in the pay request of any amounts in dispute or part of a claim;

9.5.3.8. Damage or loss caused by the Contractor, including its subcontractors and suppliers; or,

9.5.3.9. The Contractor's failure or refusal to perform its obligations to the Owner.

9.6. PROGRESS PAYMENTS

9.6.1. After the Architect/Engineer has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents or the Owner may take any action the Owner deems necessary under Subparagraph 9.5.3.

9.6.2. The Contractor shall promptly pay each Subcontractor in accordance with Title 28, Chapter 2, Part 21, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

9.6.3. The Contractor is prohibited from holding higher amounts in retainage on any Subcontractor than the Owner is holding from the Contractor.

9.6.4. The Architect/Engineer will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect/Engineer and Owner on account of portions of the Work done by such Subcontractor.

9.6.5. Neither the Owner nor Architect/Engineer shall have an obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

9.6.6. Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 9.6.2, 9.6.3, 9.6.4, and 9.6.5.

9.6.7. A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

9.6.8. Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

9.7. FAILURE OF PAYMENT

9.7.1. If the Owner does not approve payment to the Contractor within thirty-five (35) calendar days after the receipt of a certified Application for Payment, then the Contractor may, upon seven additional days' written notice to the Owner and Architect/Engineer, suspend the Work until payment of the amount owing has been received. Nothing in the Subparagraph shall limit the Owner's rights and options as provided in Subparagraph 9.5.3. The Contract Time shall be extended appropriately and the Contract Sum shall be

increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

9.8. SUBSTANTIAL COMPLETION

9.8.1. Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

9.8.2. When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect/Engineer a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.3. Upon receipt of the Contractor's list, the Architect/Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect/Engineer's Inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect/Engineer. In such case, the Contractor shall then submit a request for another inspection by the Architect/Engineer to determine Substantial Completion.

9.8.4. The Contractor shall ensure the project is substantially complete prior to requesting any inspection by the Architect/Engineer so that no more than one (1) inspection is necessary to determine Substantial Completion for all or any portion of the Work. If the Contractor does not perform adequate inspections to develop a comprehensive list as required in Subparagraph 9.8.2 and does not complete or correct such items upon discovery or notification, the Contractor shall be responsible and pay for the costs of the Architect/Engineer's additional inspections to determine Substantial Completion.

9.8.5. When the Work or designated portion thereof is substantially complete, the Architect/Engineer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion and which shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance. After issuance of the Certificate of Substantial Completion, the Contractor shall finish and complete all remaining items within thirty (30) calendar days of the date on the Certificate. The Architect/Engineer shall identify and fix the time for completion of specific items which may be excluded from the thirty (30) calendar day time limit. Failure to complete any items within the specified time frames may be deemed by the Owner as default of the contract on the part of the Contractor.

9.8.6. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety if there are claims or past payment issues, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

9.9. PARTIAL OCCUPANCY OR USE

9.9.1. The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect/Engineer as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably

withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect/Engineer.

9.9.2. Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect/Engineer shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

9.9.3. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

9.10. FINAL COMPLETION AND FINAL PAYMENT

9.10.1. Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect/Engineer will promptly make such inspection and, when the Architect/Engineer finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect/Engineer will approve the Contractor's final Certificate for Payment stating that to the best of the Architect/Engineer's knowledge, information and belief, and on the basis of the Architect/Engineer's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect/Engineer's signature on the Contractor's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.2. Neither final payment nor any remaining retainage shall become due until the Contractor submits to the Architect/Engineer:

9.10.2.1. completed Contractor's Affidavit of Completion, Payment of Debts and Claims, and Release of Liens (Form 106) that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied;

9.10.2.2. a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner;

9.10.2.3. a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents

9.10.2.4. Consent of Surety Company to Final Payment (Form 103); and,

9.10.2.5. if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner.

9.10.3. The Contractor and his surety accepts and assumes responsibility, liability, and costs for and agrees to defend and hold harmless the Owner for and against any and all actions as a result of the Owner making final payment.

9.10.4. By submitting any Application for Payment to the Architect/Engineer the Contractor and his surety certify and declare that all bills for materials, supplies, utilities and for all other things furnished or caused to be furnished by the Contractor and all Subcontractors and used in the execution of the Contract will be fully paid upon receipt of Final Payment and that there are no unpaid obligations, liens, claims, security interests, encumbrances, liabilities and/or demands of State Agencies, subcontractors, suppliers, mechanics, laborers or any others resulting from or arising out of any work done, caused to be done or ordered to be done by the Contractor under the contract.

9.10.5. In consideration of the prior payments and the final payment made and all payments made for authorized changes, the Contractor releases and forever discharges the Owner from any and all obligations, liens, claims, security interests, encumbrances and/or liabilities arising by virtue of the contract and authorized changes between the parties, either verbal or in writing, and any and all claims and demands of every kind and character whatsoever against the Owner, arising out of or in any way relating to the contract and authorized changes.

9.10.6. The date of Final Payment by the Owner shall constitute Final Acceptance of the Work. The determining date for the expiration of the warranty period shall be as specified in Paragraphs 3.5 and 12.2.2.

9.10.7. If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect/Engineer so confirms, the Owner shall, upon application by the Contractor and certification by the Architect/Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect/Engineer prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.10.8. The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

9.10.8.1. liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;

9.10.8.2. failure of the Work to comply with the requirements of the Contract Documents; or,

9.10.8.3. terms of special warranties required by the Contract Documents.

9.10.9. Acceptance of final payment by the Contractor, a Subcontractor, or material supplier, shall constitute a waiver of any and all obligations, liens, claims, security interests, encumbrances and/or liabilities against the Owner except those previously made in writing per the requirements of Paragraph 4.3 and as yet unsettled at the time of submission of the final Application for Payment.

9.10.10. The Owner's issuance of Final Payment does not constitute a waiver or release of any kind regarding any past, current, or future claim the Owner may have against the Contractor and/or the surety.

10. ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

10.1. SAFETY

10.1.1. **Importance of Safety**. The Contractor and all Subcontractors (at any tier or level) recognize that safety is paramount at all times. The Contractor shall perform the work in a safe manner with the highest regard for safety of its employees and all other individuals and property at the work site. Contractor shall maintain its tools, equipment, and vehicles in a safe operating condition and take all other actions necessary to provide a safe working environment for performance of work required under this Contract. The Contractor is solely responsible for the means, methods, techniques, sequences and procedures for coordinating and constructing the Work, including all site safety, safety precautions, safety programs, and safety compliance with OSHA and all other governing bodies.

10.1.2. **Particular Safeguards**. (a). The Contractor shall erect and maintain, as required by Paragraphs 10.1.1 and 10.1.3, safeguards for safety and protection, including posting danger signs and other warnings against hazards, installing suitable barriers and lighting, promulgating safety regulations, and providing notification to all parties who may be impacted by the Contractor's operations. (b) When use or storage of explosives or other Hazardous Materials/Substances (defined below) or equipment are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. (c) The Contractor shall not encumber or load or permit any part of the construction site to be encumbered or loaded so as to endanger the safety of any person(s).

10.1.3. **Compliance with Safety Laws**. Contractor represents and warrants to Owner that it knows and understands all federal, state and local safety statutes, rules, and regulations (Laws) related to the work under this Contract. Contractor shall comply with these Laws. Contractor shall keep all material data safety sheets on site and available at all times.

10.1.4. **Remedy property damage**. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor of any tier or level, or anyone employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.18.

10.1.5. **Designation of Safety Representative.** Unless the Contractor designates, in writing to the Owner and the Architect/Engineer, another responsible member of the Contractor's organization as the Safety Representative, the Contractor's superintendent is the Safety Representative. The Safety Representative is defined as that member of the Contractor's organization responsible for all safety under this Contract.

10.1.6. **Release/Indemnity of Owner and Architect/Engineer**. The Contractor agrees that the Owner and Architect/Engineer are not responsible for safety at the work site and releases them from all obligations and liability regarding safety at the work site The Contractor shall indemnify and defend the Owner and the Architect/Engineer against and from all claims, liabilities, fines, penalties, orders, causes of action, judgments, losses, costs and expenses (including but not limited to court costs and reasonable attorney fees), arising from injuries and death to any persons and damage to real and personal property arising from, in connection with, or incidental to Contractor's safety responsibilities under this Contract.

10.2. HAZARDOUS MATERIALS/SUBSTANCES

10.2.1. "Hazardous Materials/Substances" means any substance: (a) the presence of which requires investigation, or remediation under any federal, state or local statute, rule, regulation, ordinance, order, policy or common law; (b) that is or becomes defined as "hazardous waste," "hazardous substance," pollutant, or contaminant under any federal, state or local statute, rule, regulation, or ordinance or amendments thereto; (c) that is toxic, explosive, corrosive flammable, or otherwise hazardous and is or becomes regulated by any government authority, agency, board, commission or instrumentality of the United States, the state of Montana or any political subdivision thereof; (d) gasoline, diesel fuel or other petroleum hydrocarbons; (e) containing contains polychlorinated biphenyls (PCBs) or asbestos; or (f) the presence of which causes or threatens to cause a nuisance or trespass on the work site or adjacent property.

10.2.2. The Contractor is solely responsible for all compliance with all regulations, requirements, and procedures governing Hazardous Materials/Substances at the Work Site or that Contractor brings on the site. The Contractor is solely responsible for remediation, costs, damages, loss, and/or expenses for all Hazardous Materials/Substances brought to the site. The Contractor shall not and is strictly prohibited from purchasing and/or installing any asbestos-containing materials or products as part of the Work. Should the Contractor do so, the Contractor shall be solely responsible for the immediate remediation and all costs, damages, loss, and/or expenses per Paragraphs 10.1.6, 10.2.2, 10.2.3, and 10.2.4.

10.2.3. If the Contractor encounters Hazardous Materials/Substances during the course of the Work, whether or not identified in the Contract Documents, Work, the Contractor agrees that:

10.2.3.1. Encountering any Hazardous Materials/Substances during performance of the Work does not necessarily mean a change in conditions has occurred, nor is it evidence that the Contractor is due additional Contract Time or an increase in the Contract Sum. If encountering Hazardous Materials/Substances is determined to be a change in conditions to the Contract Documents, Paragraph 4.3 and Article 7 apply in determining any additional compensation or extension of time claimed by the Contractor.

10.2.3.2. The Contractor is solely responsible for securing the Work in accordance with this Article 10 involving any Hazardous Materials/Substances against unlawful, unregulated, or improper intrusion, disturbance, or removal. The Contractor shall implement protections and take protective actions throughout the performance of the Work to prevent exposure to workers, occupants, and contamination of the site or area.

10.2.3.3. If the Contractor is unable to or fails to properly secure the Work against unlawful, unregulated, or improper intrusion, disturbance, or removal of Hazardous Materials/Substances, the Contractor shall immediately implement protections and take protective actions, up to and including stopping Work in the area or on the item affected, to prevent exposure to workers, occupants, and contamination of the site or area. The Contractor shall immediately notify the Owner and Architect in writing giving details of the failure and the corrective actions taken. If the condition is an emergency and notice cannot be provided in writing, then Contractor shall orally and immediately notify the Owner and Architect/Engineer of the condition followed by a full written explanation. In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss.

10.2.3.4. If the Contractor notifies the Owner and takes precautions in accordance with this Article 10 upon encountering materials/substances suspected of containing asbestos or polychlorinated biphenyls that are unidentified in the Contract Documents, the Owner shall verify if the unidentified material or substance contains asbestos or polychlorinated biphenyls and shall arrange for the removal or other measures as necessary to allow the Contractor to proceed with the Work. The Contract Time may be extended as appropriate if the Work affected is on the critical path and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs as provided in Article 7. Should the Contractor fail to notify the Owner upon encountering asbestos, polychlorinated biphenyls, or materials/substances suspected of containing asbestos or polychlorinated biphenyls, that are unidentified in the Contract Documents, the Contractor is solely responsible for all mitigation in accordance with Paragraphs 10.1.6, 10.2.2, 10.2.3, and 10.2.4.

10.2.4. The Contractor shall indemnify, hold harmless, and defend the Owner from and against all claims, liabilities, fines, penalties, orders, causes of action, judgments, losses, costs and expenses, including but not limited to court costs and reasonable attorneys' fees, arising from, in connection with, or incidental to the Contractor's handling, disposal, encountering, or release of Hazardous Materials/Substances.

10.3. UTILITIES

10.3.1. Underground Utilities: Buried utilities, including, but not limited to, electricity, gas, steam, air, water, telephone, sewer, irrigation, broadband coaxial computer cable, and fiber optic cables are very vulnerable and damage could result in loss of service. The telephone, broadband and fiber optic cables are especially sensitive and the slightest damage to these components will result in disruption of the operations of the campus.

10.3.2. "One Call" must be notified by phone and in writing at least 72 hours (3 business days) prior to digging to arrange and assist in the location of buried utilities in the field. (Dial 811). The Contractor shall mark the boundary of the work area. The boundary area shall be indicated with white paint and white flags. In winter, pink paint and flags will be accepted.

10.3.3. After buried utilities have been located, the Contractor shall be responsible for any utilities damaged while digging. Such responsibility shall include all necessary care including hand digging. Contractor's responsibility shall also include maintaining markings after initial locate. The area for such responsibility, unless otherwise indicated, shall extend 24 inches to either side of the marked center line of a buried utility line.

10.3.4. The Contractor's responsibility shall include repair or replacement of damaged utilities. The Contractor will also be responsible for all costs associated with reterminations and recertification.

10.3.5. Any buried utilities exposed by the operations of the Contractor shall be marked on the plans and adequately protected by the Contractor. If any buried utilities not located are exposed, the Contractor shall immediately contact the Owner and the Architect/Engineer. If, after exposing an unlocated buried utility, the Contractor continues digging without notifying Owner and Architect/Engineer and further damages the utility, the Contractor will be fully and solely responsible.

10.3.6. Damage to irrigation systems during seasons of no irrigation that are not immediately and adequately repaired and tested will require the Contractor to return when the system is in service to complete the repair.

10.3.7. In the event of a planned interruption of any existing utility service, the Contractor shall make arrangements with Owner at least 72 hours (3 business days) in advance. Shutdowns of the broadband or fiber optic cables will normally require 5 working days' notice to the Owner. The Contractor shall bear all costs associated with the interruptions and restorations of service.

11. ARTICLE 11 - INSURANCE AND BONDS

11.1. CONTRACTOR'S LIABILITY INSURANCE

11.1.1. The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the State of Montana with a rating no less than "A-", such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

11.1.1.1. claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;

11.1.1.2. claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

11.1.1.3. claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

11.1.1.4. claims for damages insured by usual personal injury liability coverage;

11.1.1.5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from;

11.1.1.6. claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

11.1.1.7. claims for bodily injury or property damage arising out of completed operations; and,

11.1.1.8. claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph 3.18.

11.1.2. The insurance required by Subparagraph 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until termination of any coverage required to be maintained after final payment.

11.1.3. Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire at any time prior to Final Acceptance and then not until at least 30 days' prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

11.1.4. At the request of the Owner, the Contractor shall provide copies of all insurance policies to the Owner.

11.2. INSURANCE, GENERAL REQUIREMENTS

11.2.1. The Contractor shall maintain for the duration of the contract, at its cost and expense, insurance against claims for injuries to persons or damages to property, including contractual liability, which may arise from or in connection with the performance of the Work by the Contractor, its agents, employees, representatives, assigns, or subcontractors. The Contractor is responsible for all deductibles regardless of policy or level of coverage. The Owner reserves the right to demand, and the Contractor agrees to provide, copies of any and all policies at any time.

11.2.2. Hold Harmless and Indemnification: The Contractor shall protect, defend, and save the state, its elected and appointed officials, agents, and employees, while acting within the scope of their duties as such, harmless from and against all claims, liabilities, demands, causes of action, and judgments whatsoever (including the cost of defense and reasonable attorney fees): 1) arising in favor of or asserted by third parties on account of damage to property, personal injury, or death which injury, death, or damage; or, 2) arising out of or resulting from performance or failure to perform, or omissions of services, or in any way results from the negligent acts or omissions of the Contractor, its agents, agents, or subcontractors.

11.2.3. Contractor's Insurance: insurance required under all sections herein shall be in effect for the duration of the contract that extends through the warranty period. Insurance required herein shall be provided by insurance policies issued only by insurance companies currently authorized to do business in the state of Montana. No Contractor or Sub-contractor shall commence any Work under this contract until all required insurance has been obtained. During the term of this contract, the Contractor shall, not less than thirty days prior to the expiration date of any policy for which a certificate of insurance is required, deliver to the Owner a certificate of insurance with respect to the renewal insurance policy. The Contractor shall furnish one copy of insurance certificates of insurance herein required, which shall specifically set forth evidence of all coverage required by these contract documents and which shall be signed by authorized representatives of the insurance company or companies evidencing that insurance as required herein is in force and will not be canceled, limited or restricted without thirty days' written notice by certified mail to the contractor and the Owner. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits. Additionally, all certificates shall include the project name and A/E project number.

11.2.4. Certificates of Insurance and Endorsements. All certificates of insurance and the additional insured endorsements are to be received by the state prior to issuance of the Notice to Proceed. The contractor is responsible to ensure that all policies and coverages contain the necessary endorsements for the State being listed as an additional insured. The state reserves the right to require complete copies of all insurance policies at any time to verify coverage. The contractor shall notify the state within 30 days of any material change in coverage.

11.3. WORKERS' COMPENSATION INSURANCE

11.3.1. The Contractor shall carry **Workers' Compensation Insurance**. Such Workers' Compensation Insurance shall protect the Contractor from claims made by his own employees, the employees of any Sub-contractor, and also claims made by anyone directly or indirectly employed by the Contractor or Sub-contractor. The Contractor shall require each Sub-contractor similarly to provide Workers' Compensation Insurance.

11.4. COMMERCIAL GENERAL LIABILITY INSURANCE

11.4.1. Each Contractor shall carry per occurrence coverage **Commercial General Liability Insurance** including coverage for premises; operations; independent contractor's protective; products and completed operations; products and materials stored off-site; broad form property damage and comprehensive automobile liability insurance with not less than the following limits of liability:

11.4.1.1. **$1,000,000 per occurrence; aggregate limit of $2,000,000**;

11.4.2. The **Commercial General and Automobile Liability Insurance** shall provide coverage for both bodily injury, including accidental death, sickness, disease, occupational sickness or disease, personal injury liability coverage and property damage which may arise out of the work under this contract, or operations

incidental thereto, whether such work and operations be by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by the Contractor or by Sub-contractor, or by anyone for whose acts any of them may be liable. The Contractor shall maintain the liability insurance required herein for a period of not less than one year after final payment or anytime the Contractor goes on to the location of the project.

11.4.3. The Contractor's liability insurance policies shall list the STATE OF MONTANA as an additional insured. **AN ADDITIONAL INSURED ENDORSEMENT DOCUMENT SHALL BE SUBMITTED WITH THE CERTIFICATES OF INSURANCE**. The STATE OF MONTANA includes its officers, elected and appointed officials, employees and volunteers and political subdivisions thereof. Should the Contractor not be able to list the state as an additional insured, the Contractor shall purchase a per occurrence Owner's/Contractor's Protective Policy (OCP) with the STATE OF MONTANA as the insured party in the same occurrence and aggregate limits as that indicated above for the Contractor's Commercial General Liability Policy.

11.4.4. Property damage liability insurance shall be written without any exclusion for injury to or destruction of any building, structure, wires, conduits, pipes, or other property above or below the surface of the ground arising out of the blasting, explosion, pile driving, excavation, filling, grading or from the moving, shoring, underpinning, raising, or demolition of any building or structure or structural support thereof.

11.4.5. The Contractor's insurance coverage shall be PRIMARY insurance as respects the State, its officers, elected and appointed officials, employees and volunteers. Any insurance or self-insurance maintained by the state, its officers, elected and appointed officials, employees and volunteers shall be excess of the Contractor's insurance and shall not contribute to it. NO WAIVERS OF SUBROGATION OR ENDORSEMENTS LIMITING, TRANSFERRING, OR OTHERWISE INDEMNIFYING LIABLE OR RESPONSIBLE PARTIES OF THE CONTRACTOR OR ANY SUBCONTRACTOR WILL BE ACCEPTED.

11.5. PROPERTY INSURANCE (ALL RISK)

11.5.1. New Construction (for projects involving new construction): At its sole cost and expense, the contractor shall keep the building and all other improvements on the premises insured throughout the term of the agreement against the following hazards:

11.5.1.1. Loss or damage by fire and such other risks (including earthquake damage for those areas with a shaking level at 10g or above as indicated on the seismic map, http://rmtd.mt.gov/Portal/62/aboutus/publications/files/NEHRP.pdf in an amount sufficient to permit such insurance to be written at all times on a replacement cost basis. This may be insured against by attachment of standard form extended coverage endorsement to fire insurance policies. Certificates of Insurance MUST indicate earthquake coverage if coverage is required per the above referenced map.

11.5.1.2. Loss or damage from leakage or sprinkler systems now or hereafter installed in any building on the premises.

11.5.1.3. Loss or damage by explosion of steam boilers, pressure vessels, and oil or gasoline storage tanks, or similar apparatus now or hereafter installed in a building or buildings on the premises.

11.5.2. Building Renovation (for projects involving building renovation or remodeling):

11.5.2.1. The contractor shall purchase and maintain Builder's Risk/Installation insurance on a "special causes of loss" form (so called "all risk") for the cost of the work and any subsequent modifications and change orders. The contractor is not responsible for insuring the existing structure for Builder's Risk/Installation insurance.

11.5.2.2. At its sole cost and expense, the contractor shall insure all property construction on the premises throughout the term of the agreement against the following hazards:

11.5.2.2.1. Loss or damage by fire and such other risks (including earthquake damage for those areas with a shaking level at 10g or above as indicated on the seismic map

at http://rmtd.mt.gov/Portal/62/aboutus/publications/files/NEHRP.pdf in an amount sufficient to permit such insurance to be written at all times on a replacement cost basis. This may be insured against by attachment of standard form extended coverage endorsement to fire policies. Certificates of Insurance MUST indicate earthquake coverage if coverage is required per the above referenced map.

11.5.2.2.2. Loss or damage from leakage or sprinkler systems now or hereafter installed in any building on the premises.

11.5.2.2.3. Loss or damage by explosion of steam boilers, pressure vessels, oil or gasoline storage tanks, or similar apparatus now or hereafter installed in a building or buildings on the premises.

11.6. ASBESTOS ABATEMENT INSURANCE

11.6.1. If Asbestos Abatement is identified as part of the Work under this contract, the Contractor or any subcontractor involved in asbestos abatement shall purchase and maintain **Asbestos Liability Insurance** for coverage of bodily injury, sickness, disease, death, damages, claims, errors or omissions regarding the asbestos portion of the work ***in addition to*** the CGL Insurance by reason of any negligence in part or in whole, error or omission committed or alleged to have been committed by the Contractor or anyone for whom the Contractor is legally liable.

11.6.2. Such insurance shall be in "per occurrence" form and shall clearly state on the certificate that asbestos work is included in the following limits:

11.6.2.1. **$1,000,000 per occurrence; aggregate limit of $2,000,000.**

11.6.3. Asbestos Liability Insurance as carried by the asbestos abatement subcontractor in these limits in lieu of the Contractor's coverage is acceptable provided the Contractor and the State of Montana are named as additional insureds and that the abatement subcontractor's insurance is PRIMARY as respects both the Owner and the Contractor. If the Contractor or any other subcontractor encounters asbestos, all operations shall be suspended until abatement with the associated air monitoring clearances are accomplished. The certificate of coverage shall be provided by the asbestos abatement subcontractor to both the Contractor and the Owner.

11.7. PERFORMANCE BOND AND LABOR & MATERIAL PAYMENT BOND (BOTH ARE REQUIRED ON THIS PROJECT)

11.7.1. The Contract shall furnish a Performance Bond in the amount of 100% of the contract price as security for the faithful performance of his contract (18-2-201 MCA). The Contractor shall also furnish a Labor and Material Payment Bond in the amount of 100% of the contract price as security for the payment of all persons performing labor and furnishing materials in connection therewith (18-2-201MCA). The bonds shall be executed on forms furnished by the Owner and no other forms or endorsements will be acceptable. The bonds shall be signed in compliance with state statutes (33-17-1111 MCA). Bonds shall be secured from a state licensed bonding company. Power of Attorney is required with each bond. Attorneys-in-fact who sign contract bonds must file with each bond a certified and effectively dated copy of their power of attorney:

11.7.1.1. one original copy shall be furnished with each set of bonds.

11.7.1.2. Others furnished with a set of bonds may be copies of that original.

11.7.2. The Owner reserves the right at any time during the performance of Work to require bonding of Subcontractors provided by the General Contractor. Should this occur, the Owner will cover the direct cost. This shall not be construed as to in any way affect the relationship between the General Contractor and his Subcontractors.

11.7.3. Surety must have an endorsement stating that their guarantee of Contractor's performance automatically covers the additional contract time added to a Contractor's contract by Change Order.

11.7.4. A change in the Contractor's organization shall not constitute grounds for Surety to claim a discharge of their liability and requires an endorsement from Surety so stating.

11.7.5. Except as noted below, the Contractor is required to notify Surety of any increase in the contract amount resulting from a Change Order within 48 hours of signing and submitting a Change Order and shall submit a copy of Surety's written acknowledgment and consent to Owner before a Change Order can be approved. The Surety's written acknowledgment and consent on the Change Order form shall also satisfy this consent requirement.

11.7.5.1. Surety consent shall not be required on Change Order(s) which, in the aggregate total amount of all Changes Orders, increase the original contract amount by less than 10%. However, the Contractor is still required to notify Surety of any increase in contract amount resulting from a Change Order(s) within 48 hours of signing and submitting every Change Order.

11.7.5.2. Surety is fully obligated to the Owner for the full contract amount, inclusive of all Change Orders, regardless of whether or not written acknowledgement and consent is received and regardless of whether or not the aggregate total of all Change Orders is more or less than 10% of the original contract amount.

11.7.5.3. A fax with hard copy to follow of Surety's written acknowledgment and consent is acceptable. If hard copy is not received by Owner before Application for Payment on any portion or all of said Change Order, it will not be accepted by Owner for payment.

11.7.6. The Surety must take action within 30 days of notice of default on the part of the Contractor or of any claim on bonds made by the Owner or any Subcontractor or supplier.

12. ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

12.1. UNCOVERING OF WORK

12.1.1. If a portion of the Work is covered contrary to the Architect/Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect/Engineer, be uncovered for the Architect/Engineer's examination and be replaced at the Contractor's expense without change in the Contract Time.

12.1.2. If a portion of the Work has been covered which the Architect/Engineer has not specifically requested to examine prior to it being covered, the Architect/Engineer may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

12.2. CORRECTION OF WORK

12.2.1. **BEFORE OR AFTER SUBSTANTIAL COMPLETION**

12.2.1.1. The Contractor shall promptly correct Work that fails to conform to the requirements of the Contract Documents or that is rejected by the Architect/Engineer, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect/Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense. The Contractor is responsible to discover and correct all defective work and shall not rely upon the Architect/Engineer's or Owner's observations.

12.2.1.2. Rejection and Correction of Work in Progress. During the course of the Work, the Contractor shall inspect and promptly reject any Work that:

12.2.1.2.1. does not conform to the Construction Documents; or,
12.2.1.2.2. does not comply with any applicable law, statute, building code, rule or regulation of any governmental, public and quasi-public authorities, and agencies having jurisdiction over the Project.

12.2.1.3. The Contractor shall promptly correct or require the correction of all rejected Work, whether observed before or after Substantial Completion. The Contractor shall bear all costs of correcting such Work, including additional testing, inspections, and compensation for all services and expenses necessitated by such corrective action.

12.2.2. **AFTER SUBSTANTIAL COMPLETION AND AFTER FINAL ACCEPTANCE**

12.2.2.1. In addition to the Contractor's obligations under Paragraph 3.5, if, within one year after the date of Final Acceptance of the Work or designated portion thereof or after the date for commencement of warranties, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect/Engineer, the Owner may correct it in accordance with Paragraph 2.3.

12.2.2.1.1. The Contractor shall remedy any and all deficiencies due to faulty materials or workmanship and pay for any damage to other work resulting there from, which shall appear within the period of Substantial Completion through one (1) year from the date of Final Acceptance in accordance with the terms and conditions of the Contract and with any special guarantees or warranties provided in the Contract Documents. The Owner shall give notice of observed deficiencies with reasonable promptness. All questions, claims or disputes arising under this Article shall be decided by the Architect/Engineer. All manufacturer, product and supplier warranties are in addition to this Contractor warranty.

12.2.2.1.2. The Contractor shall respond within seven (7) days after notice of observed deficiencies has been given and he shall proceed to immediately remedy these deficiencies.

12.2.2.1.3. Should the Contractor fail to respond to the notice or not remedy those deficiencies; the Owner shall have this work corrected at the expense of the Contractor.

12.2.2.1.4. Latent defects shall be in addition to those identified above and shall be the responsibility of the Contractor per the statute of limitations for a written contract (27-2-208 MCA) starting from the date of Final Acceptance.

12.2.2.2. The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

12.2.2.3. The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Paragraph 12.2.

12.2.3. The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

12.2.4. The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

12.2.5. Nothing contained in this Paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Subparagraph 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the

obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

12.3. ACCEPTANCE OF NONCONFORMING WORK

12.3.1. If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

13. ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.1. GOVERNING LAW

13.1.1. The Contract shall be governed by the laws of the State of Montana and venue for all legal proceedings shall be the First Judicial District, Lewis & Clark County.

13.2. SUCCESSORS AND ASSIGNS

13.2.1. The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempt to make such assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.3. WRITTEN NOTICE

13.3.1. Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

13.4. RIGHTS AND REMEDIES

13.4.1. Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

13.4.2. No action or failure to act by the Owner, Architect/Engineer or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.5. TESTS AND INSPECTIONS

13.5.1. Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect/Engineer timely notice of when and where tests and inspections are to be made so that the Architect/Engineer may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2. If the Architect/Engineer, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5.1, the Architect/Engineer will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect/Engineer of when and where tests and

inspections are to be made so that the Architect/Engineer may be present for such procedures. Such costs, except as provided in Subparagraph 13.5.3 shall be at the Owner's expense.

13.5.3. If such procedures for testing, inspection or approval under Subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect/Engineer's services and expenses shall be at the Contractor's expense.

13.5.4. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect/Engineer.

13.5.5. If the Architect/Engineer is to observe tests, inspections or approvals required by the Contract Documents, the Architect/Engineer will do so promptly and, where practicable, at the normal place of testing.

13.5.6. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

13.6. INTEREST

13.6.1. Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

13.7. COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1. As between the Owner and Contractor:

13.7.1.1. **Before Substantial Completion.** As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;

13.7.1.2. **Between Substantial Completion and Final Certificate for Payment.** As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and,

13.7.1.3. **After Final Payment.** As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Paragraph 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Paragraph 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

13.8. PAYROLL AND BASIC RECORDS

13.8.1. Payrolls and basic records pertaining to the project shall be kept on a generally recognized accounting basis and shall be available to the Owner, Legislative Auditor, the Legislative Fiscal Analyst or his authorized representative at mutually convenient times. Accounting records shall be kept by the Contractor for a period of three years after the date of the Owner's Final Acceptance of the Project.

14. ARTICLE 14 – TERMINATION OR SUSPENSION OF THE CONTRACT

14.1. TERMINATION BY THE CONTRACTOR

14.1.1. The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

14.1.1.1. issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped; or,

14.1.1.2. an act of government, such as a declaration of national emergency which requires all Work to be stopped.

14.1.2. The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

14.1.3. If one of the reasons described in Subparagraph 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect/Engineer, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit but not damages.

14.1.4. If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect/Engineer, terminate the Contract and recover from the Owner as provided in Subparagraph 14.1.3.

14.2. TERMINATION BY THE OWNER FOR CAUSE

14.2.1. The Owner may terminate the Contract if the Contractor:

14.2.1.1. persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

14.2.1.2. fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

14.2.1.3. persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or,

14.2.1.4. otherwise is guilty of any breach of a provision of the Contract Documents.

14.2.2. When any of the above reasons exist, the Owner, upon certification by the Architect/Engineer that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

14.2.2.1. take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

14.2.2.2. accept assignment of subcontracts pursuant to Paragraph 5.4; and,

14.2.2.3. finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

14.2.3. When the Owner terminates the Contract for one of the reasons stated in Subparagraph 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

14.2.4. If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect/Engineer's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect/Engineer, upon application, and this obligation for payment shall survive termination of the Contract.

14.3. SUSPENSION BY THE OWNER FOR CONVENIENCE

14.3.1. The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

14.3.2. The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Subparagraph 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

14.3.2.1. that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or,

14.3.2.2. that an equitable adjustment is made or denied under another provision of the Contract.

14.4. TERMINATION BY THE OWNER FOR CONVENIENCE

14.4.1. The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

14.4.2. Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

14.4.2.1. cease operations as directed by the Owner in the notice;

14.4.2.2. take actions necessary, or that the Owner may direct, for the protection and preservation of the Work, and;

14.4.2.3. except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

14.4.3. In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed. The Contractor shall provide a full and complete itemized accounting of all costs.

15. ARTICLE 15 – EQUAL OPPORTUNITY

15.1. The Contractor and all Sub-contractors shall not discriminate against any employee or applicant for employment because of race, color, sex, pregnancy, childbirth or medical conditions related to pregnancy or childbirth, political or religious affiliation or ideas, culture, creed, social origin or condition, genetic information, sexual orientation, gender identity or expression, national origin, ancestry, age, disability, military service or veteran status, or marital status, or physical or mental disability and shall comply with all Federal and State laws concerning fair labor standards and hiring practices. The Contractor shall ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, sex, pregnancy, childbirth or medical conditions related to pregnancy or childbirth, political or religious affiliation or ideas, culture, creed, social origin or condition, genetic information, sexual orientation, gender identity or expression, national origin, ancestry, age, disability, military service or veteran status, or marital status, or physical or mental disability.

15.2. Such action 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 agrees to post in conspicuous places available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

15.3. The Contractor and all Sub-contractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, sex, pregnancy, childbirth or medical conditions related to pregnancy or childbirth, political or religious affiliation or ideas, culture, creed, social origin or condition, genetic information, sexual orientation, gender identity or expression, national origin, ancestry, age, disability, military service or veteran status, or marital status, or physical or mental disability.

[END OF GENERAL CONDITIONS]

MONTANA
STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street • P.O. Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

SUPPLEMENTAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

(REVISED MARCH 1, 2016)

FOR STATE OF MONTANA GENERAL CONDITIONS

ARTICLE 1 – GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.3 SPECIFICATIONS

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

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

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

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

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

1.1.3.6 ADD: "Install": Operations at Project site including unloading, temporarily shoring, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

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

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

1.6.1 Insert in the sixth line: "All documents which constitute the instruments of service are the property of the Owner." In lieu of the phrase "Unless otherwise indicated, the Architect/Engineer and the Architect/Engineer's consultants shall be deemed the authors of them… except as defined in the Owner's Contract with the Architect/Engineer."

ARTICLE 2 – THE OWNER

2.1 THE STATE OF MONTANA

2.1.1.1 ADD: The State of Montana includes its officers, elected and approved officials, employees and volunteers, and political subdivisions thereof. The State of Montana and Montana State University are synonymous throughout the contract documents.

ARTICLE 3 – THE CONTRACTOR

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.6 ADD: PRODUCT DELIVERY, STORAGE AND HANDLING

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

3.3.6.2 ADD: DELIVERY AND HANDLING:

3.3.6.2.1 ADD: Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

3.3.6.2.2 ADD: Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3.3.6.2.3 ADD: Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

3.3.6.2.4 ADD: Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and property protected.

3.3.6.3 ADD: STORAGE

3.3.6.3.1 ADD: Store products to allow for inspection and measurement of quantity or counting of units

3.3.6.3.2 ADD: Store materials in a manner that will not endanger Project structure.

3.3.6.3.3 ADD: Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

3.3.6.3.4 ADD: Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

3.3.6.3.5 ADD: Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

3.3.6.3.6 ADD: Protect stored products from damage and liquids from freezing.

3.10 CONSTRUCTION SCHEDULES

3.10.1.1 ADD: A pre-construction meeting will be held at a time mutually agreed upon by the Owner, Architect/Engineer and Contractor at Campus Planning, Design and Construction, Montana State University, Bozeman, Montana. The contractor shall confirm the Contractor's Construction Schedule for the Work. Coordination of operating requirements of the affected buildings, and surrounds, schedule of activities and Owner requirements will be discussed, as well as the order in which the Contractor intends to pursue the work. This schedule will be reviewed and must be mutually agreed upon by the Architect, Contractor and Owner.

3.11 DOCUMENTATION AND AS-BUILT CONDITIONS AT THE SITE

3.11.4 ADD: The contractor shall maintain at the site two (2) construction reference sets of all specifications, drawings, approved shop drawings, change orders and other modifications, addenda, schedules and instructions, in good order.

3.11.4.1 ADD: The record drawings shall be two (2) sets of black (or blue) and white prints of the drawings on which the contractor must record all "red line" changes during the course of construction and will include references to change order numbers, field directives, etc., and their dates. This record set shall be maintained separate and apart from documents used for construction reference. This set will be available for review by the project consultant, architect, engineer and MSU project manager at all times.

3.11.4.2 ADD: All as-built conditions shall be kept current and the contractor shall not permanently conceal or cover any work until all required information has been recorded.

3.11.4.3 ADD: All survey and exterior underground utilities shall be recorded using the spatial reference, Montana State Plane, NAD 83, CORS 96, Lambert Conformal Conic. The National Geodetic Survey publishes NAD 83

coordinates in the metric system (i.e., meters). The conversion factor that should be used to convert between English and metric systems is the international conversion factor of 1 ft. = 0.3048 m. coordinate system.

3.11.4.4 ADD: In marking any as-built conditions, the contractor shall ensure that such drawings indicate by measured dimension to building corners or other permanent monuments the exact locations of all piping, conduit or utilities concealed in concrete slabs, behind walls or ceilings or underground. Record drawings shall be made to scale and shall also include exact locations of valves, pull boxes and similar items as required for maintenance or repair service.

3.11.4.5 ADD: The contractor shall prepare and maintain a binder with all project warranty information. This will be provided to the project consultant, architect or engineer at final acceptance.

3.12.1 DEFINITIONS:

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

3.12.1.5 ADD: Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

3.12.1.6 ADD: New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

3.12.1.7 ADD: Comparable Products: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

3.12.1.8 ADD: Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specifications.

3.13. <u>USE OF SITE</u>

3.13.3 ADD: MSU BOZEMAN Vehicle Regulations state:

"All students, faculty, staff, and visitors must register any motor vehicle they park on the University campus, for any reason. A visitor is anyone not defined as student, staff or faculty."

All Contractor and Contractor employees shall comply with Montana State University parking regulations. MSU parking permits can be purchased at the Huffman Building at Seventh Avenue and Kagy Boulevard. Contractor should call University Police at 994-2121 for permit information. Violators of MSU Bozeman Vehicle Regulations may be ticketed and towed.

Unless otherwise indicated on the drawings, all Contractor and Contractor employee vehicles on campus shall be parked in designated parking lots. If allowed on the drawings, vehicles to a maximum number stated, may be parked in project site areas designated and shall only be Contractor vehicles with company signs clearly visible. No personal vehicles shall be parked at the project site in any case. If a driver of a vehicle not allowed to be parked at the project site must unload equipment, tools, or materials, the vehicle must be immediately thereafter moved to a designated lot or leave campus. Vehicles parked in the project site, other than those allowed on the drawings, may be ticketed and towed.

Access to the project site shall be only by the route designated on the drawings. In cases where a different route must be used for a specific purpose, permission must be obtained from MSU Facilities Services. In no case will vehicles be used on the Centennial Mall paving. Access routes are for delivery of equipment, tools, and not for parking.

Site staging areas for materials and equipment if permitted, will be designated on the drawings if permitted. If not designated, staging is intended to be in the construction area boundaries. Staged materials and equipment must be secured on the ground surface or in trailers. Site staging areas shall be fenced.

3.13.4 ADD: The Contractor shall coordinate his operations with the Owner in order that the Owner will have maximum use of existing facilities surrounding the area of the Work, as agreed upon, at all times during normal working hours. Contractor further agrees to coordinate his operations so as to avoid interference with the Owner's normal operations to as great an extent as possible.

3.13.5 ADD: By acceptance of MSU Building Keys the Contractor agrees with the following: University keys are the property of Montana State University. Fabricating, duplicating or modifying University keys is prohibited. Doors must remain locked at all times. The use of these keys to allow unauthorized persons to enter the above areas is prohibited. Loss of any key must be reported immediately to the Director, Office of Facilities Services and University Police, if the loss of keys results in re-keying costs, these costs will be charged to the Contractor. **See attached Estimated Re-Keying Costs per Building.**

3.13.6 ADD: The Montana Legislature decreed that the "right to breath smoke-free air has priority over the desire to smoke" (MCA 20-40-102). It is the policy of MSU to promote the health, wellness and safety of all employees, students, guests, visitors, and contractors while on campus. Therefore, the campus will be free of tobacco-use effective August 1, 2012. The use of tobacco (including cigarettes, cigars, pipes, smokeless tobacco and all other tobacco products) by students, faculty, staff, guests, visitors, and contractors is prohibited on all properties owned or leased by MSU.

Littering any university property, whether owned or leased, with the remains of tobacco products is prohibited.

All university employees, students, visitors, guests, and contractors are required to comply with this policy, which shall remain in effect at all times. Refusal to comply with this policy may be cause for disciplinary action in accordance with employee and student conduct policies. Refusal to comply with the policy by visitors, guests and contractors may be grounds for removal from campus. (http://www2montana.edu/policy/smoking_facilities/)

3.13.7 ADD: The Contractor may use the University's toilet facilities only as directed by the Owner.

ARTICLE 4 – ADMINISTRATION OF THE CONSTRUCTION CONTRACT

4.6. ARBITRATION

4.6.3 Insert in the second line "the Eighteenth Judicial District, Gallatin County" in lieu of "First Judicial District, Lewis & Clark County."

4.6.11 ADD: In responding to a claim brought by a Contractor, the Owner shall have a minimum of forty-five (45) days in which to respond to a revised claim prior to the arbitration hearing.

ARTICLE 7 – CHANGES IN WORK

7.2 CHANGE ORDERS

7.2.2.1 Insert the word "maximum" before "5%" and insert the word "maximum" before "10%".

7.2.2.4 ADD: Total Change Order markup shall not exceed (cost of the work) x 1.15.

7.2.3.1 Insert at the beginning of the first sentence the word "Itemized".

7.2.3.2 Insert at the beginning of the first sentence the word "Itemized".

7.2.3.3 Insert at the beginning of the first sentence the word "Itemized".

7.2.3.4 ADD: The Contractor shall provide a complete description summarizing all work involved.

ARTICLE 8 - TIME

8.1. DEFINITIONS

8.1.8.1 ADD: The Owner will issue a written Notice to Proceed on satisfactory receipt of the signed Contract and all required bonds, insurance and other required submittals. Work commenced before receipt of the Notice to Proceed will be entirely at the Contractor's risk.

8.2. PROGRESS AND COMPLETION

8.2.5 ADD: Completion of the work within the stated time and/or by the date stated on the Notice to Proceed is of the essence of this Contract and failure to complete, without approved time extension, may be considered default of the Contract. At the time for completion as stated on the Notice to Proceed or as extended by approved change order, if the work is not substantially complete, the Owner may notify the Contractor and the Contractor's surety company in writing of the recourse the Owner intends to take, within the Contract, to assess liquidated damages and /or cause the work to be completed.

8.3. DELAYS AND EXTENSIONS OF TIME

8.3.4 ADD: By the act of signing the Contract, the Contractor signifies that he/she and all subcontractors can perform the work within the stated schedule and that subcontractors, manufacturers, suppliers, and deliverers are known to be able to support the schedule. Time extension may be granted for unforeseen conditions or events out of the Contractor's control causing delay in delivery of materials or causing delay in the Contractor's ability to perform the work within the Contract Documents. The Contractor is expected to take all possible measures and bear all reasonable costs in order to anticipate, control, counteract, and expedite such delay-causing conditions, including finding alternative sources of materials, equipment, shipping, and labor. Notification of any claim for schedule delay must be made in writing to the Owner within one week of the causing event or of first knowledge of a known delay causing condition with supporting documentation as required by the Owner. The Owner will respond in writing within one week to claims of delay. No claims of delay will be entertained after the date of completion as stated on the Notice to Proceed or as extended by previously approved delay claims.

ARTICLE 9 – PAYMENTS AND COMPLETION

9.3. APPLICATIONS FOR PAYMENT

9.3.7.2.1. Insert in the first line "Schedule of Values" in lieu of "Schedule of Amounts for Contract Payment".

9.3.7.2.3 ADD: Subcontractor's List: The Contractor shall list all subcontractors doing work in excess of $5,000.

9.8. SUBSTANTIAL COMPLETION

9.8.4.1 ADD: Prior to the inspection, the Contractor shall complete the final clean-up of the project site which, unless otherwise stated in the Contract Documents, shall consist of:

9.8.4.1.1 Removal of all debris and waste. All construction debris and waste shall be removed from the campus grounds. Use of the University trash containers will not be permitted.

9.8.4.1.2 Removal of all stains, smears, marks of any kind from surfaces including existing surfaces if said damage is the result of the work.

9.8.4.1.3 Removal of all temporary structures and barricades.

9.10. FINAL COMPLETION AND FINAL PAYMENT

9.10.2.4 Insert in the first line after the word "(Form 103)": "for contracts greater than or equal to $25,000"

ARTICLE 10 – PROTECTIONS OF PERSONS AND PROPERTY

10.1. SAFETY

10.1.2 Insert in the second line before the word "safeguards": "and as approved by Owner,"

10.1.2.1 ADD: The Contractor recognizes that the Work will be conducted in and around buildings and areas that are occupied and will continue to function for the purposes of the University. The Contractor shall conduct a project safety meeting prior to the start of the Work, with the Owner's representative and all others that the Owner's representative deems necessary. The purpose of the meeting shall be to produce project specific rules and guidelines pertaining to but not restricted to: safety of persons in and around the area of the Work including type and location of fencing, guards, signage, etc.; closing of existing campus circulation routes and designation of alternate routes,

including creation of temporary routes of access as required; creation and location of temporary signage as required to maintain accessible routes for handicapped access to and around the site of the Work. The Contractor shall be solely responsible for implementing all required means and methods for site safety and security that may be agreed upon in this meeting.

10.1.2.2 ADD: Contractor shall notify Owner any time his operations will disrupt use of and access to existing accessible routes. Contractor is solely responsible for maintaining existing accessible routes in the area of the project with the exception of temporary interruptions lasting one day or less. Contractor is responsible for erecting signage identifying temporary re-routing of accessible routes. Such re-routing shall be coordinated with Owner in advance.

10.3. UTILITIES

10.3.1 ADD: Underground Utilities: Buried utilities, including, but not limited to, electricity, gas, steam, air, water, telephone, sewer, irrigation, broadband coaxial computer cable, and fiber optic cables are very vulnerable and damage could result in loss of service. The telephone, broadband and fiber optic cables are especially sensitive and the slightest damage to these components will result in disruption of the operations of the campus.

10.3.2 ADD: "One Call" must be notified by phone and in writing at least 72 hours (3 business days) prior to digging to arrange and assist in the location of buried utilities in the field. (Dial 811). The Contractor shall mark the boundary of the work area. The boundary area shall be indicated with white paint and white flags. In winter, pink paint and flags will be accepted.

10.3.3 ADD: After buried utilities have been located, the Contractor shall be responsible for any utilities damaged while digging. Such responsibility shall include all necessary care including hand digging. Contractor's responsibility shall also include maintaining markings after initial locate. The area for such responsibility, unless otherwise indicated, shall extend 24 inches to either side of the marked center line of a buried utility line. In cases of multiple or overlapping utilities or inconclusive electronic locating signals, MSU Project Manager may specifically indicate a wider area for Contractor's responsibility.

10.3.4 ADD: The Contractor's responsibility shall include repair or replacement of damaged utilities. In the event of damage to the 15 KV electrical distribution system, the broadband or fiber optic cables, repair will consist of replacement from termination to termination. Facilities Services and the MSU Information Technology Center will verify repair and recertification. The Contractor will also be responsible for all costs associated with reterminations and recertification.

10.3.5 ADD: Any buried utilities exposed by the operations of the Contractor shall be marked on the plans and adequately protected by the Contractor. If any buried utilities not located are exposed, the Contractor shall immediately contact Facilities Services at the numbers above. If, after exposing an unlocated buried utility, the Contractor continues digging without notifying Facilities Services and further damages the utility, the Contractor will be responsible.

10.3.6 ADD: Damage to irrigation systems during seasons of no irrigation that are not immediately and adequately repaired and tested will require the Contractor to return when the system is in service to complete the repair.

10.3.7 ADD: In the event of a planned interruption of any existing utility service, the Contractor shall make arrangements with Facilities Services at least 72 hours (3 business days) in advance. Shutdowns of the broadband or fiber optic cables will normally require 5 working days notice to Facilities Services and the Information Technology Center. The Contractor shall bear all costs associated with the interruptions and restorations of service.

10.3.8 ADD: The Owner allows the contractor to use the Owner's utilities (water, heat, electricity) services without charge for procedures necessary for the completion of the work.

ARTICLE 11 - INSURANCE AND BONDS

11.4. COMMERCIAL GENERAL LIABILITY INSURANCE

11.4.1.3. Insert in the first line after "State of Montana": ", Montana State University".

11.7. PERFORMANCE BOND AND LABOR & MATERIAL PAYMENT BOND (BOTH ARE REQUIRED ON THIS PROJECT)

11.7.1. Insert in the first line at the beginning of the sentence "For contracts equal to or greater than $25,000".

11.8. CANCELLATION

11.8 ADD All Certificates shall contain a provision that coverage provided by the policies will not be cancelled without at least thirty (30) days prior notice to the Owner.

ARTICLE 13 – MISCELLANEOUS PROVISIONS

13.1. GOVERNING LAW

13.1.1. Insert in the second line "The Eighteenth Judicial District, Gallatin County" in lieu of "First Judicial District, Lewis and Clark County".

13.9 EMERGENCY AND PUBLIC SAFETY

ADD: Montana State University has an Emergency and Public Safety Alert System that warns the campus community in the event of an emergency or public safety event. Because contractors, consultants, and vendors are considered members of the campus community when working on campus, they must be familiar with the alert system and understand when the system is used. Montana State University requires all contractors, consultants, vendors, and their employees working on or entering the MSU-Bozeman campus to register for the Emergency and Public Safety Alert System. The link to register is: http://www.montana.edu/msualert/.

END OF SUPPLEMENTARY GENERAL CONDITIONS

MONTANA
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FACILITIES SERVICES
PO BOX 172760, BOZEMAN, MONTANA 59717-2760
406/994-5413 FAX 406/994-5665

Cost Estimate to Re-key Buildings

Building	Core #	Cut keys	Budget
AJM Johnson	112	448	$13,000.00
Animal BioScience	109	436	$13,000.00
ARC	122	488	$14,000.00
Athletics (Fieldhouse etc.)	500	2,000	$52,000.00
Cheever Hall	136	544	$18,000.00
Chem Building	229	916	$30,000.00
Chem Modular	16	64	$3,000.00
Cobleigh Hall	380	1,520	$41,000.00
Cooley Lab	99	396	$12,000.00
Creative Arts Complex	368	1,472	$50,000.00
Culbertson Hall	171	684	$23,000.00
Haynes Hall	113	452	$16,000.00
Howard Hall	119	476	$16,000.00
Huffman	39	156	$6,000.00
EPS	408	1,632	$45,000.00
EPS Complex	928	3,712	$106,000.00
Gaines Hall	175	700	$23,000.00
Grad Art	6	24	$2,000.00
Hamilton Hall	99	396	$16,000.00
Heat Plant	17	68	$3,000.00
Herrick Hall	118	472	$16,000.00
Kellog Center	35	140	$5,000.00
Leon Johnson Hall	313	1,252	$37,000.00
Lewis Hall	163	652	$21,000.00
Linfield Hall	295	1,180	$34,000.00
Marga Hosaeus	134	536	$18,000.00
Marsh Lab	187	748	$24,000.00
McCall Hall	52	208	$9,000.00
Molecular Bean	5	20	$2,000.00
Montana Hall	156	624	$22,000.00
Museum of the Rockies	166	664	$25,000.00
OutDoor Rec	16	64	$3,000.00
Plant BioScience	112	448	$16,000.00
Plant Growth	152	608	$20,000.00
Reid Hall	302	1,208	$36,000.00
Renne Library	255	1,020	$32,000.00
Roberts Hall	140	560	$20,000.00
Romney	98	392	$15,000.00
Swingle Health Center	137	548	$18,000.00
Taylor Hall	56	224	$10,000.00
Traphagen Hall	148	592	$21,000.00
Univ. Record Storage	9	36	$2,000.00
VisComm (Black Box)	144	576	$21,000.00
Wilson Hall	325	1,300	$38,000.00
Mech Room	501	2,004	$30,000.00

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PROJECT CLOSEOUT CHECKLIST

PROJECT TITLE: _____ PPA No. _____
CONTRACTOR: _____ DATE: _____
CONSULTANT _____

*** In absence of a Consultant, responsibilities will be determined at Pre-construction meeting*

To be submitted with Application of Final Payment			
Contract Requirements	**Date PM Verified**	**Date Completed**	**Required Documentation:**
			Contractors Affidavit of Completion, MSU Form106 (all contracts)
			Final application for payment (all contracts)
			Certificate of Substantial Completion - MSU Form 107 (over $25K)
			Certificate of Final Acceptance - MSU Form118 (over $25K)
			Consent of Surety to final payment MSU Form103 (if over $25K)

MSU PM			Verification of All Change Orders & Final Amounts with Contract amounts
Contractor to submit all deliverables to the Consultant *To be submitted with Application of Final Payment*			
Contractor Requirements			Building keys returned to Owner
			Final walk through and instructions to Owner
			As-built "red lined" drawings (PDF Color Scan of Redlined Construction Set)
			Complete set of project shop drawings/Product Data (3Sets)
			Demonstration & Training
			City of Bozeman Building Permits: ☐ Fire Suppression test & Certificate ☐ Fire Alarm test & Certificate ☐ Elevator Inspection ☐ Plumbing & HVAC test & Inspection ☐ Electrical Inspection ☐ Temporary certificate of occupancy ☐ Final certificate of occupancy
			Final project inspection
			Notification of completion of punch list
			Copy of warranty Binder

Contractor Signature _____ Consultant Signature _____

Submit at Record Document Stage/Consultant shall submit Contractor Deliverables to Owner			
Consultant Requirements			Complete set of record drawings (PDF & AutoCAD) 1 Paper set
			Operation & Maintenance Manuals: including warrantees or guarantees for all equipment (1 copy each – PDF & Paper): ☐ HVAC ☐ Plumbing ☐ Electrical ☐ Elevator ☐ Fire Alarm ☐ Roof ☐ Project Manual (Divisions 1-13)

Consultant Signature _____ Project Manager _____

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SUBSTITUTION REQUEST (PRIOR APPROVAL)

Project Title: _____ PPA No: __-____
Location: _____

Owner: **MONTANA STATE UNIVERSITY** Bidder (Sub-): _____

This request is submitted for the approval of the Architect. Bidder / Sub-Bidder shall submit one request in accordance with Bidders' Instructions and Information for each proposed substitution. All blanks are to be completed.

The material, system, or equipment defined by this Substitution Request is proposed as a replacement for the material, system, or equipment originally specified and defined as follows:

SECTION	PARAGRAPH	SPECIFIED MATERIAL, SYSTEM, OR EQUIPMENT

PROPOSED SUBSTITUTION: The material, system, or equipment being proposed is defined as follows:

_____
_____

- What are the differences between the specified material, system, or equipment and the proposed substitution?

_____

- Does the proposed substitution require dimensional changes on the Construction Drawings? (Y/N)
- Does the proposed substitution require changes to the Work of other trades? (Y/N)
- Is the warranty for the proposed substitution comparable with that of the specified product? (Y/N)

By signing and submitting this request, the Bidder / Sub-Bidder represents that the function, appearance, and quality of the proposed substitution are equivilent or superior to the specified material, system, or equipment.

By signing and submitting this request, the Bidder / Sub-Bidder agrees to pay all costs, including architectural and engineering fees, associated with the incorporation of the proposed substitution into the Project.

_____ _____ _____
SUBMITTED BY (BIDDER / SUB-BIDDER) AUTHORIZED AGENT DATE

Received: _____
DATE

Architect's Action: ☐ Rejected ☐ Rejected – For reasons as follows:

_____
_____
_____

☐ Approved ☐ Approved as noted:

_____
_____
_____

_____ _____ _____
REVIEWED BY (ARCHITECT) AUTHORIZED AGENT DATE

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Sixth Avenue and Grant Street
PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

SCHEDULE OF VALUES

Project Title: _____ PPA No.: _____
Location: _____ Date: _____
Contractor: _____
Address: _____

DIV. NO.	DESCRIPTION	LABOR COSTS	MATERIAL COSTS	OTHER COSTS	TOTAL ITEM COST
	TOTAL COST THIS SHEET				
	TOTAL COST - ADDITIONAL SHEETS				
	TOTAL PROJECT COST				

This Schedule of Values is a statement made by the Contractor to the Architect/Engineer and Owner that allocates the contract sum among the various portions of the Work and shall form the basis for review of the Contractor's Payment Requests.

Submitted by: _____ _____ _____
(Company/Contractor) (Name) (Date)

Reviewed by: _____ _____ _____
(Architect/Engineer) (Name) (Date)

Approved by: Montana State University _____ _____
Campus Planning, Design & Construction (Name) (Date)

STANDARD FORM INSTRUCTIONS

To simplify the form and request for payment process, formulas have been inserted in the form. Fields shaded in light blue are formula fields and cannot be manipulated. Please start by completing the top of Page 1 along with the RED outlined fields, then move to Page 2 inserting the necessary detail. Formulas will pull the detail from Page 2 into Page 1 to correctly calculate payment due. Don't forget to check your retainage calculation for each request submitted. Retainage is calculated at 5%, which is the default contractual retainage. [Please see the instructions below if you are working under an MSU Bozeman General Services Contract.]

SUBMISSION

Periodic Estimates for Partial Payment (Form 101) should be submitted with a valid signature at the bottom of Page 1.

With the exception of Final Requests for payment, Faxed or Scanned/Emailed requests for payment are acceptable with a valid signature and date. Faxed Requests should be sent to 406-994-6572 Attn: Accounting. Emailed requests should be sent to ara.meskimen@montana.edu.

CONSULTANT APPROVAL

If there is an Architectual Firm (Consultant) assigned to your project their approval is required prior to submitting the request for payment to MSU. Please submit the Perodic Estimate for Partial Payment (Form 101) to the consultant on the project directly, they will route the request for payment to MSU once they have approved it.

COMPLETE BOTH PAGES

Please complete BOTH pages of the Periodic Estimate for Partial Payment (Form 101). Because both pages are contract documents, your request can be declined if both pages are not completed. Also, your amount due is calculated from the detail on Page 2, it will not calculate appropriately without Page 2 completed. *(Use the tabs at the bottom of Excel to move between the instructions and both pages)*

FINAL REQUESTS

Final Requests for payment need to be submitted with an original Notorized and Signed Affidavit of Completion (Form 108)
Retainage will be held on Final Requests received without an Affidavit of Completion attached or on file.

RETAINAGE CALCULATION

The retainage field auto calculates the default contract retainage amount of 5%. This field can be overwritten in order for the contractor to request no retainage holding or a reduced retainage holding amount. Please keep in mind that MSU Bozeman reserves the right to make changes to the submitted Periodic Estimate For Partial Payment (Form 101) in keeping with the signed contractual agreement between MSU Bozeman and the contractor.

GENERAL SERVICE CONTRACT INSTRUCTIONS

If you are a contractor working under an MSU Bozeman issued General Services contract. Please request the electronic version of the GENERAL SERVICES pay request form.

If you have questions on the **Pay Request Form** or need additional information regarding the usage of this form:
Please Contact:

Ara Meskimen | MSU Bozeman
ara.meskimen@montana.edu
406-994-5461

If you have questions on **Change Orders, Addendums, Contracts, or other Contract Documents** related to your work on campus:
Please Contact:

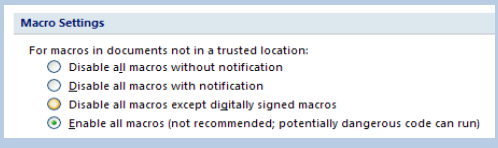
Your Project Manager OR

Rebecca Barney | MSU Bozeman
Rebecca.Barney@montana.edu
406-994-5287

HINTS:

Please note: the Macro Settings for the user computer need to be set at "Enable" in order to run the **PRINT** and **RESET FORM** macros.

That can be done by entering the Trust Center for Microsoft Excel and selecting Enable Macros.



**(Trust Center is on Windows XP and newer versions)*
**(Older versions have the "Enable Macros" setting, however, it is under Security settings)*

If you need additional help adjusting these settings do a search under Microsoft Excel Help for "Enable Macros", there you can get step by step instructions for adjusting your macro settings.

MONTANA STATE UNIVERSITY

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Sixth Avenue and Grant Street • P.O. Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

PERIODIC ESTIMATE FOR PARTIAL PAYMENT

PPA No.: _____ Date: _____
Period From: _____ To: _____
Pay Estimate No.: _____

Project Title: _____
Location: Montana State University

Contractor: _____
Address: _____
Phone: _____

RETAINAGE ADJUSTMENT

1. Total Retainage to Date:	
2. Less Securities Deposited:	-
3. Retainage Withheld (1 - 2)	-

CONTRACT AMOUNT STATUS

1. Original Contract Amount:		
2. Net +/- by Change Order:	[Pulls from Change Order Summary]	-
3. Contract Amount to Date:		-

CHANGE ORDER SUMMARY

No.	Date Approved	Additions	Deductions
	TOTALS:	-	-
		NET TOTAL:	-

CONTRACT STATUS

1. Work in Place (from next page):	[Column D + E Total - Page 2]	
2. Total Work & Stored Material:	[Column G Total - Page 2]	
3. Retainage Withheld:	5.0%	-
4. Total Earned Less Retainage:		-
5. Less Previous Payments (+ 1 % Tax):		-
6. **Amount Due This Payment:**		-
7. Less 1% State Contractor's Tax:	[Contracts > 4999.99]	-
8. **Payment Due Contractor:**		-

I hereby certify that this submitted request for payment is correct, true and just in all respects and that payment or credit has not previously been received. I further warrant and certify by submission of this request that all previous work for which payment has been received is free and clear of all liens, disputes, claims, security interests, encumbrances, or causes of action of any type or kind in favor of the contractor, subcontractors, material suppliers, or other persons or entities and do hereby release the Owner from such.

Submitted by: _____ _____ Date: _____
(Name)

Reviewed by: _____ _____ Date: _____
(Consultant) (Name)

Approved by: **State of Montana, Montana State University** _____ Date: _____
Facilities Planning, Design and Construction (Name)

SHEET No. 1 OF 2 SHEETS

WORK IN PLACE/STORED MATERIALS

Project Name:
Location: MONTANA STATE UNIVERSITY

Contractor:
Address:

PPA No.:
Date:
Pay Estimate No.:

A	B	C	D	E	F	G		H	I
		(Contract Amt)	WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G / C)	BALANCE TO FINISH (C – G)	RETAINAGE
1									
PAGE TOTALS		-	-	-	-	-		-	-
GRAND TOTALS									

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Phone: (406) 994-5413 • Fax: (406) 994-5665

ACKNOWLEDGEMENT OF SUBCONTRACTORS

Project Title: _____ PPA NO. _____
Location: _____ Date: _____
Contractor: _____
Address: _____

TO: MONTANA STATE UNIVERSITY
CAMPUS PLANNING, DESIGN & CONSTRUCTION
6TH AND GRANT STREET, PO BOX 172760
BOZEMAN, MONTANA 59717-2760

Listed below are the principal subcontractors proposed on this project. *All subcontracts exceeding $5,000 are to be listed.*
The Contractor certifies that these subcontractors:

1. Have been advised of the labor standards and provisions applicable to this project.
2. That all provisions incorporated in the Contract between the Owner and the undersigned contractor will be incorporated in the contracts between the Contractor and any Subcontractors.
3. Are competent to accomplish the work subcontracted to them.

NAME AND ADDRESS OF SUBCONTRACTORS	REGISTRATION NO.	TYPE OF WORK

Submitted by: _____ _____ _____
(Company/Contractor) (Name) (Date)

Reviewed by: _____ _____ _____
(Architect/Engineer) (Name) (Date)

Acknowledged by: Montana State University
Campus Planning, Design & Construction _____ _____
(Name) (Date)

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street • PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

CONSENT OF SURETY

Project: _____
Location: Montana State University
PPA No. _____

TO: Montana State University
Campus Planning, Design & Construction
6TH & Grant, PO Box 172760
Bozeman, Montana 59717-2760

Contractor: _____ Contract Date: _____

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(here insert name and address of Surety Company)

,Surety Company,

on bond of (here insert name and address of Contractor)

,Contractor,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to State of Montana, Owner, as set forth in the said Surety Company's bond. The Surety agrees to be bound to the warranty period under the same conditions as the Contractor. The warranty is defined as commencing with Substantial Completion (or with each Substantial Completion if there is more than one) of the Project, or any portion thereof, and continuing for one (1) calendar year from the date of Final Acceptance of the entire project unless otherwise modified in writing as part of the Substantial Completion or Final Acceptance.

IN WITNESS WHEREOF,

the Surety Company has hereunto set its hand this _____ Day of_____, _____

_____
Surety Company

_____
Signature of Authorized Representative

_____
Title

Attest:
(Seal)

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406/994-5413 FAX 406/994-5665

CONTRACT CHANGE ORDER

Project Name: _____ **PPA No.:** _____
Location: Montana State University, Bozeman, Montana **Chg. Order No.:** _____
Contractor: _____ **Date:** _____
Address: _____ **Phone:** _____

The Contractor is hereby directed to make the following changes in the Contract:

Item No.	DESCRIPTION /UNIT/BREAKDOWN/UNIT COSTS (Indicate Critical Path Schedule impact for each Item) (Indicate Add or Deduct)	COST
	SUBTOTAL (Labor & Materials) =	$0.00
	(All contractor proposals will show break out of O&P) Overhead & Profit @ _____ =	
	TOTAL COST (This Change Order Only) =	**$0.00**

Change In Contract Duration/Time By This Change Order: (No Change) (Increase) (Decrease) BY _____ CALENDAR DAYS

NEW CONTRACT COMPLETION DATE: _____

CONTRACT STATUS

1. Original Contract Amount	
2. Net Change by Previous Change Order(s)	
3. Current Contract Amount (1+2)	$0.00
4. This Change Order Total Amount	$0.00
5. New Contract Amount (3+4)	$0.00
6. Total Cost of All Change Orders to Date (2+4)	$0.00

PPA No. _____

Change Order No.: _____

JUSTIFICATION FOR CHANGE(S) (To be completed by Architect/Engineer):

Describe the details which mandate the change(s).

JUSTIFICATION FOR COST ADJUSTMENT (To be completed by Architect/Engineer):

Describe the basis used to calculate the cost adjustment.

JUSTIFICATION FOR SCHEDULE ADJUSTMENT (To be completed by Architect/Engineer):

Describe the impact of adjustment(s) to the critical path.

APPROVALS

By signature on this change order, the Contractor certifies that this change order is complete and includes all direct costs, indirect costs and consequential items (including additional time, if any) and is free and clear of any and all claims or disputes (including, but not limited to, additional costs, additional time, disruptions, and impacts) in favor of the Contractor, subcontractors, material suppliers, or other persons or entities concerning this change order and on all previously contracted Work and does hereby release the Owner from such.

Approved by Contractor: _____

(Company) (Signature)

Recommended by Architect/Engineer: _____

(Company) (Signature)

Surety Consent: SURETY CONSENT IS REQUIRED IF THE TOTAL AMOUNT OF ALL CHANGE ORDERS (LINE 6) EXECEEDS 10% OF THE ORIGINAL CONTRACT AMOUNT.

The Surety consents to this Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as modified or amended per this Change Order. The principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bond and Labor & Material Bond is increased by:

(___)

By One Hundred Percent (100%) of ALL Change Orders

Countersigned by Resident Agent:

Surety:

Recommended by: CPDC Project Manager:

_____

(Signature) Date:

Accepted by: _____

(Signature) MSU Campus Planning, Design, & Construction Date:

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CONTRACTOR'S AFFIDAVIT OF COMPLETION PAYMENT OF DEBTS AND CLAIMS, AND RELEASE OF LIENS

Project Name: _____
Location: Montana State University
PPA No.: _____

I CERTIFY to the best of my knowledge and belief that all work has been performed and materials supplied in strict accordance with the terms and conditions of the corresponding contract documents between the STATE OF MONTANA, acting by and through its DIRECTOR, MONTANA STATE UNIVERSITY, CAMPUS PLANNING, DESIGN & CONSTRUCTION, hereinafter called the Owner, and _____, hereinafter called the CONTRACTOR, for the above referenced project.

I further certify and declare that all bills for materials, supplies, utilities and for all other things furnished or caused to be furnished by the CONTRACTOR and used in the execution of the contract will be fully paid upon receipt of Final Payment and that there are no unpaid obligations, liens, claims, security interests, encumbrances, liabilities and/or demands of State Agencies, subcontractors, material men, mechanics, laborers or any others resulting from or arising out of any work done, caused to be done or ordered to be done by the CONTRACTOR under the contract.

In consideration of the prior and final payments made and all payments made for authorized changes, the CONTRACTOR releases and forever discharges the OWNER from any and all obligations, liens, claims, security interests, encumbrances and/or liabilities arising by virtue of the contract and authorized changes between the parties, either verbal or in writing, and any and all claims and demands of every kind and character whatsoever against the OWNER, arising out of or in any way relating to the contract and authorized changes.

I further certify and agree that the warranty period is defined as commencing with Substantial Completion (or with each Substantial Completion if there is more than one) of the Project, or any portion thereof, and continuing for one (1) calendar year from the date of Final Acceptance of the entire project unless otherwise modified in writing as part of the Substantial Completion or Final Acceptance.

This statement is made for the purpose of inducing the OWNER to make FINAL PAYMENT under the terms of the contract, relying on the truth and statements contained herein.

(Seal)

CONTRACTOR

_____
_____
_____
_____

_____ _____
(Signature) (Title)

State of Montana
County of _____

Subscribed and sworn to me this _____ Day of_____, _____

(Seal)

NOTARY

_____
Notary Public for the State of Montana
My Commission Expires:

Montana State University
Campus Planning, Design & Construction
Sixth & Grant Street, PO Box 172760 Bozeman, Montana 59717
Phone: 406 994-5413 • Fax: 406 994-5665

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name:_____ PPA NO.:_____
Project Address:_____Date:_____

To: Montana State University
Campus Planning, Design & Construction
6TH & Grant, PO Box 172760
Bozeman, Montana 59717-2760

Architect/Engineer: _____
_____
_____

Contractor: _____ Contract Date: _____
_____ Contract Award Amount: _____

_____

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The work performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above, which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below is hereby established as:

BASIC PROJECT INFORMATION (required by Risk & Tort Defense Division)	NEW	REMODEL/RENOVATION
Total Square Footage	Sq. Ft.	Sq. Ft.
General Construction Material (e.g. masonry, metal panel, wood, etc.)		
Total Construction Cost		
Fire Sprinklers Installed (yes/no)	☐ Yes ☐ No	☐ Yes ☐ No
Estimated Date of Occupancy (if different from date of Substantial)		
Building Usage:		
Safety Consultation with DLI:	☐ Yes ☐ No	☐ Yes ☐ No
Additional Comments:		

Definition of Date of Substantial Completion

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Architect/Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Architect/Engineer, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all the Work in accordance with the Contract Documents. The warranty period is defined as commencing with Substantial Completion (or with each Substantial Completion if there is more than one) of the Project, or any portion thereof, and continuing for one (1) calendar year from the date of Final Acceptance of the entire project unless otherwise modified in writing as part of the Substantial Completion or Final Acceptance.

Architect/Engineer	Signature	Date

The Contractor will complete or correct the Work on the list of items attached hereto within _____ days from the above Date of Substantial Completion.

Contractor	Signature	Date

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at _____ (Time) on _____ (Date)

Montana State University

Owner	Signature	Date

The responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work and insurance will be as follows (use attachments as necessary):

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Phone: (406) 994-5413 • Fax: (406) 994-5665

CONSTRUCTION CHANGE DIRECTIVE

Project Name: _____ PPA No.: _____

Location: Montana State University Date: _____

Contractor: _____ Change Directive No.: CCD-_____

_____

_____

Owner: Montana State University
Campus Planning, Design & Construction
6TH & Grant, PO Box 172760
Bozeman, Montana 59717-2760

Architect/Engineer: _____

_____

_____

The Contractor is directed to proceed as described below. Proceed with this Work promptly. Costs for the Work (if any) involved and change in Contract Time (if any) will be included in a subsequent Change Order.

Description:

Attachments: (insert listing of documents that support description)

The following is based on information provided by the Contractor:

☐ Lump Sum
☐ Unit Price
☐ Estimated Not To Exceed

Change in Contract Sum of _____

☐ Fixed
☐ Estimated
☐ Maximum

Change in Contract Time of _____ Calendar Days.

Issued by Arch/Eng.: _____ By: _____ Date: _____

Accepted by Owner: Montana State University
Campus Planning, Design & Construction By: _____ Date: _____

Accepted by Contractor: _____ By: _____ Date: _____

MONTANA
STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street
PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

REQUEST FOR INFORMATION

Project Title: _____ PPA No.: _____
Location: Montana State University RFI No.: _____
Date: _____

To: _____ Attention: _____

From: _____ Attention: _____

Trades Affected: _____

In order to expedite the Work and avoid or minimize delays in the Work the following information is requested. Please return a response by: _____ Date Sent: _____ Date Received: _____

Information Requested:

Response:

Response Date: _____ Respondent: _____

☐ Cost Impact
☐ Schedule Impact

This RFI is for clarification only. The contractor shall document the Owner's Representative within 48 hours if he/she feels the response to this RFI constitutes additional work.

Distribution: ☐ Owner ☐ Architect ☐ Engineer
☐ Agency ☐ Contractor ☐ Other

MONTANA
STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street
PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we:

_____

(Contractor), hereinafter called the Principal, and

_____

(Surety), a corporation licensed to do business as a surety under the laws of the State of Montana, hereinafter called Surety, are held and firmly bound unto the State of Montana in the full and just sum of:

_____**DOLLARS ($_____)**
Alpha Notation Numeric Notation

to be paid to the State of Montana or its assigns, to which payment we bind ourselves, heirs, executors, administrators, successors and assigns, jointly, severally, firmly by this bond.

WHEREAS, the Principal has entered into a contract with State of Montana, acting by and through its Director, Montana State University, Campus Planning, Design & Construction dated _____ and whereas it is one of the conditions of the award of the contract pursuant to statutes that this bond be executed for the Project entitled:

Project Title:_____
Montana State University
PPA No.: __-____

NOW, THEREFORE, the conditions of this obligation are such that if the above Principal as Contractor shall promptly and faithfully perform all of the provisions of the contract, and all obligations thereunder including the specifications, and any alterations provided for, and shall in a manner satisfactory to the State of Montana, complete the work contracted for including any alterations, and shall save harmless the State of Montana from any expense incurred through the failure of the Contractor to complete the work as specified, then this obligation shall be void; otherwise it shall remain in full force and effect.

The surety hereby waives notice of any extension of time and any alterations made in the terms of the contract, unless the cumulative cost of such alterations cause the total project cost to exceed the original contract sum by more than 10%.

FOR STATE USE ONLY:

Surety is licensed in MT: ☐ Yes ☐ No

Date verified: _____

Verified by: _____
Montana State University
State of Montana

Contractor: _____
(signature)

_____
(print name)

_____
(date)

Surety: _____
(print name)

_____
(date)

By: _____
(Attorney-in-Fact, seal & signature)

_____
(Agency)

_____
(Street Address)

_____
(Address)

_____
(Phone/Fax)

MONTANA
STATE UNIVERSITY

CAMPUS PLANNING, DESIGN & CONSTRUCTION
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PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

LABOR & MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we:

_____

(Contractor), hereinafter called the Principal, and

_____

(Surety), a corporation licensed to do business as a surety under the laws of the State of Montana, hereinafter called Surety, are held and firmly bound unto the State of Montana in the full and just sum of:

_____ **DOLLARS ($)**
Alpha Notation Numeric Notation

to be paid to the State of Montana or its assigns, to which payment we bind ourselves, heirs, executors, administrators, successors and assigns, jointly, severally, firmly by this bond.

WHEREAS, the Principal has entered into a contract with State of Montana, acting by and through its Director, Montana State University, Campus Planning, Design & Construction dated and whereas it is one of the conditions of the award of the contract pursuant to statutes that this bond be executed for the Project entitled:

Project Title: _____
Montana State University
PPA No.: __-____

NOW, THEREFORE, the conditions of this obligation are such that if the above Principal as Contractor shall duly and promptly pay all laborers, mechanics, subcontractors and material men who perform work or furnish material under the contract and all persons who shall supply him or the subcontractor with materials, services, bonds and insurance for the carrying on of the work, then this obligation shall be void; otherwise it shall remain in full force and effect and shall save harmless the State of Montana from any expense incurred through the failure of the Contractor to comply.

The surety hereby waives notice of any extension of time and any alterations made in the terms of the contract, unless the cumulative cost of such alterations cause the total project cost to exceed the original contract sum by more than 10%.

FOR STATE USE ONLY:

Surety is licensed in MT: ☐ Yes ☐ No

Date verified: _____

Verified by: _____
Montana State University
State of Montana

Contractor: _____
(signature)

_____
(print name)

_____
(date)

Surety: _____
(print name)

_____
(date)

By: _____
(Attorney-in-Fact, seal & signature)

_____
(Agency)

_____
(Street Address)

_____
(Address)

CAMPUS PLANNING, DESIGN & CONSTRUCTION
Sixth Avenue and Grant Street • PO Box 172760 • Bozeman, Montana 59717-2760
Phone: (406) 994-5413 • Fax: (406) 994-5665

CERTIFICATE OF FINAL ACCEPTANCE

Project Title: _____ PPA NO.: __-____
Location: Montana State University Date: _____

To: Montana State University
Campus Planning, Design & Construction
PO Box 172760
Bozeman, Montana 59717-2760

Architect/Engineer: _____
_____
_____

Contractor: _____ Contract Date: _____
_____ Contract Amount: _____
_____

The Work performed under this Contract has been reviewed and found to be complete and has reached Final Acceptance. The Date of Final Acceptance of the Work is defined as the Date Certified by the Architect/Engineer upon which the Work is fully complete in all aspects, **and** which the Owner accepts the Contractor's work as complete. The Date of Final Acceptance of the Project, or portion thereof designated above, is also the basis for commencement of the DURATION of applicable warranties required by the Contract Documents. The Warranty Period is defined in the Contract Documents as commencing with Substantial Completion(s) and continuing for one (1) calendar year from the Date of Final Acceptance. This date shall correspond to the date of the Architect/Engineer's approval on the final pay application unless otherwise agreed upon in writing. In the event of a disparity between the date of the Architect/Engineer's approval and this form, if no other written agreement exists as to the date of final acceptance, this form shall constitute such agreement and it shall govern as the date of Final Acceptance.

Date of Substantial Completion:	Date of Final Acceptance:	Date of Warranty Expiration:

Notes:

_____ _____ _____
Architect/Engineer By Date

_____ _____ _____
Contractor By Date

State of Montana
Montana State University
Campus Planning, Design & Construction
_____ _____ _____
Owner By Date

MONTANA
PREVAILING WAGE RATES FOR BUILDING CONSTRUCTION SERVICES 2019

Effective: January 26, 2019

Steve Bullock, Governor
State of Montana

Galen Hollenbaugh, Commissioner
Department of Labor and Industry

To obtain copies of prevailing wage rate schedules, or for information relating to public works projects and payment of prevailing wage rates, visit ERD at www.mtwagehourbopa.com or contact:

Employment Relations Division
Montana Department of Labor and Industry
P. O. Box 201503
Helena, MT 59620-1503
Phone 406-444-5600
TDD 406-444-5549

The Labor Standards Bureau welcomes questions, comments, and suggestions from the public. In addition, we'll do our best to provide information in an accessible format, upon request, in compliance with the Americans with Disabilities Act.

MONTANA PREVAILING WAGE REQUIREMENTS

The Commissioner of the Department of Labor and Industry, in accordance with Sections 18-2-401 and 18-2-402 of the Montana Code Annotated (MCA), has determined the standard prevailing rate of wages for the occupations listed in this publication.

The wages specified herein control the prevailing rate of wages for the purposes of Section 18-2-401, et seq., MCA. It is required each employer pay (as a minimum) the rate of wages, including fringe benefits, travel allowance, zone pay and per diem applicable to the district in which the work is being performed as provided in the attached wage determinations.

All Montana Prevailing Wage Rates are available on the internet at www.mtwagehourbopa.com or by contacting the Labor Standards Bureau at (406) 444-5600 or TDD (406) 444-5549.

In addition, this publication provides general information concerning compliance with Montana's Prevailing Wage Law and the payment of prevailing wages. For detailed compliance information relating to public works contracts and payment of prevailing wage rates, please consult the regulations on the internet at www.mtwagehourbopa.com or contact the Labor Standards Bureau at (406) 444-5600 or TDD (406) 444-5549.

GALEN HOLLENBAUGH
Commissioner
Department of Labor and Industry
State of Montana

TABLE OF CONTENTS

MONTANA PREVAILING WAGE REQUIREMENTS:

WAGE RATES:

A. Date of Publication January 26, 2019

B. Definition of Building Construction
For the purposes of Prevailing Wage, the Commissioner of Labor and Industry has determined that building construction occupations are defined to be those performed by a person engaged in a recognized trade or craft, or any skilled, semi-skilled, or unskilled manual labor related to the construction, alteration, or repair of a public building or facility, and does not include engineering, superintendence, management, office or clerical work.

The Administrative Rules of Montana (ARM), 24.17.501(2) – 2(a), states *"Building construction projects generally are the constructions of sheltered enclosures with walk-in access for housing persons, machinery, equipment, or supplies. It includes all construction of such structures, incidental installation of utilities and equipment, both above and below grade level, as well as incidental grading, utilities and paving.*

Examples of building construction include, but are not limited to, alterations and additions to buildings, apartment buildings (5 stories and above), arenas (closed), auditoriums, automobile parking garages, banks and financial buildings, barracks, churches, city halls, civic centers, commercial buildings, court houses, detention facilities, dormitories, farm buildings, fire stations, hospitals, hotels, industrial buildings, institutional buildings, libraries, mausoleums, motels, museums, nursing and convalescent facilities, office buildings, out-patient clinics, passenger and freight terminal buildings, police stations, post offices, power plants, prefabricated buildings, remodeling buildings, renovating buildings, repairing buildings, restaurants, schools, service stations, shopping centers, stores, subway stations, theaters, warehouses, water and sewage treatment plants (buildings only), etc."

C. Definition of Public Works Contract
Section 18-2-401(11)(a), MCA defines "public works contract" as *"…a contract for construction services let by the state, county, municipality, school district, or political subdivision or for nonconstruction services let by the state, county, municipality, or political subdivision in which the total cost of the contract is in excess of $25,000…".*

D. Prevailing Wage Schedule
This publication covers only Building Construction occupations and rates. These rates will remain in effect until superseded by a more current publication. Current prevailing wage rate schedules for Heavy Construction, Highway Construction, and Nonconstruction Services occupations can be found on the internet at www.mtwagehoubopa.com or by contacting the Labor Standards Bureau at (406) 444-5600 or TDD (406) 444-5549.

E. Rates to Use for Projects
ARM, 24.17.127(1)(c), states *"The wage rates applicable to a particular public works project are those in effect at the time the bid specifications are advertised."*

F. Wage Rate Adjustments for Multiyear Contracts
Section 18-2-417, MCA states:

"(1) Any public works contract that by the terms of the original contract calls for more than 30 months to fully perform must include a provision to adjust, as provided in subsection (2), the standard prevailing rate of wages to be paid to the workers performing the contract.

(2) The standard prevailing rate of wages paid to workers under a contract subject to this section must be adjusted 12 months after the date of the award of the public works contract. The amount of the adjustment must be a 3% increase. The adjustment must be made and applied every 12 months for the term of the contract.

(3) Any increase in the standard rate of prevailing wages for workers under this section is the sole responsibility of the contractor and any subcontractors and not the contracting agency."

G. Fringe Benefits
Section 18-2-412, MCA states:

"(1) To fulfill the obligation...a contractor or subcontractor may:

(a) pay the amount of fringe benefits and the basic hourly rate of pay that is part of the standard prevailing rate of wages directly to the worker or employee in cash;

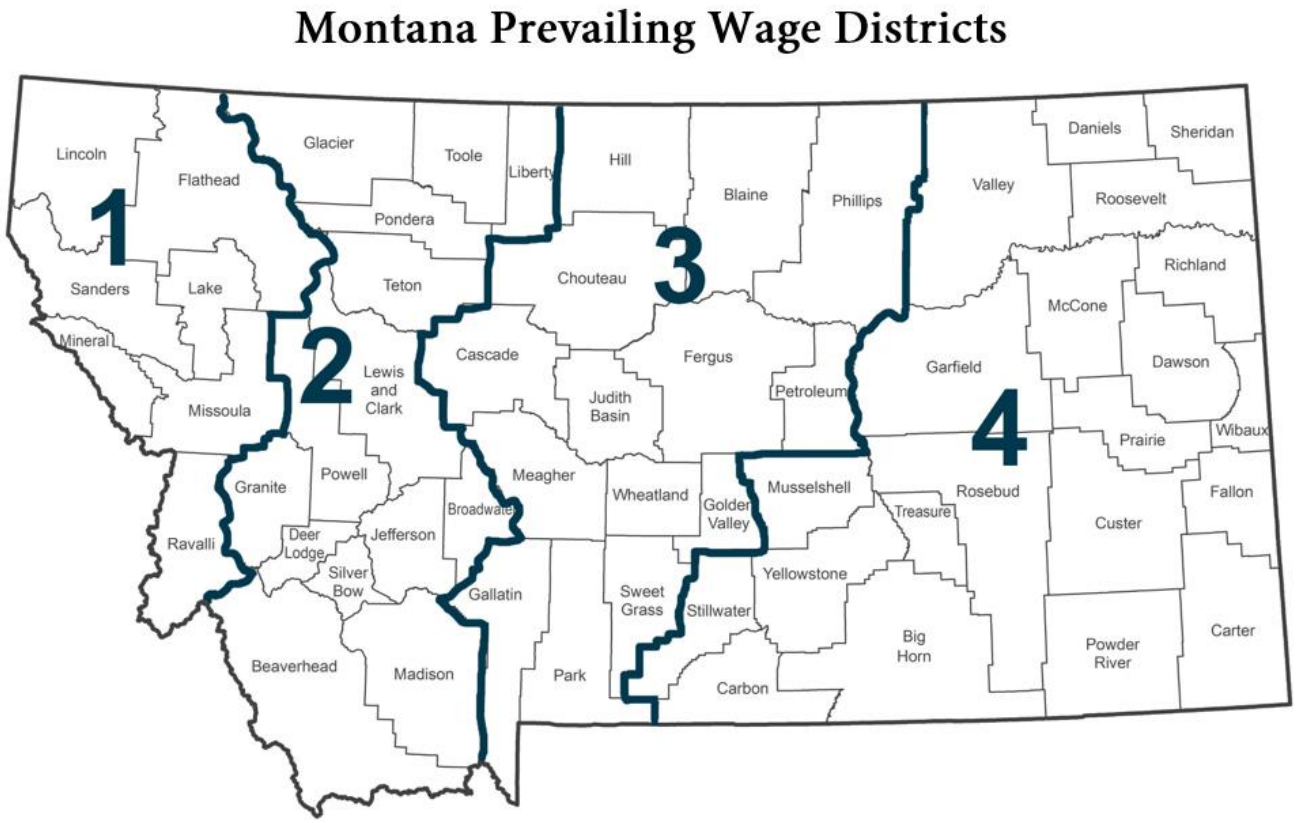
(b) make an irrevocable contribution to a trustee or a third person pursuant to a fringe benefit fund, plan, or program that meets the requirements of the Employee Retirement Income Security Act of 1974 or that is a bona fide program approved by the U. S. department of labor; or

(c) make payments using any combination of methods set forth in subsections (1)(a) and (1)(b) so that the aggregate of payments and contributions is not less than the standard prevailing rate of wages, including fringe benefits and travel allowances, applicable to the district for the particular type of work being performed.

(2) The fringe benefit fund, plan, or program described in subsection (1)(b) must provide benefits to workers or employees for health care, pensions on retirement or death, life insurance, disability and sickness insurance, or bona fide programs that meet the requirements of the Employee Retirement Income Security Act of 1974 or that are approved by the U. S. department of labor."

Fringe benefits are paid for all hours worked (straight time and overtime hours). However, fringe benefits are not to be considered a part of the hourly rate of pay for calculating overtime, unless there is a collectively bargained agreement in effect that specifies otherwise.

H. Prevailing Wage Districts
Montana counties are aggregated into 4 districts for the purpose of prevailing wage. The prevailing wage districts are composed of the following counties:



I. Dispatch City
ARM, 24.17.103(11), defines dispatch city as *"...the courthouse in the city from the following list which is closest to the center of the job: Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula."* A dispatch city shall be considered the point of origin only for jobs within the counties identified in that district (as shown below):

> **District 1 – Kalispell and Missoula:** includes Flathead, Lake, Lincoln, Mineral, Missoula, Ravalli, and Sanders;
> **District 2 – Butte and Helena:** includes Beaverhead, Broadwater, Deer Lodge, Glacier, Granite, Jefferson, Lewis and Clark, Liberty, Madison, Pondera, Powell, Silver Bow, Teton, and Toole;
> **District 3 – Bozeman and Great Falls:** includes Blaine, Cascade, Chouteau, Fergus, Gallatin, Golden Valley, Hill, Judith Basin, Meagher, Park, Petroleum, Phillips, Sweet Grass, and Wheatland;
> **District 4 – Billings:** includes Big Horn, Carbon, Carter, Custer, Daniels, Dawson, Fallon, Garfield, McCone, Musselshell, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Treasure, Valley, Wibaux, and Yellowstone.

J. Zone Pay
Zone pay is not travel pay. ARM, 24.17.103(24), defines zone pay as *"...an amount added to the base pay; the combined sum then becomes the new base wage rate to be paid for all hours worked on the project. Zone pay must be determined by measuring the road miles one way over the shortest practical maintained route from the dispatch city to the center of the job."* See section I above for a list of dispatch cities.

K. Computing Travel Benefits
ARM, 24.17.103(22), states *" 'Travel pay,' also referred to as 'travel allowance,' is and must be paid for travel both to and from the job site, except those with special provisions listed under the classification. The rate is determined by measuring the road miles one direction over the shortest practical maintained route from the dispatch city or the employee's home, whichever is closer, to the center of the job."* See section I above for a list of dispatch cities.

L. Per Diem
ARM, 24.17.103(18), states *" 'Per diem' typically covers costs associated with board and lodging expenses. Per diem is paid when an employee is required to work at a location outside the daily commuting distance and is required to stay at that location overnight or longer."*

M. Apprentices
Wage rates for apprentices registered in approved federal or state apprenticeship programs are contained in those programs. Additionally, Section 18-2-416(2), MCA states *"...The full amount of any applicable fringe benefits must be paid to the apprentice while the apprentice is working on the public works contract."* Apprentices not registered in approved federal or state apprenticeship programs will be paid the appropriate journey level prevailing wage rate when working on a public works contract.

N. Posting Notice of Prevailing Wages
Section 18-2-406, MCA provides that contractors, subcontractors and employers who are *"...performing work or providing construction services under public works contracts, as provided in this part, shall post in a prominent and accessible site on the project or staging area, not later than the first day of work and continuing for the entire duration of the project, a legible statement of all wages and fringe benefits to be paid to the employees."*

O. Employment Preference
Sections 18-2-403 and 18-2-409, MCA requires contractors to give preference to the employment of bona fide Montana residents in the performance of work on public works contracts.

P. Projects of a Mixed Nature
Section 18-2-408, MCA states:

"(1) The contracting agency shall determine, based on the preponderance of labor hours to be worked, whether the public works construction services project is classified as a highway construction project, a heavy construction project, or a building construction project.

(2) Once the project has been classified, employees in each trade classification who are working on that project must be paid at the rate for that project classification"

Q. Occupations Definitions
You can find definitions for these occupations on the following Bureau of Labor Statistics website:
http://www.bls.gov/oes/current/oes_stru.htm

R. Welder Rates
Welders receive the rate prescribed for the craft performing an operation to which welding is incidental.

S. Foreman Rates
Rates are no longer set for foremen. However, if a foreman performs journey level work, the foreman must be paid at least the journey level rate.

WAGE RATES

BOILERMAKERS

	Wage	Benefit
District 1	$32.19	$30.61
District 2	$32.19	$30.61
District 3	$32.19	$30.61
District 4	$32.19	$30.61

Duties Include:
Construct, assemble, maintain, and repair stationary steam boilers, boiler house auxiliaries, process vessels, and pressure vessels.

Travel:
All Districts
0-120 mi. free zone
>120 mi. federal mileage rate/mi.

Special Provision:
Travel is paid only at the beginning and end of the job.

Per Diem:
All Districts
0-70 mi. free zone
>70-120 mi. $65.00/day
>120 mi. $80.00/day

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BRICK, BLOCK, AND STONE MASONS

	Wage	Benefit
District 1	$28.71	$14.79
District 2	$28.71	$14.79
District 3	$28.71	$14.79
District 4	$28.71	$14.79

Travel:
All Districts
0-45 mi. free zone
>45-60 mi. $32.50/day
>60-90 mi. $62.00/day
>90 mi. $75.00/day

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CARPENTERS

	Wage	Benefit
District 1	$23.00	$13.07
District 2	$23.00	$13.36
District 3	$23.23	$13.07
District 4	$23.00	$13.07

Duties Include:
Install roll and batt insulation, and hardwood floors.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $4.00/hr.
>60 mi. base pay + $6.00/hr.

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CEMENT MASONS AND CONCRETE FINISHERS

	Wage	Benefit
District 1	$22.21	$12.18
District 2	$22.21	$12.18
District 3	$21.80	$12.18
District 4	$22.21	$12.18

Duties Include:
Smooth and finish surfaces of poured concrete, such as floors, walks, sidewalks, or curbs. Align forms for sidewalks, curbs, or gutters.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $2.95/hr.
>60 mi. base pay + $4.75/hr.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 1

	Wage	Benefit
District 1	$27.41	$13.25
District 2	$27.41	$13.25
District 3	$27.41	$13.25
District 4	$27.41	$13.25

This group includes but is not limited to:
Air Compressor; Auto Fine Grader; Belt Finishing; Boring Machine (Small); Cement Silo; Crane, A-Frame Truck Crane; Crusher Conveyor; DW-10, 15, and 20 Tractor Roller; Farm Tractor; Forklift; Form Grader; Front-End Loader, under 1 cu. yd; Oiler, Heavy Duty Drills; Herman Nelson Heater; Mucking Machine; Oiler, All Except Cranes/Shovels; Pumpman.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 2

	Wage	Benefit
District 1	$28.20	$13.25
District 2	$28.20	$13.25
District 3	$28.20	$13.25
District 4	$28.20	$13.25

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

This group includes but is not limited to:
Air Doctor; Backhoe\Excavator\Shovel, up to and incl. 3 cu. yds; Bit Grinder; Bitunimous Paving Travel Plant; Boring Machine, Large; Broom, Self-Propelled; Concrete Travel Batcher; Concrete Float & Spreader; Concrete Bucket Dispatcher; Concrete Finish Machine; Concrete Conveyor; Distributor; Dozer, Rubber-Tired, Push, & Side Boom; Elevating Grader\Gradall; Field Equipment Serviceman; Front-End Loader, 1 cu. yd up to and incl. 5 cu. yds; Grade Setter; Gravel Conveyor; Heavy Duty Drills, All Types; Hoist\Tugger, All; Hydralift Forklifts & Similar; Industrial Locomotive; Motor Patrol (except finish); Mountain Skidder; Oiler, Cranes\Shovels; Pavement Breaker, EMSCO; Power Saw, Self-Propelled; Pugmill; Pumpcrete\Grout Machine; Punch Truck; Roller, other than Asphalt; Roller, Sheepsfoot (Self-Propelled); Roller, 25 tons and over; Ross Carrier; Rotomill, under 6 ft; Trenching Machine; Washing /Screening Plant.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 3

	Wage	Benefit
District 1	$28.95	$13.25
District 2	$28.95	$13.25
District 3	$28.95	$13.25
District 4	$28.95	$13.25

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

This group includes but is not limited to:
Asphalt Paving Machine; Asphalt Screed; Backhoe\Excavator\Shovel, over 3 cu. yds; Cableway Highline; Concrete Batch Plant; Concrete Curing Machine; Concrete Pump; Cranes, Creter; Cranes, Electric Overhead; Cranes, 24 tons and under; Curb Machine\Slip Form Paver; Finish Dozer; Front-End Loader, over 5 cu. yds; Mechanic\Welder; Pioneer Dozer; Roller Asphalt (Breakdown & Finish); Rotomill, over 6 ft; Scraper, Single, Twin, or Pulling Belly-Dump; YO-YO Cat.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 4

	Wage	Benefit
District 1	$29.95	$13.25
District 2	$29.95	$13.25
District 3	$29.95	$13.25
District 4	$29.95	$13.25

This group includes but is not limited to:
Asphalt\Hot Plant Operator; Cranes, 25 tons up to and incl. 44 tons; Crusher Operator; Finish Motor Patrol; Finish Scraper.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 5

	Wage	Benefit
District 1	$30.95	$13.25
District 2	$30.95	$13.25
District 3	$30.95	$13.25
District 4	$30.95	$13.25

This group includes but is not limited to:
Cranes, 45 tons up to and incl. 74 tons.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 6

	Wage	Benefit
District 1	$31.95	$13.25
District 2	$31.95	$13.25
District 3	$31.95	$13.25
District 4	$31.95	$13.25

This group includes but is not limited to:
Cranes, 75 tons up to and incl. 149 tons; Cranes, Whirley (All).

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

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CONSTRUCTION EQUIPMENT OPERATORS GROUP 7

	Wage	Benefit
District 1	$32.95	$13.25
District 2	$32.95	$13.25
District 3	$32.95	$13.25
District 4	$32.95	$13.25

This group includes but is not limited to:
Cranes, 150 tons up to and incl. 250 tons; Cranes, over 250 tons—add $1.00 for every 100 tons over 250 tons; Crane, Tower (All); Crane Stiff-Leg or Derrick; Helicopter Hoist.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

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CONSTRUCTION LABORERS GROUP 1/FLAG PERSON FOR TRAFFIC CONTROL

	Wage	Benefit
District 1	$19.90	$9.22
District 2	$19.90	$9.22
District 3	$19.90	$9.22
District 4	$19.90	$9.22

Zone Pay:
All Districts
0-15 mi. free zone
>15-30 mi. base pay + $0.65/hr.
>30-50 mi. base pay + $0.85/hr.
>50 mi. base pay + $1.25/hr.

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CONSTRUCTION LABORERS GROUP 2

	Wage	Benefit
District 1	$19.11	$6.92
District 2	$22.35	$9.22
District 3	$22.67	$5.18
District 4	$20.87	$4.93

This group includes but is not limited to:
General Labor; Asbestos Removal; Burning Bar; Bucket Man; Carpenter Tender; Caisson Worker; Cement Mason Tender; Cement Handler (dry); Chuck Tender; Choker Setter; Concrete Worker; Curb Machine-lay Down; Crusher and Batch Worker; Heater Tender; Fence Erector; Landscape Laborer; Landscaper; Lawn Sprinkler Installer; Pipe Wrapper; Pot Tender; Powderman Tender; Rail and Truck Loaders and Unloaders; Riprapper; Sign Erection; Guardrail and Jersey Rail; Spike Driver; Stake Jumper; Signalman; Tail Hoseman; Tool Checker and Houseman and Traffic Control Worker.

Zone Pay:
All Districts
0-15 mi. free zone
>15-30 mi. base pay + $0.65/hr.
>30-50 mi. base pay + $0.85/hr.
>50 mi. base pay + $1.25/hr.

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CONSTRUCTION LABORERS GROUP 3

	Wage	Benefit
District 1	$20.90	$9.22
District 2	$20.90	$9.22
District 3	$20.90	$9.22
District 4	$20.90	$9.22

This group includes but is not limited to:
Concrete Vibrator; Dumpman (Grademan); Equipment Handler; Geotextile and Liners; High-Pressure Nozzleman; Jackhammer (Pavement Breaker) Non-Riding Rollers; Pipelayer; Posthole Digger (Power); Power Driven Wheelbarrow; Rigger; Sandblaster; Sod Cutter-Power and Tamper.

Zone Pay:
All Districts
0-15 mi. free zone
>15-30 mi. base pay + $0.65/hr.
>30-50 mi. base pay + $0.85/hr.
>50 mi. base pay + $1.25/hr.

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CONSTRUCTION LABORERS GROUP 4

	Wage	Benefit
District 1	$22.44	$9.67
District 2	$22.44	$9.67
District 3	$22.44	$9.67
District 4	$22.44	$9.67

This group includes but is not limited to:
Hod Carrier*******; Water Well Laborer; Blaster; Wagon Driller; Asphalt Raker; Cutting Torch; Grade Setter; High-Scaler; Power Saws (Faller & Concrete) Powderman; Rock & Core Drill; Track or Truck Mounted Wagon Drill and Welder incl. Air Arc.

Zone Pay:
All Districts
0-15 mi. free zone
>15-30 mi. base pay + $0.65/hr.
>30-50 mi. base pay + $0.85/hr.
>50 mi. base pay + $1.25/hr.

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DRYWALL APPLICATORS

	Wage	Benefit
District 1	$23.00	$13.07
District 2	$23.00	$13.36
District 3	$23.00	$13.07
District 4	$23.00	$13.07

Duties Include:
Drywall and ceiling tile installation.

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $4.00/hr.
>60 mi. base pay + $6.00/hr.

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ELECTRICIANS: INCLUDING BUILDING AUTOMATION CONTROL

	Wage	Benefit
District 1	$30.51	$14.17
District 2	$30.38	$13.77
District 3	$31.05	$13.15
District 4	$33.58	$13.93

Duties Include:
Electrical wiring; equipment and fixtures; street lights; electrical control systems. Installation and/or adjusting of building automation controls also during testing and balancing, commissioning and retro-commissioning.

Travel:
District 1
No mileage due when traveling in employer's vehicle.

The following travel allowance is applicable when traveling in employee's vehicle:

0-10 mi. free zone
>10-45 mi. $0.585/mi. in excess of the free zone.
>45 mi. $75.00/day

Districts 2 & 3
No mileage due when traveling in employer's vehicle.

The following travel allowance is applicable when traveling in employee's vehicle:

0-08 mi. free zone
>08-50 mi. federal mileage rate/mi. in excess of the free zone.
>50 mi. $66.00/day

District 4
No mileage due when traveling in employer's vehicle.

The following travel allowance is applicable when traveling in employee's vehicle:

0-18 mi. free zone
>18-60 mi. federal mileage rate/mi.
>60 mi. $75.00/day

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ELEVATOR CONSTRUCTORS

	Wage	Benefit
District 1	$52.41	$33.00
District 2	$52.41	$33.00
District 3	$52.41	$33.00
District 4	$52.41	$33.00

Travel:
All Districts
0-15 mi. free zone
>15-25 mi. $42.01/day
>25-35 mi. $84.01/day
>35 mi. $84.90/day or cost of receipts for hotel and meals, whichever is greater.

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FLOOR LAYERS (EXCEPT CARPET, WOOD, AND HARD TILES)

No Rate Established

Apply blocks, strips, or sheets of shock-absorbing, sound-deadening, or decorative coverings to floors.

Travel and Per Diem:
All Districts
No travel or per diem established

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GLAZIERS

	Wage	***Benefit***
District 1	$18.48	$2.74
District 2	$18.01	$2.50
District 3	$18.82	$2.82
District 4	$19.81	$3.02

Travel and Per Diem:
All Districts
No travel or per diem established.

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HEATING AND AIR CONDITIONING

	Wage	**Benefit**
District 1	$29.62	$18.00
District 2	$29.62	$18.00
District 3	$29.62	$18.00
District 4	$29.62	$18.00

Duties Include:
Testing and balancing, commissioning and retro-commissioning of all air-handling equipment and duct work.

Travel:
All Districts
0-50 mi. free zone
>50 mi.
- $0.25/mi. in employer vehicle.
- $0.65/mi. in employee vehicle.

Per Diem:
All Districts
$70/day

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INSULATION WORKERS - MECHANICAL (HEAT AND FROST)

	Wage	Benefit
District 1	$31.17	$19.47
District 2	$31.17	$19.47
District 3	$31.17	$19.47
District 4	$31.17	$19.47

Duties Include:
Insulate pipes, ductwork or other mechanical systems.

Travel:
All Districts
0-30 mi. free zone
>30-40 mi. $20.00/day
>40-50 mi. $30.00/day
>50-60 mi. $40.00/day
>60 mi. $45.00/day plus
- $0.56/mi. if transportation is not provided.
- $0.20/mi. if in company vehicle.

>60 mi. $86.00/day on jobs requiring an overnight stay plus
- $0.56/mi. if transportation is not provided.
- $0.20/mi. if in company vehicle.

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IRONWORKERS - STRUCTURAL STEEL AND REBAR PLACERS

	Wage	Benefit
District 1	$27.75	$25.45
District 2	$27.25	$22.14
District 3	$27.25	$22.14
District 4	$27.25	$22.14

Duties Include:
Structural steel erection; assemble prefabricated metal buildings; cut, bend, tie, and place rebar; energy producing windmill type towers; metal bleacher seating; handrail fabrication and ornamental steel.

Travel:
District 1
0-45 mi. free zone
>45-60 mi. $40.00/day
>60-100 mi. $65.00/day
>100 mi. $85.00/day

Special Provision:
When the employer provides transportation, travel will not be paid. However, when an employee is required to travel over 70 miles one way, the employee may elect to receive the travel pay in lieu of the transportation.

Districts 2, 3 & 4
0-45 mi. free zone
>45-85 mi. $60.00/day
>85 mi. $90.00/day

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MILLWRIGHTS

	Wage	Benefit
District 1	$33.00	$13.07
District 2	$33.00	$13.36
District 3	$33.00	$13.07
District 4	$33.00	$13.07

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $4.00/hr.
>60 mi. base pay + $6.00/hr.

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PAINTERS: INCLUDING PAPERHANGERS

	Wage	Benefit
District 1	$19.66	$6.98
District 2	$21.42	$6.81
District 3	$23.47	$6.29
District 4	$19.28	$5.84

Travel and Per Diem:
All Districts
No travel or per diem established.

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PILE BUCKS

	Wage	Benefit
District 1	$30.00	$13.07
District 2	$30.00	$13.36
District 3	$30.00	$13.07
District 4	$30.00	$13.07

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $4.00/hr.
>60 mi. base pay + $6.00/hr.

Duties Include:
Set up crane; set up hammer; weld tips on piles; set leads; insure piles are driven straight with the use of level or plum bob. Give direction to crane operator as to speed and direction of swing. Cut piles to grade.

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PLASTERERS

	Wage	Benefit
District 1	$22.21	$12.18
District 2	$22.21	$12.18
District 3	$21.80	$12.18
District 4	$22.21	$12.18

Zone Pay:
All Districts
0-30 mi. free zone
>30-60 mi. base pay + $2.95/hr.
>60 mi. base pay + $4.75/hr

Duties Include:
All materials beyond the substrate, such as a moisture barrier, any type of drainage installation between the moisture barrier and insulation or EPS board, the attachment of the EPS board, installation of fiberglass mesh embedded in the base coat, any water-resistant coat that is applied on top of the insulation to serve as a weather barrier, and the application of the finish coat.

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PLUMBERS, PIPEFITTERS, AND STEAMFITTERS

	Wage	Benefit
District 1	$29.88	$13.56
District 2	$30.00	$16.00
District 3	$30.00	$16.00
District 4	$32.31	$18.36

Duties Include:
Assemble, install, alter, and repair pipe-lines or pipe systems that carry water, steam, air, other liquids or gases. Testing of piping systems, commissioning and retro-commissioning. Workers in this occupation may also install heating and cooling equipment and mechanical control systems.

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Travel:
District 1
0-30 mi. free zone
>30-50 mi. $25.00/day
>50-75 mi. $40.00/day
>75 mi. $75.00/day

Special Provision
If transportation is not provided, mileage at $0.35/mi. with a separate free zone of 20 miles is added to the amounts above. However, if the employee is traveling more than 75 miles/day, only subsistence is required.

Districts 2 & 3
0-40 mi. free zone
>40-80 mi. $30.00/day
>80 mi. $60.00/day

Special Provision:
If employer provides transportation, travel pay will be ½ of the amounts listed above unless the employee stays overnight. If the employee chooses to stay overnight, the employee will receive the full amount of travel listed above even if the employer furnishes transportation.

District 4
0-70 free zone
>70 mi.

- On jobs when employees do not work consecutive days: $0.55/mi. if employer doesn't provide transportation. Not to exceed two trips.

- On jobs when employees work any number of consecutive days: $100.00/day.

ROOFERS

	Wage	Benefit
District 1	$20.23	$8.63
District 2	$16.00	$9.08
District 3	$19.33	$4.52
District 4	$19.45	$4.31

Duties Include:
Metal roofing.

Travel:
District 1
0-50 mi. free zone
>50 mi. $0.35/mi.

District 2 and 3
0-25 mi. free zone
>25 mi. $0.35/mi only when employer doesn't provide transportation.

District 4
0-30 mi. free zone
>30 mi. $0.25/mi only when employer doesn't provide transportation.

Per Diem:
District 1
$60.00/day

District 2 and 3
Employer pays for room + $25.00/day.

District 4
Employer pays for room + $25.00/day.

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SHEET METAL WORKERS

	Wage	Benefit
District 1	$29.62	$18.00
District 2	$29.62	$18.00
District 3	$29.62	$18.00
District 4	$29.62	$18.00

Duties Include:
Testing and balancing, commissioning and retro-commissioning of all air-handling equipment and duct work. Manufacture, fabrication, assembling, installation, dismantling, and alteration of all HVAC systems, air veyer systems, and exhaust systems. All lagging over insulation and all duct lining.

Travel:
All Districts
0-50 mi. free zone
>50 mi.
- $0.25/mi. in employer vehicle
- $0.65/mi. in employee vehicle

Per Diem:
All Districts
$70.00/day

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SOLAR PHOTOVOLTAIC INSTALLERS

	Wage	Benefit
District 1	$30.51	$14.17
District 2	$31.05	$14.56
District 3	$31.05	$13.15
District 4	$33.58	$13.93

Travel:
District 1
No mileage due when traveling in employer's vehicle.

The following travel allowance is applicable when traveling in employee's vehicle:

0-10 mi. free zone
>10-45 mi. $0.585/mi. in excess of the free zone.
>45 mi. $75.00/day

Districts 2 & 3
No mileage due when traveling in employer's vehicle.

The following travel allowance is applicable when traveling in employee's vehicle:

0-08 mi. free zone
>08-50 mi. federal mileage rate/mi. in excess of the free zone.
>50 mi. $66.00/day

District 4
No mileage due when traveling in employer's vehicle.

The following travel allowance is applicable when traveling in employee's vehicle:

0-18 mi. free zone
>18-60 mi. federal mileage rate/mi.
>60 mi. $75.00/day

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SPRINKLER FITTERS

	Wage	Benefit
District 1	$34.35	$20.44
District 2	$34.35	$20.44
District 3	$29.90	$20.44
District 4	$34.35	$20.44

Duties Include:
Duties Include but not limited to any and all fire protection systems: Installation, dismantling, inspection, testing, maintenance, repairs, adjustments, and corrections of all fire protection and fire control systems, including both overhead and underground water mains, all piping, fire hydrants, standpipes, air lines, tanks, and pumps used in connection with sprinkler and alarm systems.

Travel:
All Districts
0-60 mi. free zone
>60-80 mi. $19.00/day
>80-100 mi. $29.00/day
>100 mi. $100.00/day

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TAPERS

	Wage	Benefit
District 1	$19.66	$6.98
District 2	$21.42	$6.81
District 3	$23.47	$6.29
District 4	$19.28	$5.84

Travel and Per Diem:
All Districts
No travel or per diem established.

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TELECOMMUNICATIONS EQUIPMENT INSTALLERS

	Wage	Benefit
District 1	$27.23	$9.58
District 2	$23.62	$6.96
District 3	$23.57	$7.85
District 4	$23.47	$7.25

Duties Include:
Install voice; sound; vision and data systems. This occupation includes burglar alarms, fire alarms, fiber optic systems, and video systems for security or entertainment.

Travel:
All Districts
The federal mileage rate/mi. in effect when travel occurs if using own vehicle.

Per Diem:
All Districts
Employer pays for meals and lodging up to $75.00/day. When jobsite is located in Big Sky, West Yellowstone, and Gardiner, lodging and meals will be provided by the employer for all actual and reasonable expenses incurred.

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TILE, TERRAZZO AND MARBLE FINISHERS

No Rate Established

Duties Include:
Finish work on hard tile, marble, and wood tile to floors, ceilings, and roof decks.

Travel:
All Districts
0-60 mi. free zone
>60-75 mi. $30.00/day
>75-215 mi. $65.00/day
>215 mi. $80.00/day

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TILE, TERRAZZO AND MARBLE SETTERS

No Rate Established

Duties Include:
Apply hard tile, marble, and wood tile to floors, ceilings, and roof decks.

Travel:
All Districts
0-60 mi. free zone
>60-75 mi. $30.00/day
>75-215 mi. $65.00/day
>215 mi. $80.00/day

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TRUCK DRIVERS

No Rate Established

This group includes but is not limited to:
Combination Truck & Concrete Mixer; Distributor Driver; Dry Batch Trucks; DumpTrucks & Similar Equipment; Flat Trucks; Lowboys, Four-Wheel Trailers, Float Semitrailer; Powder Truck Driver (Bulk Unloader Type); Servicemen; Service Truck Drivers, Fuel Truck Drivers, Tiremen; Trucks with Power Equipment; Truck Mechanic; Water Tank Drivers, Petroleum Product Drivers.

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SECTION 011000
SUMMARY

1.1 PART 1 - GENERAL

A. Related Documents

1. Drawings and general provisions of Contract, including General Conditions, Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

B. Project Description

1. This project provides new fire sprinklers on every floor except 6, new fire alarm on every floor, and associated asbestos abatement with all of this work. Following completion of the new fire alarm system, the old fire alarm system will be removed in its entirety, requiring additional asbestos abatement activities. This project also includes work at the roof level inside cellular phone provider spaces.

   Leon Johnson Hall houses many different classrooms, labs and offices that are occupied by multiple departments.
   Specialized spaces exist in this building on the first and second floor in rooms 114, 218, 221, 222, 223, 240, 240A and these spaces are collectively called Anatomical Areas. These spaces contain human specimens for use in the various medical programs on campus. It is crucial that all such specimens be treated with dignity and respect. No phones are allowed in these spaces. Photos of any kind are prohibited. No food or drink are allowed in these spaces. Should it be determined that a Contractor or Subcontractor has touched, photographed, or otherwise inappropriately behaved in these spaces, those individuals will be dismissed from the Project. Depending on the severity of the action, further action may be considered by the University.

C. Site Information

1. Scope of work includes, but is not necessarily limited to, fire sprinkler, fire alarm, asbestos abatement, ceiling texture, ceiling painting.

D. Contracts

1. Contracts shall be under one General Contract and shall include, but not be limited to, all labor, materials, and supervision necessary to furnish and install the Work.

E. Work Sequence

1. The work will be conducted in one (1) phase to provide the least possible interference to the activities of the Owner's personnel and activities.

   Work on room 339 shall only occur between May 11 and August 10, 2020, if the Alternate is awarded. Work on room 345 shall only occur between May 11 and August 10, 2020.

   Work on floors 1 and 2 is restricted to between May 11 and August 10, 2020 with the specific exceptions below:
   Room 218 June 26, 2020 – August 1, 2020

Room 221 and 222	June 1, 2020 – June 26, 2020
Room 223	June 10, 2020 – July 5, 2020
Room 240 and 240A	June 29, 2020 – July 10, 2020

2. The Contractor will have access to the building from the date of receipt of the contract.

F. Contractor Use of Premises

1. Work on this contract is expected to be done during regular working hours Monday through Friday. Any variation from this will require prior approval of the Consultant and Owner.
2. All work must be coordinated with MSU at all times and MSU must be informed about any work impacting campus operations 72 hours or 3 working days in advance of work being conducted and shall require MSU approval.
3. General: Limit use of the premises to construction activities in areas indicated; allow for Owner/MSU occupancy and use by the public. Confine operations to areas within contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
4. Contractor shall conduct all his work in such a manner as to minimize the inconvenience and disruption of MSU's daily schedule.
5. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.
6. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials to the areas designated on the drawings. If additional storage is necessary, obtain and pay for such storage off-site.
7. Contractor shall establish a staging area for storage of materials and equipment.
8. The Contractor is to coordinate with MSU for the location of the job site trailer office.
9. Keep driveways and entrances serving the premises clear and available to MSU and MSU's employees, staff and visitors at all times, unless otherwise agreed by MSU. 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 on site.

G. Parking and Site Access
(See also Supplemental Conditions of the Contract for Construction.)

1. MSU Bozeman Vehicle Regulations state: "All students, faculty, staff, and visitors must register any motor vehicle they park on the University campus, for any reason. A visitor is anyone not defined as student, staff or faculty."
2. All Contractor and Contractor employees shall comply with Montana State University parking regulations. MSU parking permits can be purchased at the University Police Office located in the Huffman Building at Seventh Avenue and Kagy Boulevard. Violators of MSU Bozeman Vehicle Regulations may be ticketed and towed.
3. A maximum of three (3) Contractor Permits (or as agreed with MSU) will be made available to the Contractor for parking of essential vehicles within the designated parking lot (as designated on the Cover Sheet of the Contract Documents). Essential vehicles are vehicles used for delivery of equipment and

tools required to be parked in close proximity to the construction area. All allowed vehicles only to be parked on hard surfaced areas within the Staging Area. All other Contractor and Contractor employee vehicles on campus shall be parked in designated parking lots to be agreed with MSU. No personal vehicles shall be parked at the project site in any event. If a driver of a vehicle not allowed to be parked at the project site must unload equipment, tools, or materials, the vehicle must be immediately thereafter move to a designated lot or leave campus.

4. Access and egress to and from the project site shall be from the subgrade loading dock only. In cases where a different route must be used for a specific purpose, permission must be obtained from MSU. Access routes are for delivery of equipment, tools, and materials and not for parking.
5. The site Staging Areas for materials and equipment are designated on the Cover Sheet of the Contract Documents. Staged materials and equipment must be secured on the ground surface or in trailers. Site staging areas shall be fenced in accordance with the Contract Documents. Vehicles in addition to those allowed to be parked may not be used for staging of equipment, tools, or materials.

H. Owner Occupancy

1. Full Owner/MSU Occupancy: The Owner/MSU will occupy the site during the entire construction period. Cooperate with MSU during construction operations to minimize conflicts and facilitate MSU usage. Perform the work so as not to interfere with MSU's operations.

I. Safety Requirements

1. General: The safety measures required by the Contract Documents are not meant to be inclusive. The Contractor shall be solely responsible for safety on a 24-hours-per-day, 7 days-per-week basis and shall take whatever additional measures are necessary to insure the health and safety of the buildings' occupants, or pedestrians at or near the construction site and access routes and of all other persons in all areas affected by the Contractor's activities. Prior to the start of construction, the Contractor is to submit to the Consultant, a detailed written plan specifying the safety procedures that will be followed. Include (but not by way of limitation) the following: Verbiage, size and locations of warning signs; construction sequence as related to safety; use of barricades (type and location); employee policies as related to safety; and delivery of materials as related to safety. Revise the safety plan as required during construction and resubmit to the Owner.
2. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
3. Comply with Federal, State, local, and the Owner's fire, health and safety requirements.
4. Advise MSU whenever work is expected to be hazardous or inconvenient (including objectionable odors) to MSU's employees, students, visitors or the building occupants.
5. Construction materials or equipment shall be placed so as not to endanger the work or prevent free access to all emergency devices or utility disconnects.
6. Maintain the proper rated fire extinguishers within easy access where power tools, sanding or other equipment is being used.

7. The Contractor shall erect and maintain, as required by law, conditions and progress of the work, warning signs, barricades and other reasonable safeguards for safety and protection.

J. Existing Premises Condition

1. The Contractor is responsible for adequately documenting in photos the existing condition of the premises, to include external road surfaces, curbing and landscaped areas, specifically the cleanliness of areas. Any damage to the premises which is found after construction and is not so documented will be the responsibility of the Contractor to repair or replace.

K. Discrepancies in the Documents

1. The Contractor shall bring any discrepancies between any portions of the drawings and specifications to the attention of the Owner and the Consultant in writing. The Owner and Consultant shall review the discrepancy and clarify the intent desired in the Contract Documents. Unless specifically directed otherwise, the Contractor shall be obligated to provide the greater quantity or quality without any change in contract sum or time.

END OF SECTION 011000

SECTION 012000
PRICE AND PAYMENT PROCEDURES

1.1 GENERAL

A. Related Documents
1. Drawings and general provisions of Contract, including General Conditions, Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

B. Summary

1. This Section specified administrative and procedural requirements governing the Contractor's Applications for Payment.
2. The Contractor's Construction Schedule and Submittal Schedule are included in Section "Submittals".

C. Schedule of Values

1. Coordinate preparation of the Schedule of Values, Form 100, with preparation of the Contractor's Construction Schedule.
2. Each prime Contractor shall coordinate preparation of its Schedule of Values for its part of the work with preparation of the Contractor's Construction Schedule.
3. 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 form
c. List of subcontractors
d. Schedule of allowances
e. Schedule of alternates
f. List of products
g. List of principal suppliers and fabricators
h. Schedule of submittals
i. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than seven (7) days before the date scheduled for submittal of the initial Application for Payment.
j. Sub-Schedules: Where the work is separated into phases that require separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

4. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.

a. Identification: Include the following project identification on the Schedule of Values:

1) Project name
2) Name of the Architect
3) Project number (PPA No.)
4) Contractor's name and address
5) Date of submittal

b. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

1) Generic name
2) Related specification section
3) Name of subcontractor
4) Name of manufacturer or fabricator
5) Name of supplier
6) Change Orders (numbers) that have affected value
7) Dollar value

a) Percentage of Contract Sum in the nearest one-hundredth percent, adjusted to total 100%

c. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.

d. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.

e. For each part of the work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that art of the work.

5. Margins of Cost: Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete including its total cost and proportionate share of general overhead and profit margin.

a. At the Contractor's option, temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense.

6. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.

D. Applications for Payment

1. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
2. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
3. Payment Application Forms: Use Montana Form 101 as the form for Application for Payment.
4. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.

a. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.
b. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

5. Transmittal: Submit one (1) executed copy of each Application for Payment to the Architect by means ensuring receipt within 24 hours, including waivers of lien and similar attachments, when required.

    a. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect.

6. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:

    a. List of subcontractors
    b. Schedule of Values

        1) Contractor's Construction Schedule (preliminary if not final)

    c. Copies of building permits

        1) Copies of authorizations and licenses from governing authorities for performance of the work

    d. Certificates of insurance and insurance policies (submitted with Contract)
    e. Performance and payment bonds (submitted with Contract if required)

7. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the work.
8. Administrative actions and submittals that shall proceed or coincide with this application include:

    a. Occupancy permits and similar approvals
    b. Warranties (guarantees) and maintenance agreements
    c. Test/adjust/balance records
    d. Maintenance instructions
    e. Meter readings
    f. Start-up performance reports

        1) Change-over information related to Owner's occupancy, use, operation and maintenance.

    g. Final cleaning

        1) Application for reduction of retainage, and consent of surety

9. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final Application for Payment include the following:

   a. Completion of project closeout requirements

      1) Completion of items specified for completion after Substantial Completion

   b. Assurance that unsettled claims will be settled

      1) Assurance that work not complete and accepted will be completed without undue delay
      2) Transmittal of required project construction records to Owner

END OF SECTION 01200

SECTION 012300
ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplemental Conditions and other Division 1 Specification Sections, apply to this section. See also *Instructions to Bidders 10.3 Award of Bids.*

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

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

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

1.4 PROCEDURES

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

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

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

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate One
   1. Alternate One includes all Fire Sprinkler Work to the Third Floor Annex area as marked on Sheet FX1.6 and all Asbestos Abatement Work associated with the Fire Sprinkler Work.
   2. Alternate One DOES NOT INCLUDE Fire Alarm Work in the Third Floor Annex area. Fire Alarm Work in the Third Floor Annex area is Base Bid Work.
   3. Asbestos Abatement Work in the Third Floor Annex area **related to the Fire Alarm Work** is Base Bid Work.
   4. Asbestos Abatement Work in the Third Floor Annex area **related to Fire Sprinkler Work** IS INCLUDED IN Alternate One.
   5. The Third Floor Annex Fire Sprinkler Riser detail 2/FX4.01 shall be included in the Base Bid. If Alternate One is not awarded the riser shall be capped after the riser manifold.

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

A. Related Documents
   1. Drawings and general provisions of Contract, including General Conditions, Supplemental Conditions and *Instructions to Bidders*.

B. Substitution Procedures
   1. Substitutions include changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by the Contractor.
   2. Substitution Requests: Submit three copies of each request on MSU Substitution Request Form 099 for each consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

      a. Submit requests in accordance with *Instructions to Bidders*.
      b. Identify product to be replaced and show compliance with requirements for substitutions. Include a detailed comparison of significant qualities of proposed substitution with those of the Work specified, a list of changes needed to other parts of the Work required to accommodate proposed substitution, and any proposed changes in the Contract Sum or the Contract Time should the substitution be accepted.

C. Architect will review proposed substitutions and notify Contractor of their acceptance or rejection. If necessary, Architect will request additional information or documentation of evaluation.

   1. Architect will notify Contractor of acceptance or rejection of proposed substitution within 10 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

D. Do not submit unapproved substitutions on Shop Drawings or other submittals.

END OF SECTION 012500

SECTION 013000

SUBMITTALS

1.1 GENERAL

A. Related Documents

1. Drawings and general provisions of Contract, including General Conditions, Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

B. Summary

1. This Section specifies administrative and procedural requirements for submittals required for performance of the work, including:

    a. Contractor's construction schedule
    b. Submittal schedule
    c. Daily construction reports
    d. Shop Drawings
    e. Product data
    f. Samples

    Note: All Submittals are to be both print and electronic.

2. 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:

    a. Permits
    b. Applications for Payment
    c. Performance and payment bonds
    d. Insurance certificates
    e. List of Subcontractors

3. The Schedule of Values submitted is included in Section "Applications for Payment".
4. Inspection and test reports are included in Section "Quality Requirements".
5. Unless otherwise instructed by the Owner all submittals shall be directed to Architect/Engineer Consultant of Record. The Contractor’s construction schedule, submittal schedule and daily construction reports shall be directed to the Consultant’s representative, the State of Montana’s representative and MSU’s representative. Shop drawings, product data and samples shall be directed to the Consultant’s representative.

C. Submittal Procedures

1. 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.

    a. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

b. 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.

1) The Consultant reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

c. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

1) Allow two (2) weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Consultant will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
2) If an intermediate submittal is necessary, process the same as the initial submittal.
3) Allow two (2) weeks for reprocessing each submittal.
4) No extension of contract time will be authorized because of failure to transmit submittals to the Consultant sufficiently in advance of the work to permit processing.

2. 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.

a. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
b. Include the following information on the label for processing and recording action taken.

1) Project name and PPA Number
2) Date
3) Name and address of Consultant
4) Name and address of Contractor
5) Name and address of Subcontractor
6) Name and address of supplier
7) Name of manufacturer

a) Number and title of appropriate Specification Section
b) Drawing number and detail references, as appropriate

3. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Consultant using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

a. On the transmittal record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include

Contractor's certification that information complies with Contract Documents requirements.

b. Transmittal Form: Contractor's standard form.

D. Contractor's Construction Schedule

1. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit both in print and electronically within thirty (30) days of the date established for "Commencement of the Work".

   a. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the work as indicated in the "Schedule of Values".
   b. Within each time bar indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate actual completion.
   c. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
   d. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the work.
   e. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other schedules.
   f. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Consultant's procedures necessary for certification of Substantial Completion.

2. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.
3. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.
4. Cost Correlation: At the head of the schedule, provide a two (2) item cost correlation line, indicating "pre-calculated" and "actual" costs. On the line show dollar-volume of work performed as of the dates used for preparation of payment requests.

   a. Refer to Section "Price and Payment Procedures" for cost reporting and payment procedures.

5. Distribution: Following response to the initial submittal, print and distribute copies to the Consultant, Owner, subcontractors, and other parties required to comply with scheduled dates. Transmit electronically and post copies in the project meeting room and temporary field office.

   a. 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.

6. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule electronically and in print concurrently with report of each meeting.

E. Submittal Schedule

1. 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 establishment of the Contractor's construction schedule.

   a. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products, as well as the Contractor's construction schedule.
   b. Prepare the schedule in chronological order; include submittals required during the first thirty (30) or sixty (60) days of construction. Provide the following information:

      1) Scheduled date for the first submittal
      2) Related section number
      3) Submittal category
      4) Name of subcontractor
      5) Description of the part of the work covered
      6) Scheduled date for resubmittal
         a) Scheduled date the Consultant's final release or approval

2. Distribution: Following response to initial submittal, print and distribute copies to the Consultant, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.

   a. 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.

3. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

F. Daily Construction Reports

1. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Consultant at weekly intervals:

   a. List of subcontractors at the site
   b. Approximate count of personnel at the site
   c. High and low temperatures, general weather conditions
   d. Accidents and unusual events
   e. Meetings and significant decisions

f. Stoppages, delays, shortages, losses
g. Meter readings and similar recordings
h. Emergency procedures
i. Orders and requests of governing authorities
j. Change Orders received, implemented
k. Services connected, disconnected
l. Equipment or system tests and start-ups
m. Partial completions, occupancies
n. Substantial Completions authorized

G. Shop Drawings

1. Submit newly prepared information, drawn to accurate 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 considered Shop Drawings.
2. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:

a. Dimensions
b. Identification of products and materials included
c. Compliance with specified standards
d. Notation of coordination requirements
e. Notation of dimensions established by field measurement
f. Sheet Size: Except for templates, patterns and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2" x 11", but no larger than 36" x 48".
g. Submittal: Submit electronically and in print for the Consultant's review; Consultant’s comments will be returned electronically.

1) One (1) of the prints returned shall be marked-up and maintained as a "Record Document".

k. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

3. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.

a. Preparation of coordination drawings is specified in section "Project Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.
b. Submit coordination drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

H. Product Data

1. 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. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings".

a. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

1) Manufacturer's printed recommendations
   a) Compliance with recognized trade association standards
   b) Compliance with recognized testing agency standards

2) Application of testing agency labels and seals
   a) Notation of dimensions verified by field measurement
3) Notation of coordination requirements

b. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

c. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.

d. Submittals: Submit two (2) copies of each required submittal; submit four (4) copies where required for maintenance manuals. The Consultant will retain one (1), and will return the other marked with action taken and corrections or modifications required.

1) Unless non-compliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

e. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

1) Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
2) Do not permit use of unmarked copies of Product Data in connection with construction.

I. Samples

1. 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.

a. Mount, display, or package samples in the manner specified to facilitate review of qualities indicated. Prepare samples to match the Consultant's sample. Include the following:

1) Generic description of the sample
2) Sample source
3) Product name or name of manufacturer

4) Compliance with recognized standards
5) Availability and delivery time

2. Submit samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for 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 characteristics are inherent in the material or product represented, submit multiple units (not less than three (3), 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.

3. Preliminary Submittals: Where samples are for selection of color, pattern, texture, or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.

   a. Preliminary submittals will be reviewed and returned with the Consultant's mark 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; one (1) will be returned marked with the action taken.

   a. Maintain sets of samples, as returned, at the project site, for quality comparisons throughout the course of construction.

      1) Unless non-compliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
      2) Sample sets may be used to obtain final acceptance of the construction associated with each set.

5. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the work. Show distribution on transmittal forms.

   a. Field samples specified in individual sections are special types of samples. Field samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the work will be judged.

      1) Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

J. Consultant's Action

1. Except for submittals for record, information, or similar purposes, where action and return is required or requested, the Consultant will review each submittal, mark to indicate action taken, and return promptly. Compliance with specified characteristics is the Contractor's responsibility.
2. Action Stamp: The Consultant will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:

    a. Final-But-Restricted Release: When submittals are marked "Make Corrections Noted", that part of 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 acceptance will depend on that compliance.
    b. Returned for Resubmittal: When submittal is marked "Revise and Resubmit", do not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

        1) Do not permit submittals marked "Revise and Resubmit" to be used at the project site, or elsewhere where work is in progress.

    c. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action not Required".

END OF SECTION 013000

SECTION 014000
QUALITY REQUIREMENTS

1.1 GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General Conditions, Supplemental Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section specifies administrative and procedural requirements for quality control services.
2. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Architect.
3. 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.
4. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

    a. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
    b. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.
    c. Requirements for the Contractor to provide quality control services required by the Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. RESPONSIBILITIES

1. Contractor Responsibilities: The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity; these services include those

    a. Services specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Sum.
    b. The Contractor shall employ and pay an independent agency, to perform specified quality control services.
    c. The Owner will engage and pay for the services of an independent agency

to perform inspections and tests specified as the Owner's responsibility. Payment for these services will be made by the Owner.

d. Where the Owner has engaged a testing agency or other entity for testing and inspection of a 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 otherwise agreed in writing with the Owner.

2. Retesting: The Contractor is responsible for retesting where results of required inspections, tests or similar services provide unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.

a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

3. Associated Services: The Contractor shall 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. Associated services required include but are not limited to:

a. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
b. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
c. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
d. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
e. Security and protection of samples and test equipment at the Project site.

4. Owner Responsibilities: The Owner will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Contractor, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.

a. The Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Owner's responsibility.

5. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Architect and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.

a. The agency shall notify the Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

b. 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.
c. The agency shall not perform any duties of the Contractor.

6. Coordination: The Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

D. SUBMITTALS

1. The independent testing agency shall submit a certified written report and electronic copy of each inspection, test or similar service, to the Architect, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service through the Contractor, in duplicate.

a. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
b. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:

1) Date of issue
2) Project title and number
3) Name, address and telephone number of testing agency
4) Dates and locations of samples and tests or inspections
5) Names of individuals making the inspection or test
6) Designation of the Work and test method
7) Identification of product and Specification Section
8) Complete inspection or test data
9) Test results and in interpretations of test results
10) Ambient conditions at the time of sample-taking and testing
11) Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements
12) Name and signature of laboratory inspector
13) Recommendations on retesting

E. QUALITY ASSURANCE

1. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
2. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State of Montana.

1.2 PRODUCTS (NOT APPLICABLE)

1.3 EXECUTION

A. GENERAL

1. Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
2. Protect construction exposed by or for quality control service activities, and protect repaired construction.
3. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 014000

SECTION 013100
PROJECT COORDINATION

1.1 GENERAL

A. Related Documents
1. Drawings and general provisions of Contract, including General Conditions and Supplemental Conditions and other Division1 Specification Sections, apply to this Section.

B. Summary
1. This section specifies administrative and supervisor requirements necessary for project coordination including, but not necessarily limited to:
   a. Coordination
   b. Administrative and supervisory personnel
   c. General installation provisions
   d. Cleaning and protection
2. Field Engineering is included in Section "Field Engineering".
3. Progress meetings, coordination meetings and pre-installation conferences are included in Section "Project Meetings".
4. Requirements for Contractor's Construction Schedule are included in Section "Submittals".

C. Coordination
1. Coordination: Coordinate construction activities included under various sections of these specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different sections of the specifications that are dependent upon each other for proper installation, connection, and operation.
   a. Provide access to work at all times for inspections by Owner and authorized representatives.
   b. Provide safe working conditions and protection of completed work.
   c. Provide barricades and signs.
   d. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
   e. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
   f. Make adequate provisions to accommodate items scheduled for later installation.
   g. 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.
2. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work. Such administrative activities include, but are not limited to, the following:

a. Notify Facilities Services or Campus Planning, Design and Construction of any expected disruptions in service or changes in construction schedule at least 72 hours (3 working days) in advance.
b. Preparation of schedules.
c. Installation and removal of temporary facilities.
d. Delivery and processing of submittals.
e. Progress meetings.
f. Project close-out activities.

3. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
a. Salvage materials and equipment involved in performance of, but not actually incorporated in, the work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

D. Submittals
1. Coordinated Drawings: Prepare and submit coordination drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.
a. Show the interrelationship of components shown on separate shop drawings.
b. Indicate required installation sequences.
c. Comply with requirements contained in Section "Submittals".
d. Section "Basic Electrical Requirements" for specific coordination drawing requirements for mechanical and electrical installations.

2. Staff Names: Within 15 days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers. Post copies of the list in the project meeting room, the temporary field office, and each temporary telephone.

1.2 PROJECT MEETINGS

A. Related Documents
1. Drawings and general provisions of the Contract, including General and Supplementary General Conditions and other Division 1 Specification Sections, apply to this Section.

B. Summary
1. This section specifies administrative and procedural requirements for project meetings including but not limited to:
a. Pre-construction conference
b. Pre-installment conferences
c. Coordination meetings
d. Progress meetings

C. Pre-construction Conference
1. Schedule a pre-construction conference and organizational meeting.
a. Hold meeting at the project site or other convenient location and prior to commencement of construction activities, including the moving of

equipment on to the site. Conduct the meeting to review responsibilities and personnel assignments.

2. Attendees: The Owner, Consultant and their consultants, the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work. Both the Contractor and the Contractor's job foremen shall attend the meeting, along with all subcontractors.
3. Agenda: Discuss items of significance that could affect progress including such topics as:
    a. Tentative construction schedule
    b. Critical work sequencing
    c. Designation of responsible personnel
    d. Procedures for processing field decisions and Change Orders
    e. Procedures for processing Applications for Payment
    f. Distribution of Contract Documents
    g. Submittal of Shop Drawings, Product Data and Samples
    h. Preparation of record documents
    i. Use of the premises
    j. Office, work and storage areas
    k. Equipment deliveries and priorities
    l. Safety procedures
    m. First aid
    n. Security
    o. Housekeeping
    p. Working hours

D. Pre-Installation Conferences
1. Conduct a pre-installation conference at the site before each 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 or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Consultant of scheduled meeting dates.
2. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
    a. Contract Documents
    b. Options
    c. Related Change Orders
    d. Purchases
    e. Deliveries
    f. Shop Drawings, Product Data and quality control samples
    g. Possible conflicts
    h. Compatibility problems
    i. Time schedules
    j. Weather limitations
    k. Manufacturer's recommendations
    l. Compatibility of materials
    m. Acceptability of substrates
    n. Temporary facilities
    o. Space and access limitations
    p. Governing regulations

q. Safety
r. Inspection and testing requirements
s. Required performance results
t. Recording requirements
u. Protection

3. The Consultant will record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Consultant.
4. 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.

E. Coordination Meeting

1. Conduct project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.
2. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
3. The Consultant will record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

F. Progress Meetings

1. Conduct progress meetings at the project site at regularly scheduled intervals. Coordinate with the Owner and Consultant of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
2. Attendees: In addition to representatives of the Owner and Consultant, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the project and authorized to conclude matters relating to progress.
3. Agenda: Visit job site to raise specific pending issues prior to meeting. 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.
   a. 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 behind schedule will be expedited; 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 contract time.
   b. Review the present and future needs of each entity present, including such items as:
      1) Interface requirements
      2) Time
      3) Sequences
      4) Deliveries
      5) Off-site fabrication problems
      6) Access
      7) Site utilization

8) Temporary facilities and services
9) Hours of work
10) Hazards and risks
11) Housekeeping
12) Quality and work standards
13) Change Orders
14) Documentation of information for payment requests

4. Reporting: The Consultant shall distribute printed and electronic 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.
   a. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

1.3 PRODUCTS (NOT APPLICABLE)

1.4 EXECUTION

A. General Installation Provisions
1. 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.
2. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
3. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
4. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.
5. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Consultant for final decision.
6. Recheck measurements, quantities and dimensions, before starting each installation.
7. Install each component during weather conditions and project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
8. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
9. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated and in compliance with accessibility requirements. Refer questionable mounting height decisions to the Consultant for final decision.

B. Cleaning and Protection
1. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

2. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
3. Limiting Exposures: Supervise construction activities to ensure 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:
    a. Excessive static or dynamic loading
    b. Excessive internal or external pressures
    c. Excessively high or low temperatures
    d. Thermal shock
    e. Excessively high or low humidity
    f. Air contamination or pollution
    g. Water or ice
    h. Solvents
    i. Chemicals
    j. Light
    k. Radiation
    l. Puncture
    m. Abrasion
    n. Heavy traffic
    o. Soiling, staining and corrosion
    p. Bacteria
    q. Rodent and insect infestation
    r. Combustion
    s. Electrical current
    t. High speed operation
    u. Improper lubrication
    v. Unusual wear or other misuse
    w. Contact between incompatible materials
    x. Destructive testing
    y. Misalignment
    z. Excessive weathering
        aa. Unprotected storage
        ab. Improper shipping or handling
        ac. Theft
        ad. Vandalism

END OF SECTION 013100

SECTION 015000
TEMPORARY FACILITIES AND UTILITIES

1.1 GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General Conditions and Supplemental Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
2. Temporary utilities required may include but are not limited to:

    a. Telephone service
    b. Electric Service
    c. Water
    d. Natural gas
    e. Sewer

3. Temporary construction and support facilities required may include but are not limited to:

    a. Field offices and storage sheds.
    b. Sanitary facilities, including drinking water
    c. Temporary Project identification signs and bulletin boards
    d. Waste Disposal services
    e. Construction aids and miscellaneous services and facilities

4. Security and protection facilities required include but are not limited to:

    a. Temporary Security Fencing
    b. Temporary fire protection
    b. Barricades, warning signs, lights
    c. Environmental protection

C. QUALITY ASSURANCE

1. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:

    a. Building Code requirements
    b. Health and safety regulations
    c. Utility company regulations
    d. Police, Fire Department and Rescue Squad rules
    e. Environmental protection regulations

2. Standards: Comply with NFPA Code 241, "Building Construction and

Demolition Operations" and ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition".

D. PROJECT CONDITIONS

1. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

1.2 PRODUCTS

A. MATERIALS

1. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
2. Water: Provide potable water approved by local health authorities.
3. Open-Mesh Fencing: Provide 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized barbed wire top strand and galvanized steel pipe posts, 1 1/2" I.D. for line posts and 2-1/2" I.D. for corner posts.

B. EQUIPMENT

1. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
2. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
3. Electrical Outlets: Provide properly configured NEA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
4. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
5. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
6. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
7. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent

material.

9. First Aid Supplies: Comply with governing regulations.
10. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.

    a. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

1.3 EXECUTION

A. INSTALLATION

1. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work and Owner's operations. Relocate and modify facilities as required.
2. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

B. TEMPORARY UTILITIES

1. Temporary Telephones: Provide temporary telephone service for all personnel engaged in construction activities, throughout the construction period. Provide cellular telephone, operational and on site at all times.

C. TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

1. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access and minimal interruption to Owner's operations.

    a. Maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

2. Field Offices: The Contractor, at his option, shall provide insulated, weather tight temporary offices of sufficient size to accommodate required office personnel at the Project site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:

    a. Furnish with a desk and chairs, a 4-drawer file cabinet, plan table and plan rack and a 6-shelf bookcase.
    b. Equip with a water cooler and private toilet complete with water closet, lavatory and mirror-medicine cabinet unit.

3. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved,

including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the site.

4. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

    a. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.

5. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

6. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

    a. Provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.

7. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.

    a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).

8. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg. F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner. Do not use University trash containers for any reason.

D. SECURITY AND PROTECTION FACILITIES INSTALLATION

1. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

    (a) Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.

2. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

3. Open-Mesh Fencing: Provide 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized barbed wire top strand and galvanized steel

pipe posts, 1 1/2" I.D. for line posts and 2-1/2" I.D. for corner posts.

4. Barricades, Warning Signs and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

5. Do not remove temporary security and protection facilities until Substantial Completion, or longer as requested by the Architect.

6. Temporary Fire Protection: Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."

    a. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than on extinguisher on each floor at or near each usable stairwell.
    b. Store combustible materials in containers in fire-safe locations.
    c. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
    d. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

7. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

E. OPERATION, TERMINATION AND REMOVAL

1. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
2. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
3. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

    a. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.

End Section 015000

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplemental Conditions and Division 1 Specification Sections, apply to this section.

1.2 SECTION REQUIREMENTS

A. Provide products of same kind from a single source. The term "product" includes the terms "material," "equipment," "system," and similar terms.

B. Deliver, store, and handle products according to manufacturer's written instructions, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Inspect products at time of delivery for compliance with the Contract Documents and to ensure items are undamaged and properly protected.

C. Product Substitutions: Reasonable and timely requests for substitutions will be considered. Substitutions include products and methods of construction differing from that required by the Contract Documents and proposed by Contractor after award of Contract. Substitutions only allowed for products when more than one manufacturer is indicated.

1. Submit two (2) copies of each request for product substitution. Identify product to be replaced and provide complete documentation showing compliance of proposed substitution with applicable requirements. Include a full comparison with the specified product, a list of changes to other Work required to accommodate the substitution, and any proposed changes in Contract Sum or Contract Time should the substitution be accepted.
2. Submit requests for product substitution in time to permit processing of request and subsequent Submittals, if any, sufficiently in advance of when materials are required in the Work. Do not submit unapproved substitutions on Shop Drawings or other submittals.
3. Owner will review the proposed substitution and notify Contractor of its acceptance or rejection.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

A. Provide products that comply with the Contract Documents, are undamaged, and are new at the time of installation.

1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.

B. Select products as follows:

1. Where only a single product or manufacturer is named, provide the item indicated. No substitutions will be permitted.
2. Where two or more products or manufacturers are named, provide one of the items indicated. No substitutions will be permitted.
3. Where products or manufacturers are specified by name, accompanied by the term "or equal," provide the named item or comply with provisions concerning "product substitutions" to obtain approval for use of an unnamed product or manufacturer.
4. Where a product is described with required characteristics, with or without naming a brand or trademark, provide a product that complies with those characteristics and other Contract requirements.
5. Where compliance with performance requirements is specified, provide products that comply and are recommended in writing by the manufacturer for the application.
6. Where compliance with codes, regulations, or standards, is specified, select a product that complies with the codes, regulations, or standards referenced.

C. Unless otherwise indicated, Owner will select color, pattern, and texture of each product from manufacturer's full range of options.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 60 00

SECTION 173000
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General Conditions, Supplemental Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Installation of the Work.
3. Cutting and patching.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.

1.3 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Consultant of locations and details of cutting and await directions from Consultant before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or those results in increased maintenance or decreased operational life or safety.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Consultant's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Consultant for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a written and email request for information to Consultant.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings. If discrepancies are discovered, promptly notify Consultant by email and in writing.

1. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
2. Inform installers of lines and levels to which they must comply.
3. Check the location, level and plumb, of every major element as the Work progresses.
4. Notify Consultant when deviations from required lines and levels exceed allowable tolerances.

B. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Consultant.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Consultant, and in compliance with accessibility requirements.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

A. Cutting and Patching, 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 in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond- core drill.
4. Proceed with patching after construction operations requiring cutting are complete.

F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste.
4. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

1. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

H. Clean and provide maintenance on completed construction as frequently as necessary through

the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

I. 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.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTIO N 017300

SECTION 017320
WASTE MANAGEMENT

PART 1 - GENERAL

1.1 WASTE MANAGEMENT REQUIREMENTS

Owner requires that this project generate the least amount of trash and waste possible.
Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration and shall be recycled:

Aluminum and plastic beverage containers.
Corrugated cardboard.
Wood pallets.
Clean dimensional wood: May be used as blocking or furring.
Land clearing debris, including brush, branches, logs, and stumps.
Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.

Methods of trash/waste disposal that are **not** acceptable are:
Burning on the project site.
Burying on the project site.
Dumping or burying on other property, public or private.
Other illegal dumping or burying.

Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, State and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.2 DEFINITIONS

Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
Non-hazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
Return: To give back reusable items or unused products to vendors for credit.

Reuse: To reuse a construction waste material in some manner on the project site.
Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
Toxic: Poisonous to humans either immediately or after a long period of exposure.
Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

1.3 WASTE MANAGEMENT PLAN IMPLEMENTATION

Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and the Architect.
Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
Meetings: Discuss trash/waste management goals and issues at project meetings, including the Pre-bid meeting, Pre-construction meeting and regular job-site meetings.
Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.

As a minimum, provide:
Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
Separate dumpsters for each category of recyclable.
Recycling bins at worker lunch area.
Provide containers as required.
Provide adequate space for pick-up and delivery and convenience to subcontractors.
Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION 017320

SECTION 017400
WARRANTIES AND BONDS

1.1 GENERAL

A. RELATED DOCUMENTS

1. Drawings and general provisions of Contract, including General and Supplemental Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY

1. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

    a. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
    b. General closeout requirements are included in Section "Project Closeout."
    c. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.
    d. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

2. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

C. DEFINITIONS

1. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
2. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

D. WARRANTY REQUIREMENTS

1. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
2. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
3. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with

requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefitted from use of the Work through a portion of its anticipated useful service life.

4. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

    a. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

5. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

E. SUBMITTALS

1. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

    a. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the Work.

2. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate items and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

    a. Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.

3. Forms of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

    a. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a

typed description of the product or installation, including the name or the product, and the name, address and telephone number of the installer.

b. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS, the Project title or name, and the name of the Contractor.

2. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.2 PRODUCTS (NOT APPLICABLE)

1.3 EXECUTION

A. SCHEDULE OF WARRANTIES

1. Schedule: Provide warranties and bonds on products and installations as specified in the appropriate Sections.

END OF SECTION 017400

SECTION 017700
PROJECT CLOSEOUT

1.1 GENERAL

A. RELATED DOCUMENTS
1. Drawings and general provisions of Contract, including General and Supplemental Conditions and other Division-1 Specification Sections, apply to this Section.

B. SUMMARY
1. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
   a. Inspection procedures
   b. Project record document submittal
   c. Operating and maintenance manual submittal
   d. Submittal of warranties
   e. Final cleaning
   f. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions - 2 through - 33.

C. SUBSTANTIAL COMPLETION
1. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
   a. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
      1) If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
   b. Advise Owner of pending insurance change-over requirements.
   c. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
   d. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
   e. See the *Supplemental Conditions of the Contract for Construction* 3.11 for Documentation and As-Built Conditions, and the *Project Closeout Checklist*: Contractor Requirements. Submit maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
   f. Deliver tools, spare parts, extra stock, and similar items.
   h. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
   i. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

2. Inspection Procedures: On receipt of a request for inspection, the Consultant will either proceed with inspection or advise the Contractor of unfilled requirements. The Consultant 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.
    a. The Consultant will repeat inspection when requested and assured that the Work has been substantially completed.
    b. Results of the completed inspection will form the basis of requirements for final inspection.

D. FINAL ACCEPTANCE
1. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
    a. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
    b. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
    c. Submit a certified copy of the Consultant's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Consultant.
    e. Submit consent of surety to final payment.
    f. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
2. Re-inspection Procedure: The Consultant will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Consultant.
    a. Upon completion of re-inspection, the Consultant will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
    b. If necessary, re-inspection will be repeated.

E. RECORD DOCUMENT SUBMITTALS
1. See also the *Supplemental Conditions of the Contract for Construction* 3.11 for Documentation and As-Built Conditions, and the *Project Closeout Checklist*: Contractor Requirements.
2. General: Do not use record documents (red-line markups) for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Consultant's reference during normal working hours.
3. Record Drawings (Red-lined): Maintain two clean, undamaged sets of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the sets to show the red-line changes during the course of construction with actual installation where the installation varies substantially from the Work as originally shown. Mark whichever 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.

a. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
b. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
c. Note related Change Order numbers where applicable.
d. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

4. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
   a. Upon completion of the Work, submit record Specifications to the Consultant for the Owner's records.
5. Record Product Data: Maintain one copy of each Product Data submittal. 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. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark up of record drawings and Specifications.
   a. Upon completion of mark-up, submit (3) complete sets of record Product Data to the Consultant for the Owner's records.
6. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Consultant and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area
7. 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, properly identified and bound or filed, ready for continued use and reference. Submit to the Consultant for the Owner's records.
8. Maintenance Manuals: Provide one (1) draft copy for review. Provide **two (2)** final paper copies and one electronic pdf file prior to final completion. Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 3-inch, 3 ring vinyl-covered binders **MSU will supply specific binders. Contact CPDC at 406/994-5413.** Mark appropriate identification on front and spine of each binder. Include the following types of information; and others as specified in other Divisions:
   a. Emergency instructions
   b. Spare parts list
   c. Copies of warranties
   d. Wiring diagrams

e. Recommended "turn around" cycles
f. Inspection procedures
g. Shop Drawings and Product Data
h. Fixture lamping schedule
i. List of final color and material selections

F. WARRANTIES AND BONDS

1. SUMMARY

a. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

1) Refer to the General Conditions and Supplemental Conditions for terms of the Contractor's special warranty of workmanship and materials.
2) General closeout requirements are included in Section "Project Closeout."
3) Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.
4) Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

C. Separate Prime Contracts: Each prime Contractor is responsible for warranties related to its own Contract.

2. DEFINITIONS

a. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
b. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

3. WARRANTY REQUIREMENTS

a. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
b. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
c. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is

responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefitted from use of the Work through a portion of its anticipated useful service life.

d. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
   1) Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

e. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

4. SUBMITTALS

a. Submit written warranties to the Consultant prior to the date certified for Substantial Completion. If the Consultant's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Consultant.
   1) When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Consultant within fifteen days of completion of that designated portion of the Work.

b. Forms of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

c. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
   1) Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name or the product, and the name, address and telephone number of the installer.
   2) Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS, the Project title or name, and the name of the Contractor.

e. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.2 EXECUTION

A. CLOSEOUT PROCEDURES

1. Functional Demonstration: Demonstrate proper operation of all systems to Consultants and Owners representative prior to request for substantial completion. Coordinate schedule with Consultant.
2. Operating and Maintenance Instructions: Provide two (2) duplicate training sessions for each MSU trade group responsible for systems installed under this project. Coordinate schedule with Owner. 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. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
    a. Maintenance manuals
    b. Record documents
    c. Spare parts and materials
    d. Tools
    e. Lubricants
    f. Fuels
    g. Identification systems
    h. Control sequences
    i. Hazards
    j. Cleaning
    k. Warranties and bonds
        1) Maintenance agreements and similar continuing commitments

END OF SECTION 017700

SECTION 017823
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 A.RELATED DOCUMENTS

A. General provisions of Contract, including General and Supplemental Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Operation manuals for systems, subsystems, and equipment.
3. Product maintenance manuals.
4. Systems and equipment maintenance manuals.

1.3 CLOSEOUT SUBMITTALS

A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operations and maintenance manuals in the following format:

1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.

a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
b. Enable inserted reviewer comments on draft submittals.

2. Two paper copies and one electronic pdf. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will deliver two copies to the Owner. **For Final manuals MSU will supply specific binders. Contact CPDC at 406/994-5413.**

C. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect and Commissioning Authority will return copy with comments.

1. Correct or revise each manual to comply with Architect's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR OPERATION, AND MAINTENANCE MANUALS

A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.

B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

C. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Construction Manager.
7. Name and contact information for Architect.
8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
9. Cross-reference to related systems in other operation and maintenance manuals.

D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

F. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily

navigated file tree. Configure electronic manual to display bookmark panel on opening file.

G. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: **MSU will supply specific binders. Contact CPDC at 406/994-5413**. These binders are sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and oversize sheets will need to be folded to 8x11.5.

a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Precautions against improper use.
9. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.

7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.4 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

D. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of operation and maintenance manuals.

E. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

PART 4 - MATERIAL AND FINISHES MAINTENANCE MANUAL

A. General: Incorporate as part of the O & M Manuals. Material and finishes to the Architect/Engineer for approval and distribution. Provide one section for architectural products, including applied materials and finishes, and a second section for products designed for moisture protection and products exposed to the water.

1. Refer to individual specification sections for additional requirements on the care and maintenance of materials and finishes

B. Architectural Products, Applied Materials and Finishes: Provide complete manufacturers data and instructions on the care and maintenance of architectural products, including applied materials and finishes.

C. Manufacturers Data: Provide complete information on architectural products, including but not limited to the following items, as applicable:
1. Manufacturer’s catalog number
2. Size
3. Material composition
4. Color texture reordering information for specially manufactured products
5. Manufacturer and supplier/installers contact information
6. Warranty terms

D. Care and Maintenance Instruction: Provide complete information on the care and maintenance of architectural products, including the manufacturer’s recommendations for the types of cleaning agents to be used and the methods of cleaning. In addition, provide information regarding cleaning agents and methods which could prove detrimental to the product. Include the manufacturer’s recommended schedule for cleaning and maintenance.

E. Manufacturer's Data: Provide complete manufacturer's data giving detailed information including, but not limited to the following, as applicable:
   1. Applicable standards
   2. Chemical composition
   3. Installation details
   4. Inspection procedures
   5. Maintenance information
   6. Repair procedures

F. Schedule: Provide complete information in the materials and finishes manual on products specified in the following sections:
   (To be determined with Owner)

G. Color Schedule: Provide complete information on MSU CPDC provided electronic spreadsheet form, to include manufacturer's name and number, location, item and surface of all painted, stained or treated material, surface or piece of equipment.

END OF SECTION 017823

SECTION 017839
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. See also General Conditions and Supplemental Conditions of the Contract for Construction.

B. **See the *Supplemental Conditions of the Contract for Construction* 3.11 for Documentation and As-Built Conditions, and the *Project Closeout Checklist*: Contractor Requirements**

C. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

D. Related Requirements:

1. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
2. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings (Redline Markups): Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.
2. Number of Copies: Submit copies of record Drawings as follows:

a. Submittal:

1) Submit two for review paper-copy set(s) of marked-up record prints.
2) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

1) Submit one paper-copy set(s) of marked-up record prints.
2) Submit PDF electronic files of scanned record prints and one set(s) of prints.
3) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit one paper copy or annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy or annotated PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Record data as soon as possible after obtaining it.
c. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:

a. Project name and PPA Number.
b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Architect.
e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

4. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as annotated PDF electronic file, paper copy or scanned PDF electronic file(s) of marked-up paper copy of Specifications.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as annotated PDF electronic file, paper copy or scanned PDF electronic file(s) of marked-up paper copy of Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file, paper copy, or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 017900
DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

1. System Demonstration:
    a. General:
        i. The system demonstration is a functional test of systems to determine whether they are substantially complete and operating as specified. Systems are to be tested and confirmed to be operating properly by the contractor prior to the Demonstration.
        ii. Where initial Demonstration Session uncovers substantial deficiencies that require more than one Demonstration Session, Contractor shall reimburse Owner for personnel costs associated with performing subsequent Sessions.
    b. Systems to be Tested:
        i. All systems installed and/or provided under the project to have functional testing.
    c. Attendance:
        i. The system demonstration is to be provided by trained representatives that are familiar with the systems, and can operate systems as required to test and verify proper function. The Engineer and Owner's representatives will be present to document performance and/or deficiencies. The General Contractor or others may attend if desired.
        ii. Individual testing sessions (modules) shall be provided for each type or group of systems, separated roughly by trade group that will be performing maintenance on the system. MSU trades groups and systems typically involved in testing are:
            (1) Electricians
            (2) Heating Plant (Hydronic and steam heating systems, controls)
            (3) Plumbers (Plumbing, gas-fired heating, process piping systems)
            (4) Refrigeration (Refrigeration, chilled water, packaged cooling systems)
    d. Schedule:
        i. Contractor to coordinate time requirements and dates with Owner and Engineer. Begin scheduling with sufficient time prior to desired Substantial Completion date to allow all parties to work into schedule, and for deficiencies to be completed prior to desired Substantial Completion date. Demonstration is to be provided prior to, and separate from, training.

2. Training:
    a. General:
        i. The system training is intended to familiarize the Owner's operating and maintenance staff with all systems requiring maintenance. Training is to be provided after the systems are in place and operational, after issues noted during the Demonstration have been resolved, and before final acceptance.
    b. Systems Requiring Training:
        i. All systems installed and/or provided under the project are to have training.
    c. Attendance:
        i. Training is to be provided by trained representatives that are familiar with the system's operation and maintenance requirements. Individual training sessions (modules) shall be provided for each type or group of systems, separated roughly by trade group that will be performing maintenance on the system. MSU trades groups and systems typically requiring training are:
            (1) Electricians

(2) Heating Plant (Hydronic and steam heating systems, controls)
(3) Plumbers (Plumbing, gas-fired heating, process piping systems)
(4) Refrigeration (Refrigeration, chilled water, packaged cooling systems)

d. Schedule:
i. Duplicate training sessions are to be provided for each training module, so that Owner's operating personnel can be split into two groups during training. Duplicate training sessions to be scheduled during different weeks. Length of training sessions will be determined by scope of training, and as coordinated with Owner after draft copy of training documents have been reviewed.

2.1 PRODUCTS
1. Not applicable

3.1 EXECUTION
1. Demonstration:
a. Demonstration Program:
i. Engineer to develop a demonstration program to verify the proper operation of all required systems. Submit program to Owner and Contractor at least two weeks prior to Demonstration.
ii. Engineer to work with Contractor to generate methods to be used to verify sequences and modes of operation that cannot be verified directly.
iii. Engineer to provide at least one copy of all submittals, contract drawings, specifications, and changes related to systems to be demonstrated. Documents to be made available during Demonstration.
iv. Contractor to provide at least one copy of Operating and Maintenance Manuals to be used during demonstration, including specified sequences of operation for field-constructed systems, and operating sequences for all manufactured equipment.

b. Demonstration Session:
i. Verify that all systems are functional and ready to operate in all modes prior to demonstration.
ii. Assemble all program materials required for demonstration.
iii. Contractor to provide all equipment necessary for access to, and operation of, systems including tools, ladder, lighting, and diagnostic equipment.
iv. Verify operation of individual components within systems.
v. Verify controls of related components are coordinated.
vi. Verify all operating sequences, operating modes, and safety controls.
vii. Record all pressures, temperatures, and other relevant data available from installed devices.
viii. Where digital control systems are available, set-up trend reports of relevant parameters which will confirm proper operation of systems installed, modified, or affected by changes made during this project. Provide copies of reports to Engineer and Owner for review. Review, analyze, and discuss results, and provide follow-up reports as required to confirm proper operation.

2. Training:
a. Training Documentation:
i. Contractor to submit draft copy of agenda and training documents to Owner for review at least two weeks prior to training date.
ii. Provide a copy of the following items for each person that will be attending the

training sessions. Coordinate required number with the Owner.

(1) Training agenda.
(2) Summary of new systems and existing systems affected by this project.
(3) Summary of work performed under this project.
(4) Control system drawings and sequences of operation.
(5) List of important maintenance and trouble-shooting operations for all systems.

iii. Provide minimum of 2 copies of following items:

(1) Contract documents including all drawings, specifications, addendums, and change orders.

b. Training Sessions:

i. Assemble at location to be determined by the Owner.
ii. Distribute training documentation as indicated above.
iii. Provide classroom style training if required for orientation, discussion of new systems and existing systems affected by this project, and other issues appropriate for a classroom format.
iv. Visit site and review locations, and perform detailed review of operation and maintenance requirements for current systems.

END OF SECTION 179000

SECTION 028200 - ABATEMENT OF ASBESTOS-CONTAINING MATERIALS

PART 1 - GENERAL

1.1 SUMMARY OF WORK

A. Contract Documents and Related Requirements

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

B. Extent of Work

1. Abatement Contractor will coordinate all work, phasing, and scheduling with the Owner, Owner Representative, and General Contractor. Abatement Contractor will coordinate start date, the number of mobilizations required with the Owner, Owner Representative, and General Contractor. Strict adherence to the schedule will be required to allow the work to be completed in a timely manner to accommodate other activities on the site.
2. The project work areas have been inspected for the presence of asbestos-containing materials (ACM). The survey and test results are provided in this specification and are available from the Owner for review upon written request.
3. The Abatement Contractor shall satisfy himself as the actual quantities to be abated, disposed, and installed. Nothing in this section may be interpreted as limiting the extent of work otherwise required by this contract and related documents.
4. The work includes the remediation, disposal and cleanup of 3,800 SF of asbestos heavy texture on non-asbestos plaster ceilings located in the Lecture Hall.
5. The work includes the remediation, disposal and cleanup of 580 each 1” to 6” round penetrations through non-asbestos drywall containing asbestos joint compound associated with fire sprinkler pipe throughout the building.
6. The work includes the installation and/or remediation, disposal and cleanup of fire alarm devices/conduit to be installed on non-asbestos drywall containing asbestos joint compound throughout the building.
7. The work includes the remediation and disposal of asbestos found during demolition of the old fire alarm system devices, wire and conduit.
8. The Abatement Contractor shall remove 2” of joint compound off drywall from around all penetrations/cutouts.
9. Abatement Contractor will coordinate number of penetration, size of penetrations, number of devices to be installed, and location of penetrations and devices with the General Contractor.
10. The Abatement Contractor shall take into consideration that the drywall containing asbestos jointing compound may be in various hard to contain locations throughout the building. The Abatement Contractor shall insure that all costs are covered in his/her bid as no additional costs shall be made to the contract for unusual containment enclosures.
11. The Abatement Contractor shall be responsible for moving all non-fixed school property out of the Abatement Contractors work areas excluding cabinets and other fixed objects.

12. The Abatement Contractor shall be responsible for but not limited to the removal, cleaning, and storage of all drop ceiling panels/grid, ceiling tiles, lighting, cabinets, trim, molding, and any other fixed and non-fixed objects to wall surfaces under containment to gain access to drywall containing asbestos jointing compound. The Abatement Contractor shall insure that all costs are covered in his/her bid as no additional costs shall be made to the contract.
13. The Abatement Contractor shall be responsible for having tagged and certified scaffolding erected in the Lecture Hall to remain in place until the end of fire sprinkler system project. The Abatement Contractor shall insure that all costs are covered in his/her bid as no additional costs shall be made to the contract.
14. Removal, packaging, clean-up, and disposal of ACM and asbestos contaminated elements in an appropriate regulated area as necessary to accommodate disposal of ACM.
15. Any damage to components not scheduled for demolition, resulting from the Abatement Contractors work shall be repaired or replaced at the sole cost of the Abatement Contractor utilizing appropriately qualified tradespersons.
16. Abatement Contractor will coordinate all work, phasing and number of mobilizations with the General Contractor.

C. Tasks

The work tasks are summarized briefly as follows:

1. The Abatement Contractor will coordinate with the Owner, Owner Representative, and General Contractor for scheduling of access to the building. The Abatement Contractor shall assume that the building will be partially occupied during this project.
2. Access to the site will be restricted to the Abatement Contractor, General Contractor, General Contractor's Sub-contractors, Owner, Owner Representative and Architect. The work areas shall be demarcated in accordance with the OSHA requirements. Appropriate signage is discussed elsewhere in this specification.
3. Pre-abatement activities including pre-abatement meeting(s), inspection(s), notifications, permits, submittal approvals, work-site preparations, emergency procedures arrangements, and standard operating procedures (SOPs) for asbestos abatement work.
4. Abatement activities including removal, packaging, encapsulation, clean-up, storing, and disposal of ACM waste, recordkeeping, security, monitoring, and inspections.
5. Cleaning and decontamination activities including final visual inspection, air monitoring, and certification of decontamination.

D. Abatement Contractors Use of Premises

1. The Abatement Contractor and Abatement Contractor's personnel shall cooperate fully with the Owner, Owner Representative, General Contractor, and Architect to facilitate efficient use of the site. The Abatement Contractor shall perform the work in accordance with the specifications, phasing plan and in compliance with any/all applicable Federal, State and Local regulations and requirements.
2. The Abatement Contractor shall specify the facilities proposed to be utilized in the pre-abatement work plan. The Abatement Contractor shall use only the existing facilities in the building strictly within the limits indicated in the approved pre-abatement work plan. Any variation from the approved work plan shall be secured in writing from the Owner.

1.2 STOP ASBESTOS REMOVAL

A. If the Owner or Owner Representative presents a verbal Stop Asbestos Removal Order, the Abatement Contractor/Personnel shall immediately stop all asbestos removal and maintain HEPA filtered air flow and adequately wet any exposed ACM. If a verbal Stop Asbestos Removal Order is issued, the Owner shall follow-up with a written order to the Abatement Contractor as soon as it is practicable. The Abatement Contractor shall not resume any asbestos removal activity until authorized to do so by the Owner. A stop asbestos removal order may be issued at any time the Owner or Owner Representative determines abatement conditions or activities are not within specification requirements, regulatory requirements or that an imminent hazard exists to human health or the environment. Work stoppage will

continue until conditions have been corrected to the satisfaction of the Owner and Owner Representative. Standby time and costs for corrective actions will be borne by the Abatement Contractor, including the Owner Representative(s) time. The occurrence of any of the following events shall be reported immediately by the Abatement Contractor's competent person to the Owner or Owner Representative using the most expeditious means (e.g., verbal or telephonic), followed up with written notification to the Owner as soon as practical. The Abatement Contractor shall immediately stop asbestos removal/disturbance activities and initiate fiber reduction activities:

1. Airborne PCM analysis results equal to or greater than 0.01 f/cc outside a regulated area or >0.05 f/cc inside a regulated area;
2. breach or break in regulated area containment barrier(s);
3. less than –0.02" WCG pressure in the regulated area;
4. serious injury/death at the site;
5. fire/safety emergency at the site;
6. respiratory protection system failure;
7. power failure or loss of wetting agent; or
8. any visible emissions observed outside the regulated area.

1.3 DEFINITIONS

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

B. Glossary

Definitions relative to Asbestos Abatement.

1. Abatement - Procedures to control fiber release from asbestos-containing materials, typically during removal. Includes removal, encapsulation, enclosure, demolition and renovation activities related to asbestos.
2. ACBM - Asbestos-containing building materials.
3. ACE - Asbestos contaminated elements.
4. ACM - Asbestos-containing material.
5. Aerosol - Solid or liquid particulate suspended in air.
6. Adequately wet - Sufficiently mixed or penetrated with liquid to prevent the release of particulates. If visible emissions are observed coming from the ACM, then that material has not been adequately wetted.
7. Aggressive method - Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact ACM.
8. Aggressive sampling - EPA AHERA defined clearance sampling method using air moving equipment such as fans and leaf blowers to aggressively disturb and maintain in the air residual fibers after abatement.
9. AHERA - Asbestos Hazard Emergency Response Act. Asbestos regulations for schools issued in 1987.
10. AIHA - American Industrial Hygiene Association.
11. Aircell - Pipe or duct insulation made of corrugated cardboard which contains asbestos.
12. Air monitoring - The process of measuring the fiber content of a known volume of air collected over a specified period of time. The NIOSH 7400 Method, Issue 2 is used to determine the fiber levels in air.
13. Air monitoring firm - The firm retained by the Owner to conduct baseline, area, and clearance air monitoring prior to, during, and following the asbestos abatement.
14. Air sample filter - The filter used to collect fibers which are then counted. The filter is made of mixed cellulose ester membrane for PCM (Phase Contrast Microscopy) and polycarbonate for TEM (Transmission Electron Microscopy)
15. Amended water - Water to which a surfactant (wetting agent) has been added to increase the penetrating ability of the liquid.

16. Asbestos - Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated or altered. Asbestos also includes PACM, as defined below.
17. Asbestos-containing building material (ACBM) - Any building material containing more than one percent by weight of asbestos of any type or mixture.
18. Asbestos-containing material (ACM) - Any material containing more than one percent by weight of asbestos of any type or mixture.
19. Asbestos contaminated elements (ACE) - Building elements such as ceilings, walls, lights, or ductwork that are contaminated with asbestos.
20. Asbestos contaminated soil (ACS) - Soil found in the regulated area or in adjacent areas such as crawlspaces or pipe tunnels, which is contaminated with asbestos-containing material debris and cannot be easily separated from the material.
21. Asbestos-containing waste (ACW) material - Asbestos-containing material or asbestos contaminated objects requiring disposal.
22. Asbestos waste decontamination facility - A system consisting of drum/bag washing facilities and a temporary storage area for cleaned containers of asbestos waste. Used as the exit for waste and equipment leaving the regulated area. In an emergency, it may be used to evacuate personnel.
23. ASHARA - Asbestos School Hazard Abatement Re-Authorization Act. This act on the regulations for implementation requires individuals conducting asbestos inspections to be AHERA trained with current certification.
24. Authorized person - Any person authorized by the Owner, Owner Representative, the Abatement Contractor, or government agency and required by work duties to be present in regulated areas.
25. Authorized visitor - Any person approved by the Owner, Owner Representative, the Abatement Contractor, or any government agency having jurisdiction over the regulated area.
26. Barrier - Any surface that isolates the regulated area and inhibits fiber migration from the regulated area.
27. Containment Barrier - An airtight barrier consisting of walls, floors, and/or ceilings of sealed plastic sheeting which surrounds and seals the outer perimeter of the regulated area.
28. Critical Barrier - The barrier responsible for isolating the regulated area from adjacent spaces, typically constructed of plastic sheeting secured in place at openings such as doors, windows, or any other opening into the regulated area.
29. Primary Barrier - Barriers placed over critical barriers and exposed directly to abatement work.
30. Secondary Barrier - Any additional plastic barriers used to isolate and provide protection from debris during abatement work.
31. Breathing zone - The hemisphere, forward of the shoulders with a radius of about 150–225 mm (6–9 inches), from the worker's nose.
32. Bridging encapsulant - An encapsulant that forms a layer on the surface of the ACM.
33. Building/facility owner - The legal entity, including a lessee, which exercises control over management and recordkeeping functions relating to a building and/or facility in which asbestos activities take place.
34. Bulk testing - The collection and analysis of suspect asbestos-containing materials.
35. Certified Industrial Hygienist (CIH) - One certified in practice of industrial hygiene by the American Board of Industrial Hygiene (AIHA).
36. Class I asbestos work - Activities involving the removal of Thermal System Insulation (TSI), surfacing ACM and Presumed Asbestos-containing Material (PACM).
37. Class II asbestos work - Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.
38. Class III asbestos work - Repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM, may be disturbed.
39. Class IV asbestos work - Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM, and activities to clean up dust, waste, and debris resulting from Class I, II, and III activities.
40. Clean room/Changing room - An uncontaminated room having facilities for the storage of employee's street clothing and uncontaminated materials and equipment.

41. Clearance sample - The final air sample taken after all asbestos work has been done and visually inspected. Performed by the Owners industrial hygiene consultant (IHC).
42. Closely resemble - The major workplace conditions, which have contributed to the levels of historic asbestos exposure, are no more protective than conditions of the current workplace.
43. Competent person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and II work, who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor.
44. Count - Refers to the fiber count or the average number of fibers greater than five microns in length per cubic centimeter of air.
45. Crawlspace - An area which can be found either in or adjacent to the regulated area. This area has limited access and egress and may contain asbestos materials and/or asbestos contaminated soil.
46. Decontamination area/unit - An enclosed area adjacent to and connected to the regulated area and consisting of an equipment room, shower room, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.
47. Demolition - The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.
48. Disposal bag - Typically 6-milimerter (mil) thick sift proof, dustproof, leak tight container, used to package and transport asbestos waste from regulated areas to the approved landfill. Each bag or container must be labeled and marked in accordance with EPA, OSHA and United States Department of Transportation (USDOT) requirements.
49. Disturbance - Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or disposal bag, which shall not exceed 60 inches in length or width.
50. Drum - A rigid, impermeable container made of cardboard fiber, plastic, or metal which can be sealed in order to be sift proof, dustproof, and leak tight.
51. Employee exposure - The exposure to airborne asbestos that would occur if the employee were not wearing respiratory protection equipment.
52. Encapsulant - A material that surrounds or embeds asbestos fibers in an adhesive matrix and prevents the release of fibers.
53. Encapsulation - Treating ACM with an encapsulant.
54. Enclosure - The construction of an air tight, impermeable, permanent barrier around ACM to control the release of asbestos fibers from the material and also eliminate access to the material.
55. Equipment room - A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.
56. Fiber - A particulate form of asbestos, 5 microns or longer, with a length to width ratio of at least 3 to 1.
57. Fibers per cubic centimeter (f/cc) - Abbreviation for fibers per cubic centimeter, used to describe the level of asbestos fibers in air.
58. Filter - Media used in respirators, vacuums, or other machines to remove particulate from air.
59. Firestopping - Material used to close the open parts of a structure in order to prevent a fire from spreading.
60. Friable asbestos-containing material - Any material containing more than 1 percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR 763, Section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
61. Glove bag - Not more than a 60” x 60” impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which materials and tools may be handled.

62. High efficiency particulate air (HEPA) filter - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 microns or greater in diameter.
63. HEPA vacuum - vacuum collection equipment equipped with a HEPA filter system capable of collecting and retaining asbestos fibers.
64. Homogeneous area - An area of surfacing, thermal system insulation or miscellaneous ACM that is uniform in color, texture and date of application.
65. HVAC - Heating, Ventilation and Air Conditioning
66. Industrial hygienist (IH) - A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards and meets definition requirements of AIHA.
67. Industrial hygienist technician (IH Technician) - A person working under the direction of an IH or CIH who has special training, experience, certifications and licenses required for the industrial hygiene work assigned.
68. Intact - The ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.
69. Lockdown - Applying encapsulant, after a final visual inspection, on all abated surfaces at the conclusion of ACM removal prior to removal of critical barriers. 70. National Emission Standards for Hazardous Air Pollutants (NESHAP's) - EPA's rule to control emissions of asbestos to the environment.
70. National Emission Standards for Hazardous Air Pollutants (NESHAP) - EPA's rule to control emissions of asbestos to the environment (40 CFR part 61, Subpart M).
71. Negative initial exposure assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101 (f) (2) (iii), that employee exposure during an operation is expected to be consistently below the PEL's.
72. Negative pressure - Air pressure, which is lower than the surrounding area, created by exhausting air from a sealed regulated area through HEPA equipped filtration units. OSHA requires maintaining a 5.0 Pa (-0.02") water gauge inside the negative pressure enclosure.
73. Negative pressure respirator - A respirator in which the air pressure inside the facepiece is negative during inhalation, relative to the air outside the respirator.
74. Non-friable ACM - Material that contains more than 1 percent asbestos but cannot be crumbled, pulverized, or reduced to powder by hand pressure.
75. Organic vapor cartridge - The type of cartridge used on air purifying respirators for organic vapor exposures.
76. Outside air - The air outside buildings and structures, including, but not limited to, the air under a bridge or in an open ferry dock.
77. Penetrating encapsulant - Encapsulant that is absorbed into the ACM matrix without leaving a surface layer.
78. Personal sampling/monitoring - Representative air samples obtained in the breathing zone of the person, using a cassette and battery-operated pump to determine asbestos exposure.
79. Permissible exposure limit (PEL) - The level of exposure OSHA allows for an 8-hour time weighted average. For asbestos fibers, the PEL is 0.1 fibers per cubic centimeter.
80. Personal protective equipment (PPE) - equipment designed to protect user from injury and/or specific job hazard. Such equipment may include protective clothing, hard hats, safety glasses, and respirators.
81. Pipe tunnel - An area, typically located adjacent to mechanical spaces or boiler rooms, in which the pipes servicing the heating system in the building are routed to allow the pipes to access heating elements. These areas may contain asbestos pipe insulation, asbestos fittings, or asbestos contaminated soil.
82. Polarized light microscopy (PLM) - Light microscopy using dispersion staining techniques and refractive indices to identify and quantify the type(s) of asbestos present in a bulk sample.
83. Polyethylene sheeting - Strong plastic barrier material 4 to 6-mil thick, semitransparent, sometimes flame retardant is in compliance with NFPA 241.
84. Positive/negative fit check - A method of verifying the fit of a respirator by closing off the filters and breathing in or closing off the exhalation valve and breathing out while detecting leakage of the respirator.

85. Presumed ACM (PACM) - Thermal system insulation, surfacing, and flooring material installed in buildings prior to 1981. If the building owner has actual knowledge, or should have known through the exercise of due diligence that other materials are ACM, they too must be treated as PACM. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 (k) (5).
86. Professional IH - An IH who meets the definition requirements of AIHA; meets the definition requirements of OSHA as a "Competent Person" at 29 CFR 1926.1101 (b); Must have AHERA type training for supervisor; has completed two specialized EPA approved courses on management and supervision of asbestos abatement projects; has formal training in respiratory protection and waste disposal; and has a minimum of four projects of similar complexity with this project of which at least three projects serving as the supervisory IH.
87. Project designer - A person who has successfully completed the training requirements for an asbestos abatement project designer as required by 40 CFR 763 Appendix C, Part I; (B)(5).
88. Assigned Protection factor - A value assigned by OSHA/NIOSH to indicate the expected protection provided by each respirator class, when the respirator is properly selected and worn correctly. The number indicates the reduction of exposure level from outside to inside the respirator facepiece.
89. Qualitative fit test (QLFT) - A fit test using a challenge material that can be sensed by the wearer if leakage in the respirator occurs.
90. Quantitative fit test (QNFT) - A fit test using a challenge material which is quantified outside and inside the respirator thus allowing the determination of the actual fit factor.
91. Regulated area - An area established by the employer to demarcate where Class I, II, III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work may accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the PEL.
92. Regulated ACM (RACM) - Friable ACM; Category I nonfriable ACM that has become friable; Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or; Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of the demolition or renovation operation.
93. Removal - All operations where ACM, PACM and/or RACM is taken out or stripped from structures or substrates, including demolition operations.
94. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of asbestos from a facility component which does not involve demolition activity.
95. Repair - Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.
96. Shower room - The portion of the personal decontamination facility (PDF) where personnel shower before leaving the regulated area. Also used for bag/drum decontamination in the Waste/Equipment Decontamination Facility (W/EDF).
97. Standard operating procedures (SOPs) - Asbestos work procedures required to be submitted by the Abatement Contractor before work begins.
98. Supplied air respirator (SAR) - A respirator that utilizes an air supply separate from the air in the regulated area.
99. Surfacing ACM - A material containing more than 1 percent asbestos that is sprayed, troweled on or otherwise applied to surfaces for acoustical, fireproofing and other purposes.
100. Surfactant - A chemical added to water to decrease water's surface tension thus making it more penetrating into ACM.
101. Thermal system ACM - A material containing more than 1 percent asbestos applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.
102. Transmission electron microscopy (TEM) - A microscopy method that can identify and count asbestos fibers.
103. Visible emissions - Any emissions, which are visually detectable without the aid of instruments, coming from ACM/PACM/RACM or ACM waste material.
104. Waste/Equipment decontamination facility (W/EDF) - The area in which equipment is decontaminated before removal from the regulated area.

105. Waste generator - Any owner or operator whose act or process produces asbestos-containing waste material.
106. Waste shipment record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
107. Wet cleaning - The process of thoroughly eliminating, by wet methods, any asbestos contamination from surfaces or objects.

C. Referenced Standards Organizations

1. The following acronyms or abbreviations as referenced in contract/specification documents are defined to mean the associated names. Names and addresses may be subject to change.
   a. AIHA American Industrial Hygiene Association
      2700 Prosperity Avenue, Suite 250
      Fairfax, VA 22031
      Telephone: 703-849-8888
   b. ANSI American National Standards Institute
      1430 Broadway
      New York, NY 10018
      Telephone: 212-354-3300
   c. ASTM American Society for Testing and Materials
      1916 Race St.
      Philadelphia, PA 19103
      Telephone: 215-299-5400
   d. CFR Code of Federal Regulations
      Government Printing Office
      Washington, DC 20420
   e. CGA Compressed Gas Association
      1235 Jefferson Davis Highway
      Arlington, VA 22202
      Telephone: 703-979-0900
   f. CS Commercial Standard of the National Institute of Standards and Technology (NIST)
      U. S. Department of Commerce
      Government Printing Office
      Washington, DC 20420
   g. EPA Environmental Protection Agency
      401 M St., SW
      Washington, DC 20460
      Telephone: 202-382-3949
   h. NIST National Institute for Standards and Technology
      U. S. Department of Commerce
      Gaithersburg, MD 20234
      Telephone: 301-921-1000
   i. NEC National Electrical Code (by NFPA)
   j. NEMA National Electrical Manufacturer's Association
      2101 L Street, N.W.
      Washington, DC 20037
   k. NFPA National Fire Protection Association
      1 Batterymarch Park
      P.O. Box 9101
      Quincy, MA 02269-9101
      Telephone: 1-800-344-3555
   l. NIOSH National Institutes for Occupational Safety and Health
      4676 Columbia Parkway
      Cincinnati, OH 45226
      Telephone: 513-533-8236

m. OSHA Occupational Safety and Health Administration
U.S. Department of Labor
Government Printing Office
Washington, DC 20402
n. UL Underwriters Laboratory
333 Pfingsten Rd.
Northbrook, IL 60062
Telephone: 312-272-8800

1.4 APPLICABLE CODES AND REGULATIONS

A. General Applicability of Codes, Regulations, and Standards

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

B. Abatement Contractor Responsibility

1. The Abatement Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State and Local regulations related to any and all aspects of the abatement project. The Abatement Contractor is responsible for providing and maintaining training, accreditations, medical exams, medical records, PPE including respiratory protection including respirator fit testing, as required by applicable Federal, State and Local regulations. The Abatement Contractor shall hold the Owner, Owner Representative, Architect, Consultant and IHC harmless for any failure to comply with any applicable work, packaging, transporting, disposal, safety, health, or environmental requirement on the part of himself, his employees, or his subcontractors. The Abatement Contractor will incur all costs of the IHC, including all sampling/analytical costs to assure compliance with OSHA/EPA/State requirements related to failure to comply with the regulations applicable to the work.

C. Federal Requirements

1. Federal requirements which govern some aspect of asbestos abatement include, but are not limited to, the following regulations.
   a. OSHA
      i. Title 29 CFR 1910 Subpart I - Personal Protective Equipment
      ii. Title 29 CFR 1910.134 - Respiratory Protection
      iii. Title 29 CFR 1910.1020 - Access to Employee Exposure and Medical Records
      iv. Title 29 CFR 1910.1200 - Hazard Communication
      v. Title 29 CFR 1910 Subpar K - Medical and First Aid
      vi. 29 CFR 1926 - Construction Industry
      vii. Title 29 CFR 1926.1101 - Construction Standard for Asbestos
   b. EPA
      i. 40 CFR 61 Subpart A and M (Revised Subpart B) - National Emission Standard for Hazardous Air Pollutants - Asbestos
      ii. 40 CFR 763.80 - Asbestos Hazard Emergency Response Act (AHERA)
   c. USDOT
      i. Title 49 CFR 100 - 185 - Transportation

D. State Requirements

1. State requirements that apply to the asbestos abatement work, disposal, transportation, clearance, etc., include, but are not limited to, the following regulations.

a. Montana Department of Environmental Quality (MDEQ)
   ii. MCA Title 75, Chapter 2, Parts 1-4 – Air Quality
   iii. MCA Title 75, Chapter 10, Part 4 – Hazardous Waste Management
   iv. MCA Title 75, Chapter 2, Part 5 Asbestos Control
   v. ARM Title 17, Chapter 8 Air Quality
   vi. ARM Title 17, Chapter 53 Hazardous Waste Management
   vii. ARM Title 17, Chapter 74 Asbestos Control

E. Standards

1. Standards which govern asbestos abatement activities include, but are not limited to, the following:
   a. ANSI Z9.2-79 - Fundamentals Governing the Design and Operation of Local Exhaust Systems Z88.2 - Practices for Respiratory Protection.
   b. ANSI Z41.1 - Safety Toe Footwear.
   c. ANSI Z87.1 - Practice for Occupational and Educational Eye and Face Protection
   d. ANSI Z88.2-80 - Practices for Respiratory Protection
   e. ANSI X88.6 - Respiratory Protection - Respiratory Use Physical Qualifications for Personnel
   f. ANSI Z89.1 - Requirements for Industrial Head Protection
   g. Underwriters Laboratories (UL) 586-90 - UL Standard for Safety of HEPA Filter Units, 7th Edition.
2. Standards which govern encapsulation work include, but are not limited to the following:
   a. ASTM
3. Standards governing testing laboratories:
   a. AIHA
   b. NIST
4. Standards which govern the fire and safety concerns in abatement work include, but are not limited to, the following:
   a. National Fire Protection Association (NFPA) 10 - Standard for Fire Extinguishers.
   b. NFPA 70 - Standard for National Electric Code.
   c. NFPA 101 - Life Safety Code
   d. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.
   e. NFPA 701 - Standard Methods for Fire Tests for Flame Resistant Textiles and Film.
   f. Uniform Building Code (UBC) - 2006 Edition

F. EPA Guidance Documents

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

G. Notices

1. State and Local agencies: Send written notification as required by state and local regulations including the local fire department prior to beginning any work on ACM.
2. Copies of notifications shall be submitted to the Owner for the facility's records in the same time frame notification is given to Montana Department of Environmental Quality authorities.

H. Permits/Licenses/Fees

1. The Abatement Contractor shall apply for and have all required permits and licenses to perform asbestos abatement work, packaging, and storing, and provide timely notification of such actions as may be required by Federal, State, and Local regulations. Written notification/permit shall be submitted to:

a. Montana Department of Environmental Quality
Waste and Underground Tank Bureau
Asbestos Control Program
1520 East 6th Avenue, P.O. Box 200901
Helena, Montana 59620-0901
Phone (406) 444-5300

2. The Abatement Contractor shall be responsible for all applicable fees associated with permits and licenses.
3. The Abatement Contractor shall be responsible for all applicable fees associated with patent(s).

I. Posting and Filing of Regulations

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

J. Owner Responsibilities

1. Prior to commencement of work:
   a. Owner or Owner Representative will notify others of project dates and requirements for relocation, if needed. Note: Notification of adjacent personnel is required by OSHA in 29 CFR 1926.1101 (k) to prevent unnecessary or unauthorized access to the regulated area.
   b. Submit to the Abatement Contractor results of background air sampling; including location of samples, person who collected the samples, equipment utilized and method of analysis (as applicable). During abatement, submit to the Abatement Contractor, results of bulk material analysis and air sampling data collected during the course of the abatement (as applicable). This information shall not release the Abatement Contractor from any responsibility for OSHA compliance.

1.5 EMERGENCY ACTION PLAN AND ARRANGEMENTS

A. An Emergency Action (Plan) shall be developed by the Abatement Contractor prior to commencing abatement activities and shall be agreed to by the Abatement Contractor and the Owner. The Plan shall meet the requirements of 29 CFR 1910.38 (a) and (b).

B. Emergency procedures shall be in written form and prominently posted in the clean room and equipment room of the decontamination unit. Everyone, prior to entering the regulated area, must read and sign these procedures to acknowledge understanding of the regulated area layout, location of emergency exits and emergency procedures.

C. Emergency planning shall include written notification of police, fire, and emergency medical personnel of planned abatement activities; work schedule and layout of regulated area, particularly barriers that may affect response capabilities.

D. Emergency planning shall include consideration of fire, explosion, hazardous atmospheres, electrical hazards, slips/trips and falls, confined spaces, and heat stress illness. Written procedures for response to emergency situations shall be developed and employee training in procedures shall be provided.

E. Employees shall be trained in regulated area/site evacuation procedures in the event of workplace emergencies.

1. For non-life-threatening situations - employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the regulated area to obtain proper medical treatment.
2. For life threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove them from the regulated area, and secure proper medical treatment.

F. Telephone numbers of all emergency response personnel shall be prominently posted in the clean room, along with the location of the nearest telephone.

G. The Abatement Contractor shall provide verification of first aid/CPR training for personnel responsible for providing the training. OSHA requires medical assistance within 3-4 minutes of a life-threatening injury/illness. Bloodborne pathogen training shall also be verified for those personnel required to provide first aid/CPR.

H. The Emergency Action Plan shall provide a Contingency Plan in the event that an incident occurs that may require the modification of the SOPs during abatement. Such incidents include, but are not limited to, fire; accident; power failure; negative pressure failure; and supplied air system failure. The Abatement Contractor shall detail procedures to be followed in the event of an incident assuring that work is stopped and wetting is continued until correction of the problem.

1.6 PRE-CONSTRUCTION MEETING

A. Prior to commencing the work, the Abatement Contractor shall meet with the Owner, Owner Representative, General Contractor, other Contractors (as applicable), and the Industrial Hygienist/Air Monitoring Firm (IHC) to present and review, as appropriate, of the items following this paragraph. The Abatement Contractor's Competent Person(s) who will be on-site shall participate in the pre-construction meeting. The pre-construction meeting is to discuss and determine procedures to be used during the project. At this meeting, the Abatement Contractor shall provide:

1. Proof of Abatement Contractor licensing.
2. Proof the Competent Person is trained and accredited and certified for working in the State of Montana. Verification of the experience of the Competent Person(s) shall also be presented.
3. A list of all workers who will participate in the project, including experience and verification of training and accreditation in the State of Montana.
4. A list of and verification of training for all personnel who have current first aid/ CPR training. A minimum of one person per shift must have adequate training.
5. Current medical written opinions for all personnel working on-site meeting the requirements of 29 CFR 1926.1101 (m).
6. Current fit-tests for all personnel wearing respirators on-site meeting the requirements of 29 CFR 1926.1101 (h) and Appendix C.
7. A copy of the Abatement Contractor's Asbestos Hazard Abatement Plan. In these procedures, the following information must be detailed, specifically for this project.
   a. Regulated area preparation procedures;
   b. Notification requirements procedure of Abatement Contractor as required in 29 CFR 1926.1101 (d);
   c. Decontamination area set-up/layout and decontamination procedures for employees;
   d. Abatement methods/procedures and equipment to be used; and
   e. PPE to be used.
8. At this meeting the Abatement Contractor shall provide all submittals as required.
9. Procedures for handling, packaging, storage, and disposal of asbestos waste.
10. Emergency Action Plan and Contingency Procedures.

1.7 PROJECT COORDINATION

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

A. Personnel

1. Administrative and supervisory personnel shall consist of a qualified Competent Person(s) as defined by OSHA in the Construction Standards and the Asbestos Construction Standard. These employees are the Abatement Contractor's Representatives responsible for compliance with these specifications and all other applicable requirements.
2. Non-supervisory personnel shall consist of an adequate number of qualified personnel to meet the schedule requirements of the project. Personnel shall meet required qualifications. Personnel utilized on-site shall be pre-approved by the Owner. A request for approval shall be submitted for any person to be employed during the project giving the person's name; qualifications; Certificate of Worker's Acknowledgment; and Affidavit of Medical Surveillance and Respiratory Protection.

3. Minimum qualifications for the Abatement Contractor and assigned personnel are:
   a. The Abatement Contractor has conducted within the last 3 years, three projects of similar complexity and dollar value as this project; has not been cited and penalized for serious violations of asbestos regulations in the past 3 years; has adequate liability/occurrence insurance for asbestos work; is licensed in applicable states; has adequate and qualified personnel available to complete the work; and has comprehensive SOPs for asbestos work; has adequate materials, equipment and supplies to perform the work.
   b. The Competent Person has 4 years of abatement experience, of which 2 years were as the Competent Person on the project; meets the OSHA definition of a Competent Person; has been the Competent Person on two projects of similar size and complexity as this project; has completed EPA AHERA/OSHA/State/ training requirements/accreditation(s) and refreshers; and has all required OSHA documentation related to medical and respiratory protection. Competent Person shall be accredited by the State of Montana.
   c. The Abatement Personnel shall have completed the EPA AHERA/OSHA/State abatement worker course; have training on the SOPs of the Abatement Contractor; has one year of asbestos abatement experience; has applicable medical and respiratory protection documentation; has a certificate of training and a State of Montana accreditation.

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

1.8 RESPIRATORY PROTECTION

A. General – Respiratory Protection Program

1. The Abatement Contractor shall develop and implement a Respiratory Protection Program (RPP) which is in compliance with OSHA requirements found at 29 CFR 1926.1101 and 29 CFR 1910.132;134. ANSI Standard Z88.2-1992 provides excellent guidance for developing a respiratory protection program. All respirators used must be NIOSH approved for asbestos abatement activities. The written RPP shall, at a minimum, contain the basic requirements found at 29 CFR 1910.134 (c) (1) (i - ix) - Respiratory Protection Program.

B. Respiratory Protection Program Coordinator

1. The Respiratory Protection Program Coordinator (RPPC) must be identified. The RPPC must provide a signed statement attesting to the fact that the program meets the above requirements.

C. Selection and Use of Respirators

1. The procedure for the selection and use of respirators must be submitted to the Owner as part of the Abatement Contractor's qualification. The procedure must be written enabling workers to understand clearly. A copy of the Respiratory Protection Program plan must be available onsite for reference by employees or authorized visitors.

D. Respiratory Protection

1. Minimum respiratory protection shall be a half face air purifying respirator when airborne fiber levels are maintained consistently at or below 0.1 f/cc, as determined by PLM analysis. A higher level of respiratory protection may be provided or required, depending on the concentration of airborne fiber levels in the regulated area. Respirator selection shall meet the requirements of 29 CFR 1926.1101 (h); Table 1, except as indicated in this paragraph. Abatement personnel must each have a respirator for their exclusive use. Onsite respirator use must comply with the requirements of 29 CFR 1910.134.

E. Medical Written Opinion

1. No employee shall be allowed to wear a respirator unless a physician or other licensed health care professional has provided a written determination stating that the employee is medically qualified to wear the specified respirator, while wearing whole body impermeable garments, and subject to heat and cold stress.

F. Respirator Fit Test

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

G. Respirator Fit Check

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

H. Maintenance and Care of Respirators

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

I. Supplied Air Systems

1. If a supplied air system is used, the system shall meet all requirements of 29 CFR 1910.134 and the ANSI/Compressed Gas Association (CGA) Commodity Specification for air current requirements for Type 1 - Grade D breathing air. Low pressure systems are not allowed to be used on asbestos abatement projects. Supplied Air respirator use shall be in accordance with EPA/NIOSH publication EPA-560-OPTS-86-001 "A Guide to Respiratory Protection for the Asbestos Abatement Industry". The Competent Person on site will be responsible for the supplied air system to ensure the safety of the worker.

1.9 WORKER PROTECTION

A. Training of Removal Personnel

1. Prior to beginning any abatement activity, all personnel shall be trained in accordance with OSHA 29 CFR 1926.1101 (k)(9) and State of Montana requirements. Training must include, at a minimum, the elements listed at 29 CFR 1926.1101 (k)(9)(viii). Training shall have been conducted by a third party, EPA or state approved trainer meeting the requirements of EPA 40 CFR 763 Appendix C (AHERA MAP). Additional, all personnel shall be accredited in accordance with MCA Title 75, Environmental Protection, Chapter 2, Air Quality, Part 5 Asbestos Control (75-2-511 State of Montana Accreditation requirements. Initial training certificates and current refresher and accreditation proof must be submitted for each person working at the site.

B. Medical Examinations

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

C. Protective Clothing

1. Provide boots, booties, hard hats, goggles, clothing, respirators and any other PPE as determined by conducting the hazard assessment required by OSHA at 29 CFR 1910.132 (d). Provide all personnel entering the regulated area with disposable full body coveralls, disposable head covering, and 18-inch boot coverings. The Competent Person shall ensure the integrity of PPE worn for the duration of the project. Provide plastic/rubber disposable gloves for hand protection. Cloth type gloves may be worn under plastic/rubber gloves, but cannot be used alone. Duct tape shall be used to secure all suit sleeves to wrists and to secure foot coverings at the ankle.

D. Regulated Area Entry Procedure (Class I Work Areas)

1. Worker protection shall meet the most stringent requirement. The Competent Person shall ensure that each time workers enter the regulated area; they remove street clothes in the clean room of the decontamination unit and put on new disposable coveralls, head coverings, a clean respirator, and then proceed through the shower room to the equipment room where they will put on non-disposable required PPE.

E. Decontamination Procedure – Powered Air Purifying Respirator (PAPR)

1. The Competent Person shall require all personnel to adhere to following decontamination procedures whenever they leave the regulated area.
   a. When exiting the regulated area, remove disposable coveralls, and other clothes, including disposable head coverings, and foot coverings or boots in the equipment room.
   b. Still wearing the respirator and without street clothing, proceed to the shower. Showering is MANDATORY. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
      1) Thoroughly wet body including hair and face. If using a PAPR, hold blower above head to keep filters dry.
      2) With respirator still in place, thoroughly decontaminate body, hair, respirator face piece, and all other parts of the respirator except the blower and battery pack on a PAPR. Pay particular attention to cleaning the seal between the face and respirator face piece and under the respirator straps.
      3) Take a deep breath, hold it and/or exhale slowly, completely wetting hair, face, and respirator. While still holding breath, remove the respirator and hold it away from the face before starting to breathe.
      4) Carefully decontaminate the face piece of the respirator inside and out. If using a PAPR, shut down using the following sequence: a) first cap inlets to filters; b) turn blower off to keep debris collected on the inlet side of the filter from dislodging and contaminating the outside of the unit; c) thoroughly decontaminate blower and hoses; d) carefully decontaminate battery pack with a wet rag being cautious of getting water in the battery pack thus preventing destruction. (Note: THIS PROCEDURE IS NOT A SUBSTITUTE FOR RESPIRATOR CLEANING!).
      5) Shower and wash body completely with soap and water. Rinse thoroughly.
      6) Rinse shower room walls and floor to drain prior to exiting.
      7) Proceed from shower to clean room; dry off and change into street clothes or into new disposable work clothing.

F. Decontamination Procedure - Air Purifying, Negative Pressure Respirator

1. The Competent Person shall require all personnel use the following decontamination procedures, as a minimum, whenever leaving the regulated area with a full face, HEPA filtered respirator:
   a. When exiting the regulated area, remove disposable coveralls and other clothes, disposable head coverings, and disposable foot coverings or boots in the equipment room.
   b. While still wearing the respirator and free of street clothing, proceed to the shower, which is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required, as a minimum:
      1) Thoroughly wet body from neck down. Wet hair as thoroughly as possible without wetting the respirator filters.
      2) Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, respirator and filter(s). While still holding breath, remove respirator and hold it away from face before starting to breathe.
      3) Dispose of wetted or overloaded filters from respirator.
      4) Carefully decontaminate respirator face piece and respirator inside and out. (NOTE: THIS IS NOT A SUBSTITUTE FOR RESPIRATOR CLEANING!).
      5) Shower and wash body completely with soap and water. Rinse thoroughly.

6) Rinse shower room walls and floor to drain prior to exiting.
7) Proceed from shower room to clean room and change into street clothes or into new disposable work clothes.

G. Regulated Area Requirements

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

1.10 DECONTAMINATION FACILITIES

A. Description

1. In work areas where it is required, provide each regulated area with separate personnel decontamination facilities (PDF) and waste/equipment decontamination facilities (W/EDF). Ensure that the PDF are the only means of ingress and egress to the regulated area and that all equipment, bagged waste, and other material exit the regulated area only through the W/EDF.

B. General Requirements

1. All personnel entering or exiting a regulated area must go through the PDF and shall follow the requirements at 29 CFR 1926.1101 (j) (1) and these specifications. All waste, equipment and materials must exit the regulated area through the W/EDF and be decontaminated in accordance with these specifications. Walls and ceilings of the PDF and W/EDF must be constructed of a minimum of two layers of 6-mil opaque fire retardant polyethylene sheeting and be securely attached to existing building components and/or an adequate temporary framework. A minimum of two layers of 6 mil poly shall also be used to cover the floor under the PDF and W/EDF units. Construct doors so that they overlap and secure to adjacent surfaces. Weight inner doorway sheets with layers of duct tape so that they close quickly after release. Put arrows on sheets so they show direction of travel and overlap. If the building adjacent area is occupied, construct a solid barrier on the occupied side(s) to protect the sheeting and reduce potential for non-authorized personnel entering the regulated area.

C. Temporary Facilities to the PDF and W/EDF

1. The Abatement Contractor shall provide temporary water service connections to the PDF and W/EDF. Backflow prevention must be provided at the point of connection to the system. Water supply must be of adequate pressure and meet requirements of 29 CFR 1910.141(d)(3). Provide adequate temporary electric power with ground fault protection and overhead wiring in the PDF and W/EDF. Provide a sub-panel for all temporary power in the clean room. Provide adequate temporary lighting to provide a minimum of 50-foot candles in the PDF and W/EDF. Provide temporary heat, if needed, to maintain 70^{o}F throughout the PDF and W/EDF.

D. Personnel Decontamination Facility (PDF)

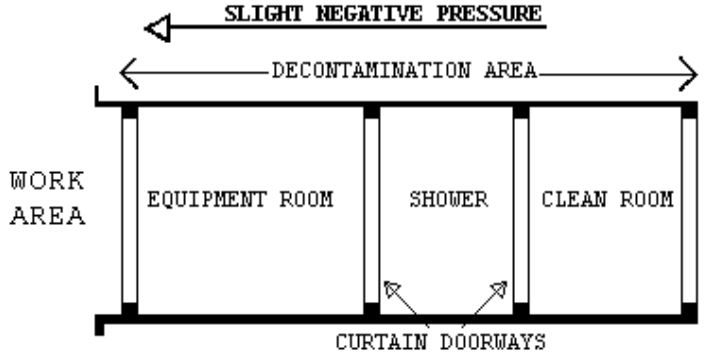
1. The Competent Person shall provide a PDF consisting of a shower room which is contiguous to a clean room and equipment room. The PDF must be sized to accommodate the number of personnel scheduled for the project. The shower room, located in the center of the PDF, shall be fitted with as many portable showers as necessary to insure all employees can complete the entire decontamination procedure within 15 minutes. The PDF shall be constructed of opaque polyethylene for privacy. The PDF shall be constructed to eliminate any parallel routes of egress without showering.
   a. Clean Room: The clean room must be physically and visually separated from the rest of the building to protect the privacy of personnel changing clothes. The clean room shall be constructed of at least two layers of 6-mil fire retardant polyethylene to provide an air tight room. Provide a minimum of 2 - 900 mm (3-foot) wide flapped doorways. One doorway shall be the entry from outside the PDF and the second doorway shall be to the shower room of the PDF. The floor of the clean room shall be maintained in a clean, dry condition. An adequate supply of disposable towels and disposable protective clothing must be provided.

Provide 1 storage locker or equivalent per person. A portable fire extinguisher, Type ABC, shall be provided in accordance with OSHA and NFPA Standard 10. All persons entering the regulated area shall remove all street clothing in the clean room and dress in disposable protective clothing and respiratory protection. Any person entering the clean room does so either from the outside with street clothing on or is coming from the shower room completely naked and thoroughly washed. Females required to enter the regulated area shall be ensured of their privacy throughout the entry/exit process by posting guards at both entry points to the PDF so no male can enter or exit the PDF during her stay in the PDF.

b. Shower Room: The Competent Person shall assure that the shower room is a completely water tight compartment to be used for the movement of all personnel from the clean room to the equipment room and for the showering of all personnel going from the regulated area to the clean room. Each shower shall be constructed so water runs down the walls of the shower and into a drip pan. Install a freely draining smooth floor on top of the shower pan. The shower room shall be separated from the rest of the building and from the clean room and equipment room using air tight walls made from at least two layers of 6-mil fire retardant polyethylene. The shower shall be equipped with a shower head and controls, hot and cold water, drainage, soap dish and continuous supply of soap, and shall be maintained in a sanitary condition throughout its use. The controls shall be arranged so an individual can shower without assistance. Provide a flexible hose shower head, hose bibs and all other required items. Waste water will be pumped to a drain after being filtered through a minimum of a 100-micron sock in the shower drain; a 20-micron filter; and a final 5-micron filter. Filter changes must be done in the shower to prevent loss of contaminated water. Hose down all shower surfaces after each shift and clean any debris from the shower pan. Residue is to be disposed of as asbestos waste.

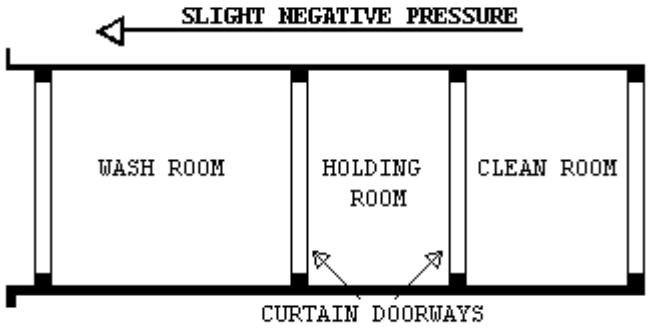
c. Equipment Room: The Competent Person shall provide an equipment room which shall be an air tight compartment for the storage of work equipment, reusable footwear and for use as a change station for personnel exiting the regulated area. The equipment room shall be separated from the regulated area by a minimum 3-foot wide door made of three layers of 6-mil fire retardant polyethylene. The equipment room shall be separated from the regulated area, the shower room and the rest of the building, by air tight walls and a ceiling constructed of a minimum of two layers of 6-mil fire retardant polyethylene. If the airborne level of asbestos in the regulated area is expected to exceed 0.5 f/cc, add an intermediate cleaning space between the equipment room and the regulated area. Damp wipe all surfaces of the equipment room after each shift change. Provide an additional loose layer of 6-mil fire retardant polyethylene per shift change and remove this layer after each shift. Provide a temporary electrical sub-panel in this room to accommodate any power tools and equipment used in the regulated area.

d. An example of the PDF is below: The clean room is at the entrance, followed by a shower room, followed by an equipment room leading to the regulated area. Each doorway in the PDF is at a minimum of double flaps of 6-mil fire retardant polyethylene.



E. Waste/Equipment Decontamination Facility (W/EDF)

1. The Competent Person shall provide a W/EDF consisting of a wash room, holding room, and clean room for removal of equipment and material from the regulated area. Personnel shall not enter or exit the W/EDF except in the event of an emergency. Clean debris and residue in the W/EDF daily. All surfaces in the W/EDF shall be wiped/hosed down after each shift and all debris shall be cleaned from the shower pan. The W/EDF shall consist of the following:
   a. Wash Down Station: Provide an enclosed shower unit in the regulated area just outside the wash room as an equipment bag and container cleaning station.
   b. Wash Room: Provide a wash room for cleaning of bagged or containerized asbestos-containing waste materials passed from the regulated area. Construct the wash room using 50 mm x 100 mm (2" x 4") wood framing and two layers of 6-mil fire retardant polyethylene. Locate the wash room so that packaged materials, after being wiped clean, can be passed to the holding room. Doorways in the wash room shall be constructed of two layers of 6-mil fire retardant polyethylene.
   c. Holding Room: Provide a holding room as a drop location for bagged materials passed from the wash room. Construct the holding room using 50 x 100 mm (2" x 4") wood framing and three layers of 6-mil fire retardant polyethylene. The holding room shall be located so that bagged material cannot be passed from the wash room to the clean room unless it goes through the holding room. Doorways in the holding room shall be constructed of two layers of 6-mil fire retardant polyethylene.
   d. Clean Room: Provide a clean room to isolate the holding room from the exterior of the regulated area. Construct the clean room using 50 x 100 mm (2" x 4") wood framing and two layers of 6-mil fire retardant polyethylene. The clean room shall be located so as to provide access to the holding room from the building exterior. Doorways to the clean room shall be constructed of two layers of 6-mil fire retardant polyethylene. When a negative pressure differential system is used, a rigid enclosure separation between the W/EDF clean room and the adjacent areas shall be provided.
   e. The W/EDF shall be provided as follows: wash room leading to a holding room followed by a clean room leading to the outside. See diagram.



F. Waste/Equipment Decontamination Procedures

1. At washdown station, in the regulated area, thoroughly wet clean contaminated equipment and/or sealed polyethylene bags, and pass into wash room after visual inspection. When passing anything into the wash room, close all doorways of the W/EDF, other than the doorway between the washdown station and the wash room. Keep all outside personnel clear of the W/EDF. Once inside the wash room, wet clean the equipment and/or bags. After cleaning and inspection, pass items into the holding room. Close all doorways except the doorway between the holding room and the clean room. Workers from the clean room/exterior shall enter the holding room and remove the decontaminated/cleaned equipment/bags for removal and disposal by Abatement Contractor. These personnel shall wear full protective clothing and appropriate respirators. At no time shall personnel from the clean side be allowed to enter the wash room.

PART 2 - PRODUCTS, MATERIALS AND EQUIPMENT

2.1 MATERIALS AND EQUIPMENT

A. General Requirements

1. Prior to the start of work, the Abatement Contractor shall provide and maintain a sufficient quantity of materials and equipment to assure continuous and efficient work throughout the duration of the project.
2. All materials shall be delivered in their original package, container or bundle bearing the name of the manufacturer and the brand name (where applicable).
3. Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Flammable materials cannot be stored inside buildings. Replacement materials shall be stored outside of the regulated area until abatement is completed.
4. The Abatement Contractor shall not block or hinder use of site by staff, and visitors by placing materials/equipment in any unauthorized place.
5. The Competent Person shall inspect for damaged, deteriorating or previously used materials. Such materials shall not be used and shall be removed from the worksite and disposed of properly.
6. Polyethylene sheeting for walls in the regulated area shall be a minimum of 4-mil thickness. For floors and all other uses, sheeting shall be a minimum of 6-mil thickness and shall be used in widths selected to minimize the frequency of joints. Fire retardant poly shall be used throughout.
7. The method of attaching polyethylene sheeting shall be agreed upon in advance by the Abatement Contractor and Owner and selected to minimize damage to equipment and surfaces. Method of attachment may include any combination of moisture resistant duct tape or other waterproof tape, furring strips, spray glue, staples, nails, screws, lumber and plywood for enclosures or other effective procedures capable of sealing polyethylene to dissimilar finished or unfinished surfaces under both wet and dry conditions. The Abatement Contractor shall repair all damage (i.e. fasteners, duct tape damages, etc.) to finishes not scheduled for removal and/or restoration by others.
8. Polyethylene sheeting utilized for the PDF shall be opaque white or black in color, 6-mil fire retardant polyethylene.
9. Installation and plumbing hardware, showers, hoses, drain pans, sump pumps and waste water filtration system shall be provided by the Abatement Contractor.
10. An adequate number of HEPA vacuums, scrapers, sprayers, nylon brushes, brooms, disposable mops, rags, sponges, staple guns, shovels, ladders and scaffolding of suitable height and length as well as meeting OSHA requirements, fall protection devices, water hose to reach all areas in the regulated area, airless spray equipment, and any other tools, materials or equipment required to conduct the abatement project. All electrically operated hand tools, equipment, electric cords shall be connected to GFCI protection.
11. Special protection for objects in the regulated area shall be detailed (e.g., plywood over carpeting or hardwood floors to prevent damage from scaffolds, water and falling material).
12. Disposal bags – 2 layers of 6 mil poly for asbestos waste shall be pre-printed with labels, markings and address as required by OSHA, EPA and DOT regulations.
13. OSHA DANGER demarcation signs, as many and as required by OSHA 29 CFR 1926.1101(k)(7) shall be provided and placed by the Competent Person. All other posters and notices required by Federal and State regulations shall be posted in the Clean Room.
14. Adequate and appropriate PPE for the project and number of personnel/shifts shall be provided. All personal protective equipment issued must be based on a written hazard assessment conducted under 29 CFR 1910.132(d).
15. Any damage to building components not scheduled for general renovation, resulting from the Abatement Contractor's work and/or work practices shall be repaired or replaced at the sole cost of the Abatement Contractor utilizing appropriately qualified and insured tradespersons equal to or greater than the original condition.

2.2 MONITORING, INSPECTION, AND TESTING

A. General

1. The Abatement Contractor shall perform, throughout abatement work, monitoring of their personnel's exposure, inside the regulated area in accordance with OSHA requirements and this abatement project specification. The Abatement Contractor's Industrial Hygiene Technician (IHT) or accredited supervisor ("Competent Person") shall personally review conditions inside the regulated area to ensure compliance with EPA and this asbestos abatement project specification. In addition, the IHT or accredited supervisor shall personally manage air sample collection, analysis and evaluation for personnel samples and area samples to satisfy OSHA requirements. Additional inspection and testing requirements are specified in other parts of this section.
2. The IHT or accredited supervisor shall be responsible for managing all personnel monitoring, the inspection and testing required by this asbestos abatement project specification, the OSHA Regulation 29 CFR 1926.1101, and for continuous monitoring of all sub-systems and procedures affecting the safety of the Abatement Contractor's employees. Safety of the Abatement Contractor's employees and providing safe conditions inside the regulated area for all persons entering is the exclusive responsibility of the Abatement Contractor. The analytical laboratory that shall be used by the Abatement Contractor to analyze the samples shall be AIHA accredited. The IHT or accredited supervisor shall keep a daily log of personnel and area samples taken and analyzed and make such a log available to the Owner and Owner Representative. The log shall contain information on the person's breathing zone sampled, activities being performed, the date of the sample collection, the time of the sample start to finish, flow rate, volume and fibers/cc. Collect and analyze personnel samples for fifty percent of the work force each day throughout the duration of the project.
3. The Owner will employ an independent industrial hygiene consultant (IHC) to perform various services on behalf of the Owner. The IHC will perform the necessary monitoring, inspection, testing, and other support services to ensure that Owner employees, and visitors will not be adversely affected by the abatement work, and that the abatement work proceeds in accordance with these specifications, and that the abated areas or abated building have been successfully decontaminated. The work of the IHC in no way relieves the Abatement Contractor from their responsibility to perform the work in accordance with contract/specification requirements, to perform continuous inspection, monitoring and testing for the safety of their employees, and to perform other such services as specified. The cost of the IHC and their services will be borne by the Owner, except for any repeat of final inspection and testing that may be required due to unsatisfactory initial results. Any repeated final inspections and/or testing, if required, will be paid for by the Abatement Contractor.
4. If fibers counted by the IHC during abatement work, either inside or outside the regulated area, utilizing the NIOSH 7400 air monitoring method, exceed the specified respective limits, the Abatement Contractor shall stop work. The Abatement Contractor may request confirmation of the results by analysis of the samples by TEM. Request must be in writing and submitted to the Owner. Cost for the confirmation of results will be borne by the Abatement Contractor for both the collection and analysis of samples and for the time delay that may/does result for this confirmation.

B. Scope of Services of the IHC

1. The purpose of the work of the IHC is to: Assure quality; resolve problems; and prevent the spread of contamination beyond the regulated areas. In addition, their work includes performing the final inspection and testing to determine whether the regulated areas or building have been adequately decontaminated. All air clearance monitoring is to be done utilizing PCM. The IHC will perform the following tasks:
   a. Task 1: Establish background levels before abatement begins by collecting background samples. Retain samples for possible PCM analysis.
   b. Task 2: Perform continuous air monitoring, inspection, and testing outside the regulated area during actual abatement work to detect any faults in the regulated area isolation and any adverse impact on the surroundings from regulated area activities.
   c. Task 3: Perform unannounced visits to spot check overall compliance of work with

contract/specifications. These visits may include any inspection, monitoring, and testing inside and outside the regulated area and all aspects of the operation except personnel monitoring.

d. Task 4: Provide support to the Owner and Owner Representative, such as evaluation of submittals from the Abatement Contractor, scheduling, resolution of unforeseen developments, etc.
e. Task 5: Perform, in the presence of the Owner or Owner Representative, final inspection and testing of a decontaminated regulated area or building at the conclusion of the abatement and clean-up work to certify compliance with the Owner or Owner Representative requirements.
f. Task 6: Issue a Certificate of Decontamination for each regulated area or building and project Report.

2. All data, inspection results and testing results generated by the IHC will be available to the Abatement Contractor for information and consideration. The Abatement Contractor shall cooperate with and support the IHC for efficient and smooth performance of their work.
3. The monitoring and inspection results of the IHC will be used by the Owner or Owner Representative to issue any stop removal orders to the Abatement Contractor during abatement work and to accept or reject a regulated area or building as decontaminated.

2.3 ASBESTOS HAZARD ABATEMENT PLAN

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

1. Minimum Personnel Qualifications
2. Emergency Action Plan/Contingency Plans and Arrangements
3. Security and Safety Procedures
4. Respiratory Protection/PPE Program and Training
5. Medical Surveillance Program and Recordkeeping
6. Regulated Area Requirements - Containment Barriers/Isolation of Regulated Area
7. Decontamination Facilities and Entry/Exit Procedures (PDF and W/EDF)
8. Negative Pressure Systems Requirements
9. Monitoring, Inspections, and Testing
10. Removal Procedures for ACM and ACE
11. Removal of Contaminated Soil (if applicable)
12. Encapsulation Procedures for ACM
13. Disposal of ACM waste/equipment
14. Regulated Area Decontamination/Clean-up
15. Regulated Area Visual and Air Clearance
16. Project Completion/Closeout

2.4 SUBMITTALS

A. Pre-Construction Meeting Submittals

1. Submit to the Owner a minimum of 14 days prior to the pre-start meeting the following for review and approval. Meeting this requirement is a prerequisite for the pre-start meeting for this project:
   a. Submit a detailed work schedule for the entire project reflecting contract documents and the phasing/schedule requirements.
   b. Submit a staff organization chart showing all personnel who will be working on the project and their capacity/function. Provide their qualifications, training, MDEQ accreditations, and licenses, as appropriate. Provide a copy of the "Certificate of Worker's Acknowledgment" and the "Affidavit of Medical Surveillance and Respiratory Protection" for each person.
   c. SOPs developed specifically for this project, incorporating the requirements of the

specifications, prepared, signed and dated.

d. Submit the specifics of the materials and equipment to be used for this project with brand names, model numbers, performance characteristics, pictures/diagrams, and number available for the following:
   1) Supplied air system, if used, negative air machines, HEPA vacuums, air monitoring pumps, calibration devices, pressure differential monitoring device and emergency power generating system.
   2) Waste water filtration system, shower system, containment barriers.
   3) Encapsulants, surfactants, hand held sprayers, airless sprayers, glove bags and fire extinguishers.
   4) Respirators, protective clothing, PPE.
   5) Fire safety equipment to be used in the regulated area.

e. Submit the name, location, and phone number of the approved landfill; proof/verification the landfill is approved for ACM disposal; the landfill's requirements for ACM waste; the type of vehicle to be used for transportation; and name, address, and phone number of subcontractor, if used. Proof of asbestos training for transportation personnel shall be provided.

f. Submit required notifications and arrangements made with regulatory agencies having regulatory jurisdiction (MDEQ) and the specific contingency/emergency arrangements made with local health, fire, ambulance, hospital authorities and any other notifications/arrangements.

g. Submit the name, location and verification of the laboratory and/or personnel to be used for analysis of air and/or bulk samples. Air monitoring must be done in accordance with OSHA 29 CFR 1926.1101(f) and Appendix A.

h. Submit qualifications verification: Submit the following evidence of qualifications. Make sure that all references are current and verifiable by providing current phone numbers and documentation.
   1) Abatement Company: Project experience within the past 3 years; listing projects first most similar to this project: Project Name; Type of Abatement; Duration; Cost; Reference Name/Phone Number; Final Clearance; Completion Date.
   2) List of project(s) halted by Owner, Architect, IH firms, regulatory agencies in the last 3 years: Project Name; Reason; Date; Reference Name/Number; Resolution.
   3) List asbestos regulatory citations (e.g., OSHA), notices of violations (e.g., Federal and state EPA), penalties, and legal actions taken against the company including and of the company’s officers (including damages paid) in the last 3 years. Provide copies and all information needed for verification.

i. Submit information on personnel: Provide a resume; address each item completely; provide references; phone numbers; copies of certificates, accreditations, and licenses. Submit an affidavit stating that all personnel submitted below have medical records in accordance with OSHA 29 CFR 1926.1101(m) and 29 CFR 1910.20 and that the company has implemented a medical surveillance program and maintains recordkeeping in accordance with the above regulations. Submit the phone number and doctor/clinic/hospital used for medical evaluations.
   1) Competent Person(s)/Supervisor(s): Number; names; years of abatement experience as Competent Person/Supervisor; list of similar projects as Competent Person/Supervisor; as a worker; certificates, licenses, accreditations; proof of MDEQ/AHERA/OSHA specialized asbestos training; maximum number of personnel supervised on a project; medical opinion; current respirator fit test.
   2) Workers: Numbers; names; years of abatement experience; certificates, licenses, accreditations; training courses in asbestos abatement and respiratory protection; medical opinion; current respirator fit test.

j. Submit copies of State license; copy of insurance policy, including exclusions with a letter from agent stating in English the coverage provided and the fact that asbestos abatement activities are covered by the policy; copy of AHAP incorporating the requirements of this specification; information on who provides your training, how often; who provides medical surveillance, how often; who does and how is air monitoring conducted; a list of references of

independent laboratories/IH's familiar with your air monitoring and standard operating procedures; copies of monitoring results of the five referenced projects listed and analytical method(s) used.

k. Rented equipment must be decontaminated prior return to the rental agency.

l. Submit, before the start of work, the manufacturer's technical data for all types of encapsulants, all SDS and application instructions.

B. Submittals During Abatement

1. The Competent Person shall maintain and submit a daily log at the regulated area documenting the dates and times of the following: purpose, attendees and summary of meetings; all personnel entering/exiting the regulated area; document and discuss the resolution of unusual events such as barrier breeching, equipment failures, emergencies, and any cause for stopping work; representative air monitoring and results/TWA's/EL's. Submit this information daily to the Owner Representative.

C. Submittals at Completion of Abatement

1. The Abatement Contractor shall submit a project report to the Owner Representative consisting of the daily log book requirements and documentation of events during the abatement project including Waste Shipment Records signed by the landfill's agent. The report shall include a certificate of completion, signed and dated by the Competent Person, in accordance with Attachment #1.

2.5 ENCAPSULANTS

A. Types of Encapsulants

1. The following four types of encapsulants, if used, must comply with performance requirements as stated in paragraph 2.5 B:
   a. Removal encapsulant - used as a wetting agent to remove ACM.
   b. Bridging encapsulant - provides a tough, durable coating on ACM.
   c. Penetrating encapsulant - penetrates/encapsulates ACM at least 13 mm (1/2").
   d. Lockdown encapsulant - seals microscopic fibers on surfaces after ACM removal.

B. Performance Requirements

1. Encapsulants shall meet the latest requirements of EPA; shall not contain toxic or hazardous substances; or solvents; and shall comply with the following performance requirements:
2. General Requirements for all Encapsulants:
   a. ASTM E84: Flame spread of 25; smoke emission of 50.
   b. University of Pittsburgh Protocol: Combustion Toxicity; zero mortality.
   c. ASTM C732: Accelerated Aging Test; Life Expectancy - 20 years.
   d. ASTM E96: Permeability - minimum of 0.4 perms.
3. Bridging/Penetrating Encapsulants:
   a. ASTM E736: Cohesion/Adhesion Test - 24 kPa (50 lbs/ft2).
   b. ASTM E119: Fire Resistance - 3 hours (Classified by UL for use on fibrous/cementitious fireproofing).
   c. ASTM D2794: Gardner Impact Test; Impact Resistance - minimum 11.5 kg-mm (43 in/lb).
   d. ASTM D522: Mandrel Bend Test; Flexibility - no rupture or cracking.
4. Lockdown Encapsulants:
   a. ASTM E119: Fire resistance - 3 hours (tested with fireproofing over encapsulant applied directly to steel member).
   b. ASTM E736: Bond Strength - 48 kPa (100 lbs/ft2) (test compatibility with cementitious and fibrous fireproofing).
   c. In certain situations, encapsulants may have to be applied to hot pipes/equipment. The encapsulant must be able to withstand high temperatures without cracking or off-gassing any noxious vapors during application.

2.6 CERTIFICATES OF COMPLIANCE

A. The Abatement Contractor shall submit to the Owner certification from the manufacturer indicating compliance with performance requirements for encapsulants when applied according to manufacturer recommendations.

PART 3 - EXECUTION

3.1 REGULATED AREA PREPARATIONS

A. Site Security

1. Regulated area access is to be restricted only to authorized, trained/accredited and protected personnel. These may include the Contractor's employees, employees of Subcontractors, Owner employees and representatives, State and local inspectors, and any other designated individuals. A list of authorized personnel shall be established prior to commencing the project and be posted in the clean room of the decontamination unit.
2. Entry into the regulated area by unauthorized individuals shall be reported immediately to the Competent Person by anyone observing the entry. The Competent Person shall immediately require any unauthorized person to leave the regulated area and then notify the Owner or Owner Representative using the most expeditious means.
3. A log book shall be maintained in the clean room of the decontamination unit. Anyone who enters the regulated area must record their name, affiliation, time in, and time out for each entry.
4. Access to the regulated area shall be through a single decontamination unit. All other access (doors, windows, hallways, etc.) shall be sealed or locked to prevent entry to or exit from the regulated area. The only exceptions for this requirement are the waste/equipment load-out area which shall be sealed except during the removal of containerized asbestos waste from the regulated area, and emergency exits. Emergency exits shall not be locked from the inside; however, they shall be sealed with poly sheeting and taped until needed. In any situation where exposure to high temperatures which may result in a flame hazard, fire retardant poly sheeting must be used.
5. The Contractor's Competent Person shall control site security during abatement operations in order to isolate work in progress and protect adjacent personnel.
6. The Contractor will have the Owner's assistance in notifying adjacent personnel of the presence, location and quantity of ACM in the regulated area and enforcement of restricted access by the Owner's employees.

B. Signage and Power Management

1. Post OSHA DANGER signs meeting the specifications of OSHA 29 CFR 1926.1101 at any location and approaches to the regulated area where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the regulated area to permit any personnel to read the sign and take the necessary measures to avoid exposure. Additional signs will be posted following construction of the regulated area enclosure.
2. Shut down and lock out electric power to the regulated area. Provide temporary power and lighting. Insure safe installation including GFCI of temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. Electricity shall be provided by the Owner at no expense to the Abatement Contractor.
3. Shut down and lock out heating, cooling, and air conditioning system (HVAC) components that are in, supply or pass through the regulated area. Interiors of existing ductwork may require decontamination. This may be done during the pre-cleaning phase of operations before the ductwork is sealed off or during the final cleaning phase prior to re-engagement of the system. Appropriate equipment and control measures shall be utilized to prevent contamination of building spaces during this operation. Adequate cleaning of ductwork may sometimes be accomplished by drawing high volumes of air through the system using the HEPA filtered negative pressure ventilation units. Investigate and document the regulated area and agree on the pre-abatement

condition with the Owner. Seal all intake and exhaust vents in the regulated area with duct tape and two layers of 6-mil plastic. Also, seal any seams in system components that pass through the regulated area. Remove all contaminated HVAC system filters and place in labeled 6-mil polyethylene disposal bags for staging and eventual disposal as asbestos waste.

C. Negative Pressure Filtration System

1. The Contractor shall provide enough HEPA negative air machines to effect > - 0.02" WCG pressure. The Competent Person shall determine the number of units needed for the regulated area by dividing the cubic feet in the regulated area by 15 and then dividing that result by the cubic feet per minute (CFM) for each unit to determine the number of units needed to effect > - 0.02" WCG pressure. Provide a standby unit in the event of machine failure and/or emergency in an adjacent area.
2. NIOSH has done extensive studies and has determined that negative air machines typically operate at ~50% efficiency. The contractor shall consider this in their determination of number of units needed to provide > - 0.02" WCG pressure. The contractor shall use double the number of machines, based on their calculations, or submit proof their machines operate at stated capacities, at a 2" pressure drop across the filters.

D. Design and Layout

1. Before start of work submit the design and layout of the regulated area and the negative air machines. The submittal shall indicate the number of, location of and size of negative air machines. The point(s) of exhaust, air flow within the regulated area, anticipated negative pressure differential, and supporting calculations for sizing shall be provided. In addition, submit the following:
   a. Method of supplying power to the units and designation/location of the panels.
   b. Description of testing method(s) for correct air volume and pressure differential.
   c. If auxiliary power supply is to be provided for the negative air machines, provide a schematic diagram of the power supply and manufacturer's data on the generator and switch.

E. Negative Air Machines (HEPA Units)

1. Negative Air Machine Cabinet: The cabinet shall be constructed of steel or other durable material capable of withstanding potential damage from rough handling and transportation. The width of the cabinet shall be less than 30" in order to fit in standard doorways. The cabinet must be factory sealed to prevent asbestos fibers from being released during use, transport, or maintenance. Any access to and replacement of filters shall be from the inlet end. The unit must be on casters or wheels.
2. Negative Air Machine Fan: The rating capacity of the fan must be the air moving capacity under actual operating conditions. Manufacturer's typically use "free-air" (no resistance) conditions when rating fans. The fan must be a centrifugal type fan.
3. Negative Air Machine Final Filter: The final filter shall be a HEPA filter. The filter media must be completely sealed on all edges within a structurally rigid frame. The filter shall align with a continuous flexible gasket material in the negative air machine housing to form an air tight seal. Each HEPA filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97% when challenged with 0.3µm dioctylphthalate (DOP) particles. Testing shall have been done in accordance with Military Standard MIL-STD-282 and Army Instruction Manual 136-300-175A. Each filter must bear a UL586 label to indicate ability to perform under specified conditions. Each filter shall be marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.
4. Negative Air Machine Pre-filters: The pre-filters, which protect the final HEPA filter by removing larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. A first stage pre-filter shall be a low efficiency type for particles 10 µm or larger. A second stage pre-filter shall have a medium efficiency effective for particles down to 5 µm or larger. Pre-filters shall be installed either on or in the intake grid of the unit and held in place with a special housing or clamps.
5. Negative Air Machine Instrumentation: Each unit must be equipped with a gauge to measure the pressure drop across the filters and to indicate when filters have become loaded and need to be changed. A table indicating the cfm for various pressure readings on the gauge shall be affixed

near the gauge for reference or the reading shall indicate at what point the filters shall be changed, noting cfm delivery at that point. The unit must have an elapsed time meter to show total hours of operation.

6. Negative Air Machine Safety and Warning Devices: An electrical/ mechanical lockout must be provided to prevent the fan from being operated without a HEPA filter. Units must be equipped with an automatic shutdown device to stop the fan in the event of a rupture in the HEPA filter or blockage in the discharge of the fan. Warning lights are required to indicate normal operation; too high a pressure drop across filters; or too low of a pressure drop across filters.
7. Negative Air Machine Electrical: All electrical components shall be approved by the National Electrical Manufacturer's Association (NEMA) and Underwriter's Laboratories (UL). Each unit must be provided with overload protection and the motor, fan, fan housing, and cabinet must be grounded.
8. It is essential that replacement HEPA filters be tested using an “in-line” testing method, to ensure the seal around the periphery was not damaged during replacement. Damage to the outer HEPA filter seal could allow contaminated air to bypass the HEPA filter and be discharged to an inappropriate location. Contractor will provide written documentation of test results for negative air machine units with HEPA filters changed by the contractor or documentation when changed and tested by the contractor filters

F. Pressure Differential

1. The fully operational negative air system within the regulated area shall continuously maintain a pressure differential of -0.02" water column gauge. Before any disturbance of any asbestos material, this shall be demonstrated to the Owner Representative by use of a pressure differential meter/manometer as required by OSHA 29 CFR 1926.1101(e)(5)(i). The Competent Person shall be responsible for providing, maintaining, and documenting the negative pressure and air changes as required by OSHA and this specification.

G. Monitoring

1. The pressure differential shall be continuously monitored and recorded between the regulated area and the area outside the regulated area with a monitoring device that incorporates a strip chart recorder. The strip chart recorder shall become part of the project log and shall indicate at least -0.02" water column gauge for the duration of the project.

H. Supplemental Make-Up Air Inlets

1. Provide, as needed for proper air flow in the regulated area, in locations approved by the Owner or Owner Representative by making openings in the plastic sheeting to allow outside air to flow into the regulated area. Auxiliary makeup air inlets must be located as far from the negative air machines as possible, off the floor near the ceiling, and away from the barriers that separate the regulated area from the occupied clean areas. Cover the inlets with weighted flaps which will seal in the event of failure of the negative pressure system. The flap must be sprayed with adhesive to assure sealing if it closes.

I. Testing the System

1. The negative pressure system must be tested before ACM is disturbed in any way. After the regulated area has been completely prepared, the decontamination units set up, and the negative air machines installed, start the units up one at a time. Demonstrate and document the operation and testing of the negative pressure system to the Owner or Owner Representative and/or IHC using smoke tubes and a negative pressure gauge. Testing must also be done at the start of each work shift.

J. Demonstration of the Negative Pressure Filtration System

1. The demonstration of the operation of the negative pressure filtration system to the Owner or Owner Representative and/or IHC shall include, but not be limited to, the following:
   a. Plastic barriers and sheeting move lightly in toward the regulated area.
   b. Curtains of the decontamination units move in toward regulated area.

c. There is a noticeable movement of air through the decontamination units. Use the smoke tube to demonstrate air movement from the clean room to the shower room to the equipment to the regulated area.
d. Use smoke tubes to demonstrate air is moving across all areas in which work is to be done. Use a differential pressure gauge to indicate a negative pressure of at least -0.02" across every barrier separating the regulated area from the rest of the building. Modify the system as necessary to meet the above requirements.

K. Use of the Negative Pressure Filtration System During Abatement Operations

1. Start units before beginning any disturbance of ACM occurs. After work begins, the units shall run continuously, maintaining 4 actual air changes per hour at a negative pressure differential of -0.02" water column gauge, for the duration of the work until a final visual clearance and final air clearance has been successfully completed.
2. The negative air machines shall not be shut down for the duration of the project unless authorized by the Owner or Owner Representative, in writing.
3. Abatement work shall begin at a location farthest from the units and proceed towards them. If an electric failure occurs, the Competent Person shall stop all abatement work and immediately begin wetting all exposed asbestos materials for the duration of the power outage. Abatement work shall not resume until power is restored and all units necessary are operating properly again.
4. The negative air machines shall continue to run after all work is completed and until a final visual clearance and a final air clearance has been completed for that regulated area.

L. Dismantling the System

1. After completion of the final visual and final air clearance has been obtained, the units may be shut down. The unit exterior surfaces shall have been completely decontaminated; pre-filters are not to be removed and the unit(s) inlet/outlet sealed with 2 layers of 6 mil poly immediately after shut down. No filter removal shall occur at the Owner site following successful completion of site clearance. OSHA/EPA/DOT asbestos shall be attached to the units.

3.2 CONTAINMENT BARRIERS AND COVERINGS IN THE REGULATED AREA

A. General

1. Seal off the perimeter to the regulated area to completely isolate the regulated area from adjacent spaces. All surfaces in the regulated area must be covered to prevent contamination and to facilitate clean-up. Should adjacent areas become contaminated as a result of the work, shall immediately stop work and clean up the contamination at no additional cost to the Owner. Provide firestopping and identify all fire barrier penetrations due to abatement work as specified in Section 3.3 G; FIRESTOPPING.

B. Preparation Prior to Sealing the Regulated Area

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

C. Controlling Access to the Regulated Area

1. Access to the regulated area is allowed only through the PDF. All other means of access shall be eliminated and OSHA Danger signs posted as required by OSHA. If the adjacent area is accessible to the public, the barrier must be solid and capable of withstanding the negative pressure and must be drywall/gypsum board. Danger signs must be posted as per OSHA. Any alternate method must be submitted for Owner written approval.

D. Critical Barriers

1. Completely separate the regulated area from adjacent areas using polyethylene at least 4-mil thick and duct tape. Individually seal with two layers of 6-mil polyethylene and duct tape all HVAC

openings into the regulated area. Individually seal all lighting fixtures, clocks, doors, windows, convectors, speakers, ducts, diffusers, grilles, or any other objects in the regulated area. Use care with hot/warm surfaces.

E. Primary Barriers

1. Clean all contaminated furniture, equipment, etc., with HEPA vacuum and/or wet cleaning prior to being moved or covered. Clean all surfaces in the regulated area with the HEPA vacuum and/or wet wiping before installing polyethylene sheeting.
2. Cover the regulated area with two layers of 6-mil polyethylene on the floors and two layers of 4-mil polyethylene on the walls, unless otherwise directed in writing by the Owner or Owner Representative. Floor layers must form a right angle with the wall and turn up the wall at least 300 mm (12"). Seams must overlap at least 900 mm (3') and must be spray glued and taped. Install sheeting so that layers can be removed independently from each other. Carpeting shall be covered with three layers of 6-mil polyethylene. Corrugated cardboard sheets must be placed between the top and middle layers of polyethylene. Mechanically support and seal with duct tape and glue all wall layers.
3. If stairs and ramps are covered with 6-mil polyethylene, two layers must be used. Provide 19 mm (3/4") exterior grade plywood treads held in place with duct tape/glue on the plastic. Do not cover rungs or rails with any isolation materials.

F. Secondary Barriers

1. A loose layer of 6 mil shall be used as a drop cloth to protect the primary layers from debris generated during the abatement. This layer shall be replaced as needed during the work and at a minimum once per work day.

G. Extension of the Regulated Area

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

H. Firestopping

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

3.3 SANITARY FACILITIES

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

3.4 PERSONAL PROTECTIVE EQUIPMENT

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

3.5 PRE-ABATEMENT ACTIVITIES

B. Pre-Abatement Meeting

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

C. Pre-Abatement Inspections and Preparations

1. Before any work begins on the construction of the regulated area, the Abatement Contractor will:
2. Conduct a space-by-space inspection with the Owner or Owner Representative and prepare a written inventory of all existing damage in those spaces where asbestos abatement will occur. Still or video photography may be used to supplement the written damage inventory. Documentation will be signed and certified as accurate by both parties.
3. Shut down and seal with a minimum of two layers of 6-mil plastic all HVAC systems serving the regulated area. The regulated area environment shall be completely isolated from any other air in the building.
4. Shut down and lock out in accordance with 29 CFR 1910.147 all electrical circuits which pose a potential hazard. Electrical arrangements will be tailored to the particular regulated area and the systems involved. All electrical circuits affected will be turned off at the circuit box outside the regulated area, not just the wall switch. The goal is to eliminate the potential for electrical shock which is a major threat to life in the regulated area due to water use and possible energized circuits. Electrical lines used to power equipment in the regulated area shall conform to all electrical safety standards and shall be isolated by the use of a ground fault circuit interrupter (GFCI). All GFCI shall be tested prior to use.
5. Ensure that all carpeting from floors in the regulated area has been cleaned and decontaminated and then properly protected from contamination.
6. Inspect existing firestopping in the regulated area. Correct as needed.

D. Pre-Abatement Construction and Operations

1. Perform all preparatory work for the first regulated area in accordance with the approved work schedule and with this specification.
2. Upon completion of all preparatory work, the IHC will inspect the work and systems and will notify the Owner when the work is completed in accordance with this specification. The Owner or Owner Representative may inspect the regulated area and the systems with the IHC and may require that, upon satisfactory inspection, the Abatement Contractor's employees perform all major aspects of the approved SOPs, especially worker protection, respiratory systems, contingency plans, decontamination procedures, and monitoring to demonstrate satisfactory operation. The operational systems for respiratory protection and the negative pressure system shall be demonstrated for proper performance.
3. The Abatement Contractors Competent Person shall document the pre-abatement activities described above and deliver a copy to the Owner.
4. Upon satisfactory inspection of the installation of and operation of systems.
5. The Owner will notify the Abatement Contractor in writing to proceed with the asbestos abatement work in accordance with this specification.

3.6 REMOVAL OF ACM

A. Wetting Materials

1. Use amended water for the wetting of ACM prior to removal. The Competent Person shall assure the wetting of ACM meets the definition of "adequately wet" in the EPA NESHAP's regulation for the duration of the project. A removal encapsulant may be used instead of amended water with written approval of the Owner.
2. Amended Water: Provide water to which a surfactant has been added to wet the ACM and reduce the potential for fiber release during disturbance of ACM. The mixture must be equal to or greater than the wetting provided by water amended by a surfactant consisting of one ounce of 50% polyoxyethylene ester and 50% polyoxyethylene ether, mixed with 5 gallons (19L) of water.
3. Removal Encapsulant: When authorized by the Owner, provide a penetrating encapsulant designed specifically for the removal of ACM. The material must, when used, result in adequate wetting of the ACM and retard fiber release during removal.

B. Secondary Barrier and Walkways

1. Install as a drop cloth a 6-mil polyethylene sheet at the beginning of each work shift where removal is to be done during that shift. Completely cover floors and any walls within 10-feet (3M) of the area where work is to done. Secure the secondary barrier with duct tape to prevent debris from getting behind it. Remove the secondary barrier at the end of the shift or as work in the area is completed. Keep residue on the secondary barrier wetted. When removing, fold inward to prevent spillage and place in a disposal bag.
2. Install walkways using 6-mil black polyethylene between the regulated area and the decontamination facilities (PDF and W/EDF) to protect the primary layers from contamination and damage. Install the walkways at the beginning of each shift and remove at the end of each shift.

C. Wet Removal of ACM

1. Adequately and thoroughly wet the ACM to be removed prior to removal with amended water or when authorized by Owner, removal encapsulant to reduce/prevent fiber release to the air. Adequate time (at a minimum two hours) must be allowed for the amended water or removal encapsulant to saturate the ACM. Abatement personnel must not disturb dry ACM. Use a fine spray of amended water or removal encapsulant. Saturate the material sufficiently to wet to the substrate without causing excessive dripping. The material must be sprayed repeatedly/continuously during the removal process in order to maintain adequately wet conditions. Removal encapsulants must be applied in accordance with the manufacturer's written instructions. Perforate or carefully separate, using wet methods, an outer covering that is painted or jacketed in order to allow penetration and wetting of the material. Where necessary, carefully remove covering while wetting to minimize fiber release. **In no event shall dry removal occur except when authorized in writing by the Owner and MDEQ when a greater safety hazard (e.g., electricity) is present.**
2. If ACM does not wet well with amended water due to coating or jacketing, remove as follows:
    a. Mist regulated area continuously with amended water whenever necessary to reduce airborne fiber levels.
    b. Remove saturated ACM in small sections. Do not allow material to dry out. As material is removed, bag material while still wet into disposal bags. Twist tightly the bag neck, bend over (gooseneck) and seal with a minimum of three tight wraps of duct tape. Clean/decontaminate the outside of any residue and move to washdown station adjacent to W/EDF.
    c. Fireproofing or Architectural Finish on Scratch Coat: Spray with a fine mist of amended water or removal encapsulant. Allow time for saturation to the substrate. Do not oversaturate causing excess dripping. Scrape material from substrate. Remove material in manageable quantities and control falling to staging or floor. If the falling distance is over 20-feet (6 meters), use a drop chute to contain material through descent. Remove residue remaining on the scratch coat after scraping is done using a stiff bristle hand brush. If a removal encapsulant is used, remove residue completely before the encapsulant dries. Periodically re-wet the substrate with amended water as needed to prevent drying of the material before the residue is removed from the substrate.

d. Fireproofing or Architectural Finish on Wire Lath: Spray with a fine mist of amended water or removal encapsulant. Allow time to completely saturate the material. Do not oversaturate causing excess dripping. If the surface has been painted or otherwise coated, cut small holes as needed and apply amended water or removal encapsulant from above. Cut saturated wire lath into 2' x 6' (50mm x 150mm) sections and cut hanger wires. Roll up complete with ACM, cover in burlap and hand place in disposal bag. Do not drop to floor. After removal of lath/ACM, remove any overspray on decking and structure using stiff bristle nylon brushes. Depending on hardness of overspray, scrapers may be needed for removal.

D. Wet Removal Utilizing Glove Bag Procedures

1. The work areas where the glove bag technique is to be utilized shall be posted with warning signs on the perimeter to prevent unauthorized personnel from entering the work area. All openings between the work area and uncontaminated areas outside the work area will be sealed off with 6-mil polyethylene sheeting and tape. A minimum of 6-mil thickness plastic drop cloths shall be placed under the planned glove bag removal area. Where glove bag removal is planned along existing walls, protect the walls with a minimum of 4-mil drop cloths.
2. All necessary materials and supplies will be brought into the work area before removal begins.
3. HEPA filter equipped air filtration devices shall be placed in operation as close to the actual removal area as is feasible throughout the glove bag removal process.

E. Alternate Procedures

1. Procedures described in this specification are to be utilized at all times.
2. If specified procedures cannot be utilized, a request must be made in writing to the Owner or Owner Representative providing details of the problem encountered and recommended alternatives.
3. Any alternative procedure must be approved in writing by the Owner or Owner Representative prior to implementation.

3.7 LOCKDOWN ENCAPSULATION

B. General

1. Lockdown encapsulation is an integral part of the ACM removal. At the conclusion of ACM removal and before removal of the primary barriers, all surfaces shall be encapsulated with a bridging encapsulant. The Abatement Contractor shall verify that the proposed lockdown encapsulant is compatible with other Contractor’s restoration materials.

C. Delivery and Storage

1. Deliver materials to the job site in original, new and unopened containers bearing the manufacturer's name and label as well as the following information: name of material, manufacturer's stock number, date of manufacture, thinning instructions, application instructions and the SDS for the material.

D. Acceptable Encapsulants

1. Encapsulants shall be rated acceptable when tested under the requirements of ASTM Standards for the evaluation/performance of encapsulants.

E. Worker Protection

1. Before beginning work with any material for which an SDS has been submitted, provide workers with required PPE. The required PPE shall be used whenever exposure to the material might occur. In addition to OSHA/specification requirements for respiratory protection, paint pre-filter and an organic vapor cartridge, at a minimum, shall use in addition to the HEPA filter when a solvent based encapsulant is used.

F. Encapsulation of Substrate

1. Apply two coats of encapsulant to the substrate after all ACM has been removed. Apply in strict accordance with the manufacturer's instructions. Any deviation from the instructions must be approved by the Owner Representative in writing prior to commencing the work.

2. Apply the encapsulant with an airless sprayer using a nozzle orifice as recommended by the manufacturer. Apply the first coat while the substrate is still damp from the asbestos removal process, after assuring that all ACM residues has been removed. If the surface has been allowed to dry, wet wipe or HEPA vacuum prior to spraying with encapsulant. Apply a second coat over the first coat in strict conformance with the manufacturer's instructions. Color the encapsulant and contrast the color in the second coat so that visual confirmation of completeness and uniform coverage of each coat is possible. Adhere to the manufacturer's instructions for coloring. At the completion of the encapsulation, the surface must be a uniform third color produced by the mixture.

G. Sealing Exposed Edges

1. Seal edges of ACM exposed by removal work which is inaccessible, such as a sleeve, wall penetration, etc., with two coats of bridging encapsulant. Prior to sealing, permit the exposed edges to dry completely to permit penetration of the bridging encapsulant. Apply in accordance with 3.3.4 (B).

3.8 DISPOSAL OF ACM WASTE MATERIALS

A. General

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

B. Procedures

1. The Owner must be notified at least 24 hours in advance of any waste removed from the containment.
2. Asbestos waste shall be packaged and moved through the W/EDF into a covered transport container in accordance with NESHAP’s packaging requirements. Waste shall be double bagged prior to disposal. Wetted waste can be very heavy. Bags shall not be overfilled. Bags shall securely seal to prevent accidental opening and/or leakage. The top shall be tightly twisted and goosenecked prior to sealing with at least three wraps of duct tape. Ensure that unauthorized persons do not have access to the waste material once it is outside the regulated area. Transport containers must be covered at all times when not in use. NESHAP's signs must be adhered to containers during loading and unloading. Material shall not be transported in open vehicles. If drums are used for packaging, the drums shall be labeled properly and shall not be re-used.
3. Waste Load Out: Waste load out shall be done in accordance with the procedures in the W/EDF Decontamination Procedures. Bags shall be decontaminated on exterior surfaces by wet cleaning and/or HEPA vacuuming before being placed in the second bag. Manifesting of all waste shipments shall be performed by Abatement Contractor.
4. Asbestos waste with sharp edged components, i.e., nails, screws, lath, strapping, tin sheeting, jacketing, metal mesh, etc., which might tear polyethylene bags, shall be wrapped securely in burlap before packaging and, if needed, use a polyethylene lined fiber drum as the second container, prior to disposal.

3.9 PROJECT DECONTAMINATION

A. General

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

B. Regulated Area Clearance

1. Clearance air testing and other requirements which must be met before release of the Abatement Contractor and re-occupancy of the regulated area space, are specified in Final Visual Inspection and Air Clearance Testing Procedures.

C. Work Description

1. Decontamination includes the cleaning and clearance of the air in the regulated area and the decontamination and removal of the enclosures/facilities installed prior to the abatement work including primary/critical barriers, PDF, W/EDF facilities, and negative pressure systems.

D. Pre-Decontamination Conditions

1. Before decontamination starts, all ACM and ACE from the regulated area shall be removed, all waste collected and removed, and the secondary barrier of polyethylene removed and disposed of along with any gross debris generated by the work.
2. At the start of decontamination, the following shall be in place:
   a. Primary barriers consisting of two layers of 6-mil polyethylene on the floor and on the walls.
   b. Critical barriers consisting of two layers of 6-mil polyethylene, which is the sole barrier between the regulated area and the rest of the building or outside.
   c. Critical barrier polyethylene over lighting fixtures, clocks, HVAC openings, doorways, windows, convectors, speakers and other openings in the regulated area.
   d. Decontamination facilities for personnel and equipment in operating condition, and the negative pressure system in operation.

E. First Cleaning

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

F. Lockdown Encapsulation of Abated Surfaces

1. With the express written permission of the Owner Representative, perform lockdown encapsulation of all surfaces from which asbestos was abated in accordance with the procedures in this specification. Negative pressure shall be maintained in the regulated area during the lockdown.

3.10 FINAL VISUAL INSPECTION AND AIR CLEARANCE TESTING

A. General

1. Notify the Owner and Owner Representative 48 hours in advance for the performance of the final visual inspection and air clearance testing. The final visual inspection and air clearance testing will be performed by the IHC starting after the final cleaning.

B. Final Visual Inspection

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

C. Final Air Clearance Testing

1. After an acceptable final visual inspection by the IHC, the IHC will perform the final air clearance

testing. Air samples will be collected and analyzed in accordance with procedures for AHERA in this specification. 5 PCM or TEM samples shall be collected for clearance and a minimum of one field blank. TEM analysis shall be done in accordance with procedures for EPA AHERA in this specification. If the release criteria are not met, the Contractor shall repeat the final cleaning and continue decontamination procedures until clearance is achieved. **All Additional inspection and testing costs will be borne by the Contractor**.

2. If release criteria are met, proceed to perform the abatement closeout and to issue the certificate of completion in accordance with these specifications.

D. Final Air Clearance Procedures

1. Contractor's Release Criteria: Work in a regulated area is complete when the regulated area is visually clean and airborne fiber levels have been reduced to or below 0.01 f/cc as measured by the AHERA PCM protocol, or 70 AHERA structures per square millimeter (s/mm^2) by AHERA TEM.
2. Air Monitoring and Final Clearance Sampling: To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the IHC will secure samples and analyze them according to the following procedures:
   a. Fibers Counted: “Fibers” referred to in this section shall be either all fibers regardless of composition as counted in the NIOSH 7400 PCM method or asbestos fibers counted using the AHERA TEM method.
   b. Aggressive Sampling: All final air testing samples shall be collected using aggressive sampling techniques except where soil is not encapsulated or enclosed. Samples will be collected on 0.8μ MCE filters for PCM analysis and 0.45μ Polycarbonate filters for TEM. A minimum of 1200 Liters of using calibrated pumps shall be collected for clearance samples. Before pumps are started, initiate aggressive air mixing sampling as detailed in 40 CFR 763 Subpart E (AHERA) Appendix A (III)(B)(7)(d). Air samples will be collected in areas subject to normal air circulation away from corners, obstructed locations, and locations near windows, doors, or vents. After air sampling pumps have been shut off, circulating fans shall be shut off. The negative pressure system shall continue to operate.
   c. Random bulk samples shall be collected from plaster areas which have been abated to ensure that the plaster has been properly decontaminated. The total number of samples to be collected from the plaster areas shall be; <1000 SF of plaster – 3 samples; >1000 to <5000 SF of plaster – 5 samples; and >5000 SF of plaster – 7 samples. The plaster samples shall be collected in a statistically random manner and shall be analyzed by PLM method. The clearance level to determine the plaster clean is 0% asbestos by weight as analyzed by PLM method. If this level is achieved, the plaster areas shall be considered clear. If the levels are >0% asbestos, the areas shall be re-cleaned until the sample results are 0%.

E. Clearance Sampling Using PCM

1. The IHC will perform clearance samples as indicated by the specification.
2. The NIOSH 7400 PCM method will be used for clearance sampling with a minimum collection volume of 1200 Liters of air. A minimum of 5 PCM clearance samples shall be collected. All samples must be equal to or less than 0.01 f/cc to clear the regulated area.

F. Clearance Sampling Using TEM

1. The TEM method will be used for clearance sampling with a minimum collection volume of 1200 Liters of air. A minimum of 5 clearance samples shall be collected. All samples must be equal to or less than 70 AHERA structures per square millimeter (s/mm^2) AHERA TEM.

G. Laboratory Testing of PCM Clearance Samples

1. The services of an AIHA accredited laboratory will be employed by the IHC to perform analysis for the PCM air samples (where applicable). The accredited laboratory shall be successfully participating in the AIHA Proficiency Analytical Testing (PAT) program. Samples will be sent daily by the IHC so that verbal/faxed reports can be received within 24 hours. A complete record, certified by the laboratory, of all air monitoring tests and results will be furnished to the Abatement Contractor.

H. Laboratory Testing of TEM Clearance Samples

1. Samples shall be sent by the IHC to a NIST accredited laboratory for analysis by TEM. The laboratory shall be successfully participating in the NIST Airborne Asbestos Analysis (TEM) program. Verbal/faxed results from the laboratory shall be available within 24 hours after receipt of the samples. A complete record, certified by the laboratory, of all TEM results shall be furnished to the Abatement Contractor.

I. Laboratory Testing of Bilk Samples

1. Samples shall be sent by the IHC to a NIST accredited laboratory for analysis by PLM. The laboratory shall be successfully participating in the NIST Bulk Asbestos Analysis (PLM) program. Verbal/faxed results from the laboratory shall be available within 24 hours after receipt of the samples. A complete record, certified by the laboratory, of all PLM results shall be furnished to the Abatement Contractor.

3.11 ABATEMENT CLOSEOUT AND CERTIFICATE OF COMPLIANCE

A. Completion of Abatement Work

1. After thorough decontamination, seal negative air machines with two layers of 6-mil polyethylene and duct tape to form a tight seal at the intake/outlet ends before removal from the regulated area. Complete asbestos abatement work upon meeting the regulated area clearance criteria and fulfilling the following:
2. Remove all equipment, materials, and debris from the project area.
3. Package and dispose of all asbestos waste as required.
4. Repair or replace all interior finishes damaged during the abatement work not scheduled for restoration by others.
5. Fulfill other project closeout requirements as specified elsewhere in this specification.

B. Certificate of Completion by Abatement Contractor

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

C. Work Shifts

1. All work shall be done during administrative hours (7:00 AM to 5:00 PM) Monday through Friday excluding federal holidays. Any change in the work schedule must be approved in writing by the Owner.

ATTACHMENT #1

CERTIFICATE OF COMPLETION

PROJECT NAME AND NUMBER:_____

PROJECT ADDRESS:_____

_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:_____

_____

1. I certify that I have personally inspected, monitored and supervised the abatement work of (specify regulated areas or building):

Which took place from_____to _____

2. That throughout the work, all applicable requirements/regulations and the specifications were met.

3. That any person who entered the regulated area was protected with the appropriate PPE and respirator and that they followed the proper entry and exit procedures and the proper operating procedures for the duration of the work.

4. That all employees of the Abatement Contractor engaged in this work were trained in respiratory protection, were experienced with abatement work, had proper medical surveillance documentation, were fit-tested for their respirator, and were not exposed at any time during the work to asbestos without the benefit of appropriate respiratory protection.

5. That I performed and supervised all inspection and testing specified and required by applicable regulations and specifications.

6. That the negative pressure system was installed, operated and maintained in order to provide a minimum of 4 air changes per hour with a continuous 5.0 Pa (-0.02") of water column pressure.

Signature:_____ Date:_____
(Printed Name/ Signature and Accreditation No./Exp.)

Signature:_____ Date:_____
(Printed Name/ Signature and Accreditation No./Exp.)

ATTACHMENT #2

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME AND NUMBER:_____

PROJECT ADDRESS:_____

_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:_____

_____

WORKING WITH ASBESTOS CAN BE HAZARDOUS TO YOUR HEALTH. INHALING ASBESTOS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCERS. IF YOU SMOKE AND INHALE ASBESTOS FIBERS YOUR CHANCES OF DEVELOPING LUNG CANCER IS 50% TO 90% GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

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

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

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

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

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, occupational history, pulmonary function test, and may have included a chest x-ray evaluation. The physician issued a positive written opinion after the examination.

Signature:_____ Printed Name:_____

ATTACHMENT #3

AFFIDAVIT OF MEDICAL SURVEILLANCE, RESPIRATORY PROTECTION AND TRAINING/ACCREDITATION

PROJECT NAME AND NUMBER:_____

PROJECT ADDRESS:_____

_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:_____

_____

1. I verify that the following individual

Name:_____

who is proposed to be employed in asbestos abatement work associated with the above project by the named Abatement Contractor, is included in a medical surveillance program in accordance with 29 CFR 1926.1101(m), and that complete records of the medical surveillance program as required by 29 CFR 1926.1101(m)(n), 29 CFR 1910.134, and 29 CFR 1910.20 are kept at the offices of the Abatement Contractor at the following address.

Address:_____

_____

2. I verify that this individual has been trained, fit-tested and instructed in the use of all appropriate respiratory protection systems and that the person is capable of working in safe and healthy manner as expected and required in the expected work environment of this project.

3. I verify that this individual has been trained as required by 29 CFR 1926.1101(k). This individual has also obtained a valid accreditation certificate. Documentation will be kept onsite.

Signature of Abatement Contractor:_____Date:_____

Printed Name of Abatement Contractor:_____

ATTACHMENT #4

ABATEMENT CONTRACTOR/COMPETENT PERSON(S) REVIEW AND ACCEPTANCE OF THE VA'S ASBESTOS SPECIFICATIONS

PROJECT NAME AND NUMBER:_____

PROJECT ADDRESS:_____

_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:_____

_____

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

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

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

Abatement Contractor Owner's Signature_____Date_____

Abatement Contractor Competent Person(s)_____Date_____

ATTACHMENT #5

DAILY SIGN-IN AND SIGN-OUT SHEET

PROJECT NAME AND NUMBER: _____

PROJECT ADDRESS: _____

_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS: _____

_____

PRINT NAME	CERT. NUMBER EXP. DATE	TIME-IN	TIMEOUT

ATTACHMENT #6

DAILY ACTIVITY REPORT

Project Name:		Project No.	
Building:		Date	
Area:		Project Day No.	of
Abatement Contractor:		Personnel	
IHC:		Sheet	of
ACM Removed:			
Estimated Percent of Phase Completed:		On Schedule	Yes No

GENERAL REMARKS/MEETINGS/SITE VISITS/ABATEMENT CONTRACTOR PROGRESS:

Abatement Contractor Supervisor:	Reviewed by:

ATTACHMENT #7

VISITOR RELEASE FORM

PROJECT NAME AND NUMBER:_____

PROJECT ADDRESS:_____

_____

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:_____

_____

VISITOR NAME:_____

VISITOR'S COMPANY:_____

PURPOSE OF VISIT:_____

Time of Entry to the Project Site:_____to the Exclusion Zone:_____

Time of Departure from the Site:_____from the Exclusion Zone:_____

Personal Protective Equipment Utilized:_____

I acknowledge and understand that I am visiting a hazardous waste control work area. I understand the dangers of exposure to hazardous waste.

I have read and understand the Site Safety and Health Plan for this project and will abide by the directions, stipulations and terms specified therein.

I knowingly assume all risks in connection with potential exposure to hazardous waste and I do hereby, for myself and my heirs at law, release and forever discharge the Owner, Owner Representative, Project Administrator, independent testing laboratory, architect, engineers, consultants or contracting firms employed by the Owner, employees, nominees, personal representative, affiliates, successors, and assigns from and against any and all liability whatsoever at common law or otherwise. I hereby waive and relinquish any and all claims of every nature which I now have or may have or claim to have which are in any way, directly or indirectly, related to exposure to hazardous waste and hazardous waste containing materials.

Furthermore, I know that I am entering a construction area where workplace conditions, such as water on floors, scaffolding, electrical equipment, etc., CAN CREATE HAZARDOUS SITUATIONS FOR VISITORS. I assume all risk of accidental injury or illness regardless of cause while visiting this construction site. I hereby waive and relinquish any and all claims of every nature which I now have or may have or claim to have which are in any way, directly or indirectly, related to such injury.

THIS RELEASES ALL PARTIES ON THE ABOVE NAMED PROJECT:

Visitor's Signature:_____

Date:_____

Witness:_____

ATTACHMENT #8

FINAL CLEARANCE VISUAL INSPECTION

Project:	Project No.:
Building\Address:	Date:
Area:	ACM Removed:
Contractor:	Project Permit No.:

Residual Dust On:	**Yes**	**No**	**Not Applicable**
Floors			
Walls			
Ledges			
Roof Decking			
Pipes			
Hangars			
Conduits			
Cables			
Light Fixtures			
Ductwork			
Equipment			
HEPA machine(s) running			
Containment dry			
Only critical barriers present			
Decontamination unit attached and functional			

Visual Inspection: ___Pass ___Fail

Remarks:_____

_____

Technician:_____ _____
(Printed Name/ Accreditation No./Exp. Date) Signature

Asbestos C/S:_____ _____
(Printed Name/ Accreditation No./Exp. Date) Signature

END OF SECTION

APPENDIX A

General Notes

GENERAL NOTES

1. ALL QUANTITIES ARE ESTIMATED BASED ON ROUGH FIELD MEASUREMENTS. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES. BIDS SHALL INCLUDE ALL LISTED ACM IN THE SCHEDULE OF QUANTITIES, AND SHALL BE BASED ON ABATEMENT CONTRACTOR'S VERIFIED QUANTITIES OF MATERIALS.
2. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR CONTRACT QUANTITIES AND BIDS FOR A COMPLETED PROJECT AS INDICATED IN SPECIFICATIONS REGARDLESS OF THE ACCURACY OF THE ESTIMATED QUANTITIES GIVEN ON THE CONSTRUCTION DOCUMENTS. THE BIDDER IS CAUTIONED TO ENSURE THAT ALL COSTS ARE COVERED IN THIER BID AS NO ADDITIONS SHALL BE MADE TO THE CONTRACT DUE TO ERRORS IN THE ESTIMATED QUANTITIES.
3. ABATEMENT CONTRACTOR WILL COORDINATE ALL WORK, PHASING AND NUMBER OF MOBILIZATIONS WITH THE GENERAL CONTRACTOR.
4. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP AND DECONTAMINATION OF ALL SURFACES IN THE DESIGNATED REMOVAL AREAS.
5. THE ABATEMENT CONTRACTOR SHALL ENSURE THAT ALL DECONTAMINATION FACILITIES ARE CONTIGUOUS WITH THE LECTURE HALL ASBESTOS REMEDIATION AREA. THESE FACILITIES SHALL BE CONSTRUCTED, AT A MINIMUM, OF PVC PIPING ENCLOSED WITH TWO (2) LAYERS OF 6-MIL POLYETHYLENE SHEETING, UNLESS OTHERWISE SPECIFIED. THESE FACILITIES SHALL CONTAIN AN EQUIPMENT ROOM, A SHOWER WITH HOT AND COLD RUNNING WATER AND A CLEAN ROOM.
6. THE ABATEMENT CONTRACTOR SHALL PROVIDE, OPERATE, AND MAINTAIN CONTINUOUS READ-OUT PRESSURE DIFFERENTIAL MONITORS DURING ASBESTOS REMOVAL OF HEAVY TEXTURE ON PLASTER CEILINGS LOCATED IN THE LECTURE HALL, AND MAINTAIN A CONSTANT NEGATIVE PRESSURE DIFFERENTIAL PRESSURE INSIDE THE ASBESTOS REMEDIATION AREA AT A MINIMUM OF -0.02 INCHES OF WATER COLUMN.
7. THE ABATEMENT CONTRACTOR SHALL TAKE INTO CONSIDERATION THAT THE DRYWALL CONTAINING ASBESTOS JOINTING COMPOUND MAY BE IN VARIOUS HARD TO CONTAIN LOCATIONS THROUGHOUT THE BUILDING. THE ABATEMENT CONTRACTOR SHALL INSURE THAT ALL COSTS ARE COVERED IN HIS/HER BID AS NO ADDITIONAL COSTS SHALL BE MADE TO THE CONTRACT FOR UNUSUAL CONTAINMENT ENCLOSURES.
8. ABATEMENT CONTRACTOR WILL COORDINATE NUMBER OF PENETRATION, SIZE OF PENETRATIONS, AND LOCATION OF PENETRATIONS WITH THE GENERAL CONTRACTOR.
9. ABATEMENT CONTRACTOR SHALL APPLY ENCAPSULANT TO ALL SURFACES OF DESIGNATED ASBESTOS REMEDIATION AND CLEAN-UP/DECONTAMINATION AREAS. THIS ENCAPSULATION SHALL MEET REQUIREMENTS AS SPECIFIED IN THE SPECIFICATIONS.
10. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR MOVING ALL NON-FIXED SCHOOL PROPERTY OUT OF THE ABATEMENT CONTRACTORS WORK AREAS EXCLUDING CABINETS AND OTHER FIXED OBJECTS.
11. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR BUT NOT LIMITED TO THE REMOVAL, CLEANING, AND STORAGE OF ALL DROP CEILING PANELS/GRID, CEILING TILES, LIGHTING, CABINETS, TRIM, MOLDING, AND ANY OTHER FIXED AND NON-FIXED OBJECTS TO WALL SURFACES UNDER CONTAINMENT TO GAIN ACCESS TO DRYWALL CONTAINING ASBESTOS JOINTING COMPOUND. THE ABATEMENT CONTRACTOR SHALL INSURE THAT ALL COSTS ARE COVERED IN HIS/HER BID AS NO ADDITIONAL COSTS SHALL BE MADE TO THE CONTRACT.

12. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING TAGGED AND CERTIFIED SCAFFOLDING ERECTED IN THE LECTURE HALL TO REMAIN IN PLACE UNTIL THE END OF FIRE SPRINKLER SYSTEM PROJECT. THE ABATEMENT CONTRACTOR SHALL INSURE THAT ALL COSTS ARE COVERED IN HIS/HER BID AS NO ADDITIONAL COSTS SHALL BE MADE TO THE CONTRACT.
13. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR AVOIDING CONTAMINATION TO AREAS NOT DESIGNATED AS ASBESTOS REMEDIATION OR CLEAN-UP/DECONTAMINATION AREAS. IF CONTAMINATION SHOULD OCCUR, ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE, AT NO COST TO THE OWNER, FOR THE CLEAN-UP AND DECONTAMINATION OF SUCH AREAS.
14. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR LOCK-OUT AND PROTECTION OF ALL ELECTRICAL AND MECHANICAL SYSTEMS, AS NEEDED PRIOR TO BEGINNING ASBESTOS REMEDIATION.
15. ABATEMENT CONTRACTOR SHALL, ON A DAILY BASIS, REMOVE ALL ACM, DEBRIS, STANDING WATER, AND ACM BAGS FROM INSIDE THE ASBESTOS REMEDIATION AREAS, AND STORE IN PREVIOUSLY APPROVED LOCKABLE CONTAINER.
16. ABATEMENT CONTRACTOR SHALL CONSTRUCT POLYETHYLENE SHEETING CONTAINMENT AS SPECIFIED AND BE RESPONSIBLE FOR ENSURING THAT ALL PENETRATIONS ARE SEALED AND/OR CRITICAL BARRIERS INSTALLED.
17. A DESIGNATED STAGING AREA WILL BE PROVIDED TO THE ABATEMENT CONTRACTOR AND AN AREA TO BE COORDINATED WITH THE OWNER, OWNER REPRESENTATIVE, AND GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF THE WORK.
18. DURING NORMAL BUSINESS HOURS, ABATEMENT CONTRACTOR SHALL ENSURE THAT ALL WORKERS WHILE IN OCCUPIED AREAS OF THE BUILDING OR GROUNDS, DON STREET CLOTHING ONLY. AT NO TIME SHALL WORKERS BE ALLOWED OUT OF THE ASBESTOS REMEDIATION AREA WHILE WEARING PERSONAL PROTECTIVE EQUIPMENT.
19. LOCATIONS OF ALL NEGATIVE AIR MACHINES, CONTAINMENT BARRIERS AND DECONTAMINATION UNITS SHALL BE DETERMINED BY THE ABATEMENT CONTRACTOR.
20. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR BUILDING SECURITY DURING THE LENGTH OF THIS CONTRACT IN ALL AREAS THAT ARE UNDER HIS/HER CONTROL.
21. GENERAL CONTRACTOR WILL PROVIDE RESTROOM FACILITIES LOCATED OUTSIDE THE BUILDING. THE ABATEMENT CONTRACTOR PERSONNEL MAY NOT USE THEM WHEN THEY ARE WEARING PERSONAL PROTECTIVE EQUIPMENT (PPE).
22. ELECTRICAL POWER AND WATER IS AVAILABLE FROM THE BUILDING AT NO COST TO THE ABATEMENT CONTRACTOR.
23. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF THE ASBESTOS-CONTAINING WASTE.
24. UPON DISCOVERY OF ANY VARIATION IN THE WORK, ABATEMENT CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, OWNER REPRESENTATIVE, AND GENERAL CONTRACTOR IN WRITING.

APPENDIX B

Pre-Renovation Asbestos Inspection Report

TETRA TECH

November 20, 2019

Mr. Loras O'Toole, PE
University Engineer
Montana State University
P.O. Box 170510
Bozeman, Montana 59717-0510

Delivered via email loras@montana.edu

SUBJECT: **Pre-Renovation Asbestos Inspection Report**
Fire Suppression System Project
Leon Johnson Hall
Montana State University
Bozeman, Montana
Tetra Tech Project No. 117-8598016.100

Dear Mr. O'Toole:

On October 15, 2019, Tetra Tech, Inc. (Tetra Tech) conducted a pre-renovation asbestos inspection for the fire suppression system project at Leon Johnson Hall on the Montana State University Bozeman Campus. This pre-renovation inspection covered only those areas that were anticipated to be disturbed during the fire suppression system project.

Based on correspondence with you prior to commencement of the project, the pre-renovation inspection consisted of reviewing the findings presented in the *Asbestos Inspection Report,* dated November 4, 2010, completed by Environmental Solutions, LLC of Bozeman, Montana (Environmental Solutions). In addition, additional sampling was conducted of suspect asbestos-containing materials (ACM) associated with the fire suppression system project that were not included in that report. Details of our inspection is provided below.

PRE-RENOVATION ASBESTOS INSPECTION

The pre-renovation asbestos inspection was conducted in accordance with the Administrative Rules of Montana 17.74.354, using the currently recognized standard protocol developed under the National Emission Standards for Hazardous Air Pollutants (NESHAP) and the Asbestos Hazard Emergency Response Act (AHERA), as administered by the State of Montana Department of Environmental Quality (MDEQ).

As mentioned above, the asbestos inspection services were conducted based on the areas expected to be disturbed during the fire suppression system project and the findings in Environmental Solutions 2010 *Asbestos Inspection Report*. The results of that document were considered to be correct and only suspect building materials that are anticipated to be disturbed during the fire suppression system project were evaluated. In addition to the materials sampled by Environmental Solutions, several more suspect ACM were identified in the areas expected to be disturbed during the fire suppression project and these additional materials were sampled by Tetra Tech during this investigation.

Tetra Tech's approximate sample locations of the newly identified suspect ACM are presented on Figures 1 through 6. Mr. Jay Harper and Mr. Shane Matolyak of Tetra Tech, MDEQ Accredited Asbestos Inspectors, collected samples of newly identified suspect ACM. Their Inspector Accreditation Certifications are presented in Attachment A.

The bulk samples were shipped, along with completed chain-of-custody documentation, to Crisp Analytical of Carrollton, Texas for the analysis of asbestos fibers by polarized light microscopy (PLM) using U.S. Environmental Protection Agency (EPA) Methods described in 40 CFR Part 763 Appendix E Subpart E (Interim and EPA 600/R-93 / 116 (Improved). A copy of the laboratory analytical report is contained in Attachment B.

A summary of the suspect building materials that are anticipated to be disturbed during the fire suppression system project and identified to contain greater than 1% asbestos is provided in Table 1. These materials were identified as asbestos containing by Environmental Solutions in their 2010 *Asbestos Inspection Report*.

Table 1
Summary of ACM
Fire Suppression System Project
Leon Johnson Hall
Bozeman, Montana

HA Number	Material Description and Location	Percent Asbestos	Material Type	NESHAP Category
01, 02, 03	White joint compound associated with non-asbestos containing wallboard and texture located throughout	3% Chrysotile	Miscellaneous	Category II Non-Friable
100, 101, 102	Heavy texture on non-asbestos containing plaster ceiling located in Rooms 338 and 339 (Lecture Hall)	10 % Chrysotile	Surfacing	RACM

HA: Homogeneous Area Number
NESHAP: National Emission Standard for Hazardous Air Pollutants
RACM: Regulated Asbestos Containing Material

In accordance with state and federal regulations pertaining to asbestos, the ACMs identified in Table 1 are required to be abated prior to disturbance. These ACMs are required to be removed by a licensed asbestos abatement contractor using appropriate asbestos abatement methods and procedures in accordance with applicable state and federal regulations. Following the completion of asbestos abatement, a visual inspection and asbestos air clearance need to be conducted as required by ARM 17.74.357. Any contractor preparing to bid or perform work on the site should be informed of the potential presence of ACM. Contractors should also be informed of compliance requirements under current state and federal regulations.

The following suspect building materials that Tetra Tech sampled during this investigation were found not to contain asbestos by laboratory analysis:

- White with small pinholes 2-foot by 4-foot ceiling panels located throughout (LJ-M5.1A, B, C, D, E, F, G, H, I)
- White with small pinholes and fissures 2-foot by 4-foot ceiling panels located in Rooms 209, 319-319D, and 537A (LJ-M5.2A, B, C)
- White with small pinholes 2-foot by 2-foot ceiling panels located in Rooms 301, 302, 324, 324A, 335, and 337 (LJ-M5.3A, B, C)
- White rough surface 2-foot by 2-foot ceiling panels located in Rooms 323 and 325-334 (LJ-M5.4A, B, C)

- White with pinholes and fissures 2-foot by 2-foot ceiling panels located in Rooms 602, 605, 617, and corridor of 699 (LJ-M5.5A, B, C)
- Concrete basement foundation (LJ-M18.1A, B, C)
- White CMU block and associated gray mortar located throughout building (LJ-M22.1A, B, C)
- Gray fiber board located above ceiling in Room 401 corridor (LJ-M33.1A, B, C)
- White plaster located on ceiling in Room 339 (LJ-S1.1A, B, C, D, E)

LIMITATIONS

This report only covers the areas that will be disturbed during the fire suppression system project that were described above. Other ACMs are present at the site that is not anticipated to be disturbed as part of the fire suppression system project. These ACMs are described in the *Asbestos Inspection Report,* dated November 4, 2010, completed by Environmental Solutions, LLC of Bozeman, Montana. Please note that prior to any remodel or demolition activities that will affect these other materials, an extensive inspection, will need to be conducted in accordance with the requirements put forth by the NESHAP and MDEQ.

Our opinions are intended exclusively for use by Montana State University. The scope of services performed by Tetra Tech may not be appropriate to satisfy the needs of other users, and any use or re-use of this document, or the findings presented herein is prohibited and at the sole risk of the user. No additions or deletions are permitted without the express written consent of Tetra Tech.

Furthermore, the opinions presented herein are limited by the requested scope of services and the site conditions existing at the time of our investigation. Therefore, our opinions and recommendations may not apply to future site conditions which we have not had the opportunity to evaluate.

It has been a pleasure assisting you with this project. If you should have any questions or need any additional information please contact me in our Tetra Tech Billings, Montana office at (406) 248-9161.

Respectfully submitted,

Tetra Tech, Inc.

Roger W. Herman, Jr.
Asbestos, Lead & IH Services Manager

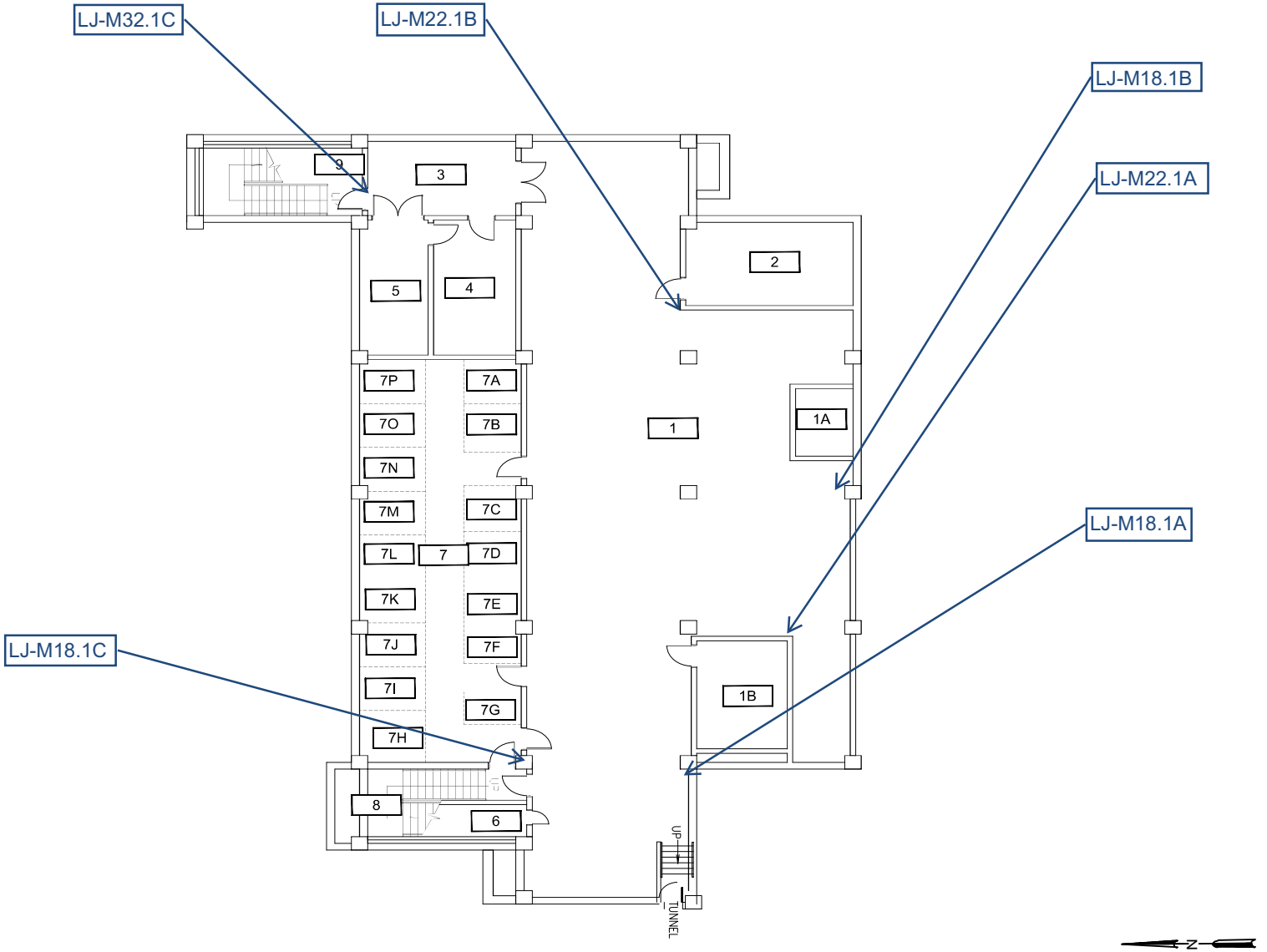
PB/RH

I:\H-M\Montana State University\117-8598016 - Leon Johnson Pre-Reno ASB\05-Deliverables\Final\ MSU-Leon Johnson Fire Suppression System Pre-Reno ASB Report.docx

Figures
Attachment A – Inspector Accreditation Certifications
Attachment B – Laboratory Analytical Report

TETRA TECH

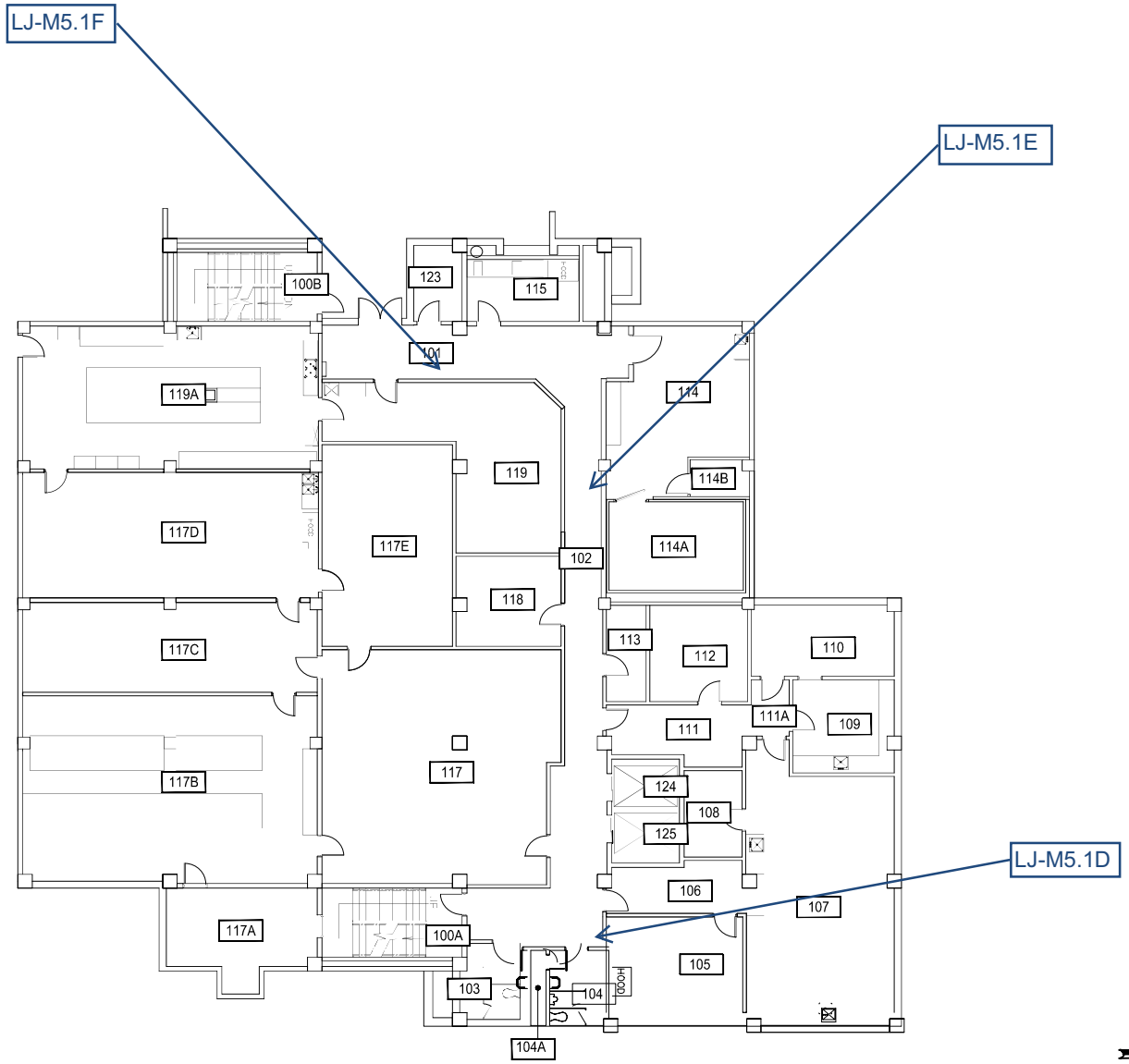
FIGURES



Pre-Renovation Asbestos Inspection
Sample Collection Locations
Montana State University
Leon Johnson Hall
Fire Suppression System Project
Bozeman, Montana

TETRA TECH

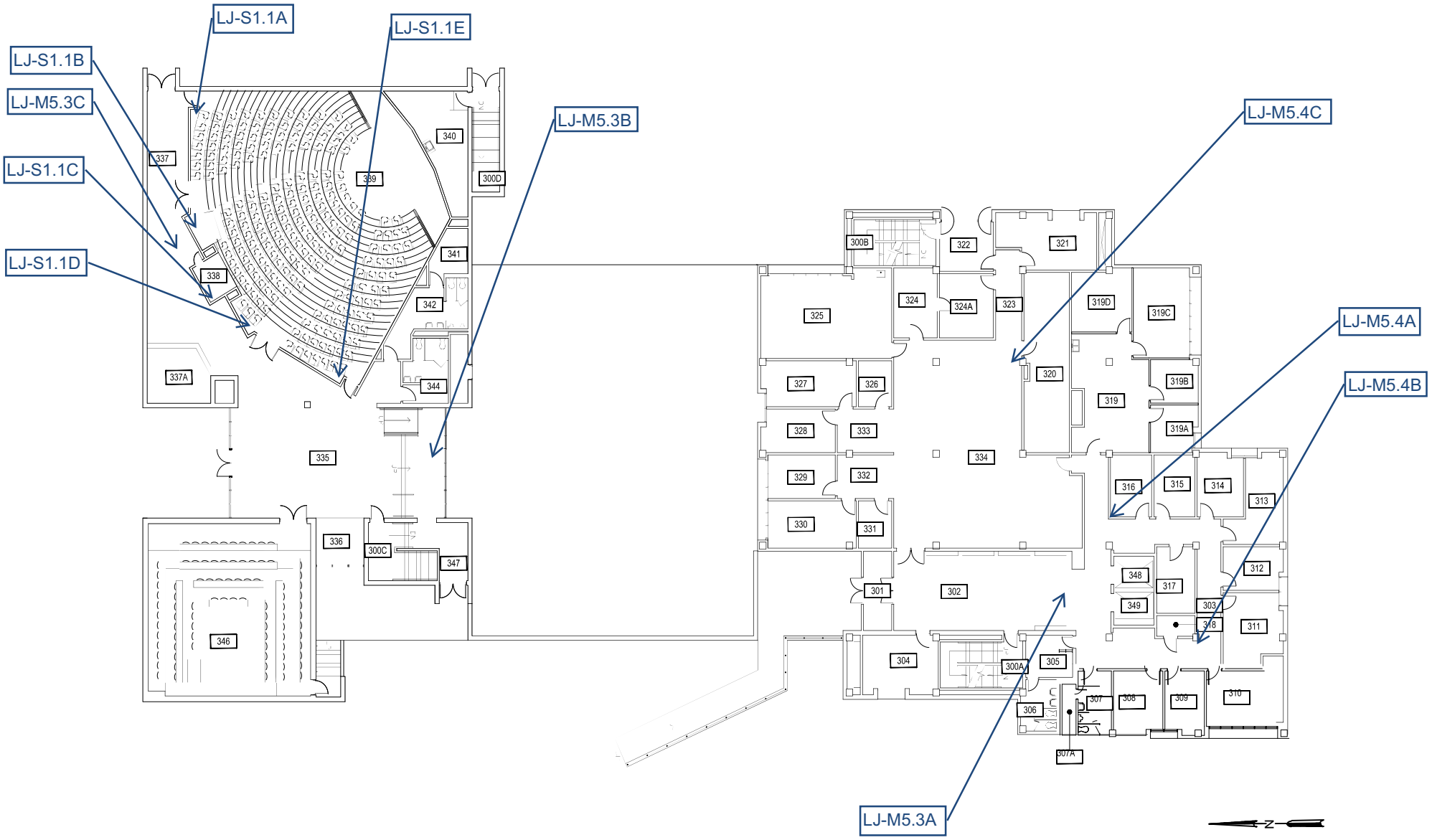
DRAWN BY:	APPROX. SCALE:	FIGURE NO.
PB	NA	1
REVIEWED:	DATE:	PROJ. NO.
RH	11/19/2019	117-8598016



Pre-Renovation Asbestos Inspection
Sample Collection Locations
Montana State University
Leon Johnson Hall
Fire Suppression System Project
Bozeman, Montana

TETRA TECH

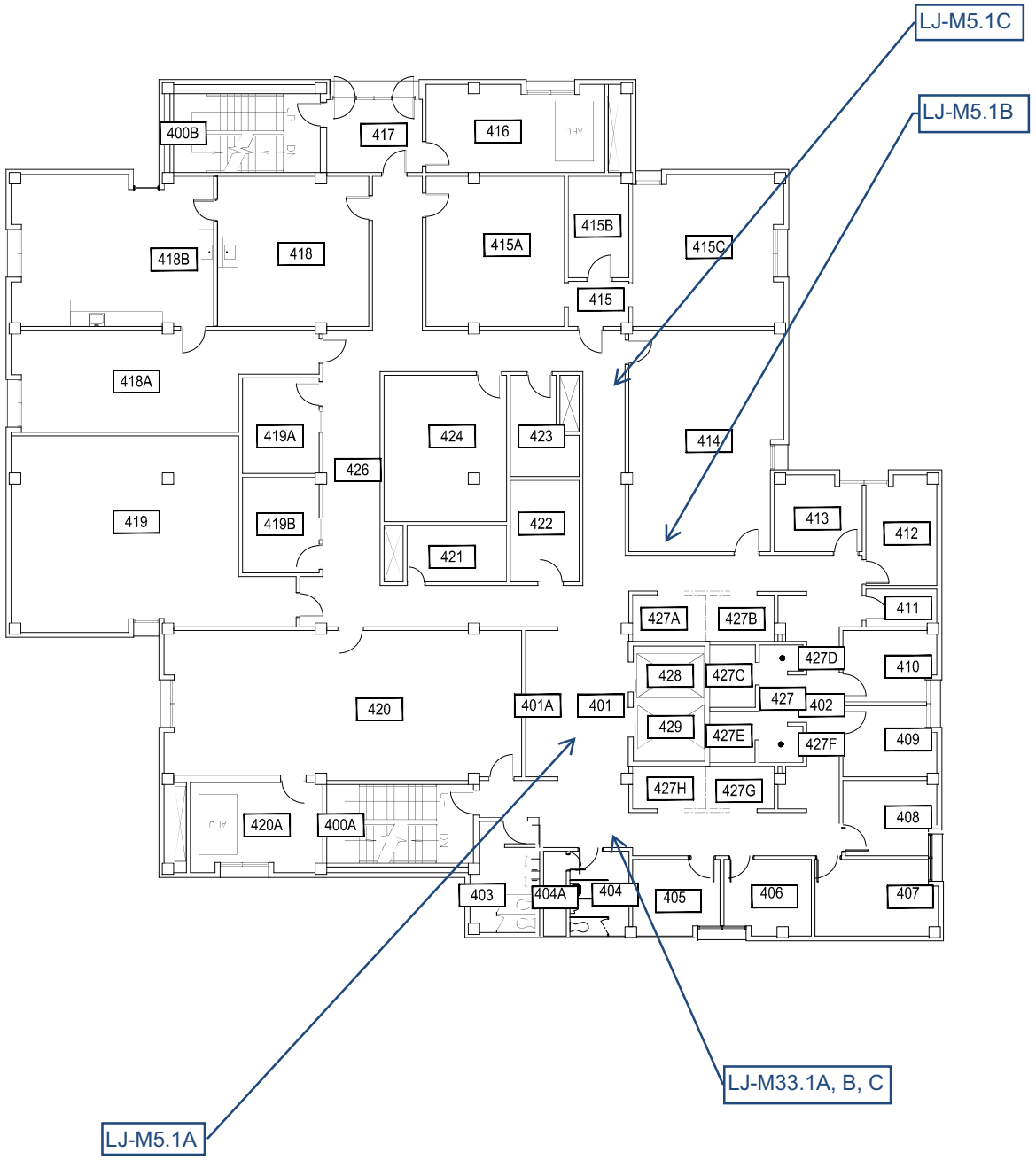
DRAWN BY:	APPROX. SCALE:	FIGURE NO.
PB	NA	2
REVIEWED:	DATE:	PROJ. NO.
RH	11/19/2019	117-8598016



Pre-Renovation Asbestos Inspection
Sample Collection Locations
Montana State University
Leon Johnson Hall
Fire Suppression System Project
Bozeman, Montana

TETRA TECH

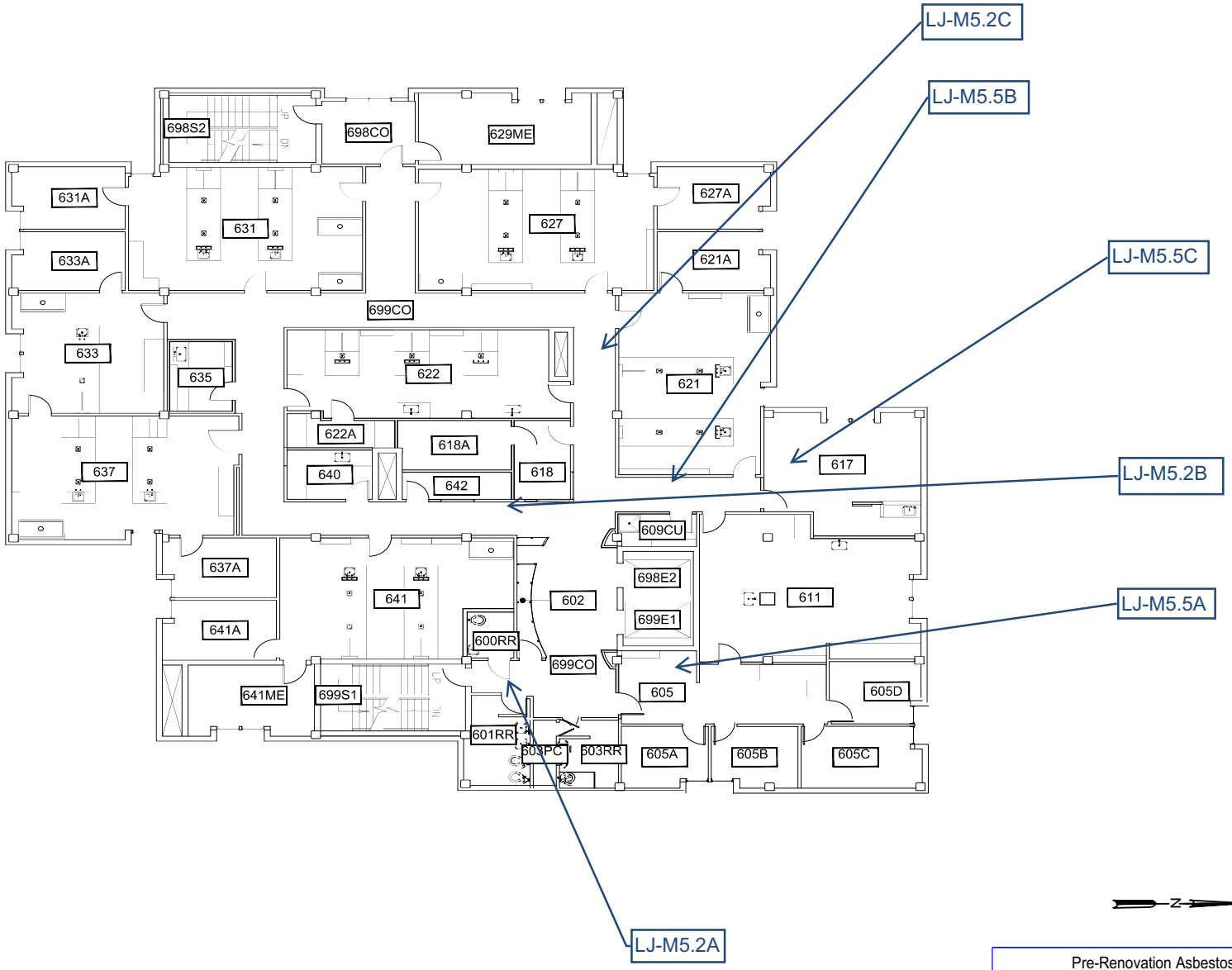
DRAWN BY:	APPROX. SCALE:	FIGURE NO.
PB	NA	3
REVIEWED:	DATE:	PROJ. NO.
RH	11/19/2019	117-8598016



Pre-Renovation Asbestos Inspection
Sample Collection Locations
Montana State University
Leon Johnson Hall
Fire Suppression System Project
Bozeman, Montana

TETRA TECH

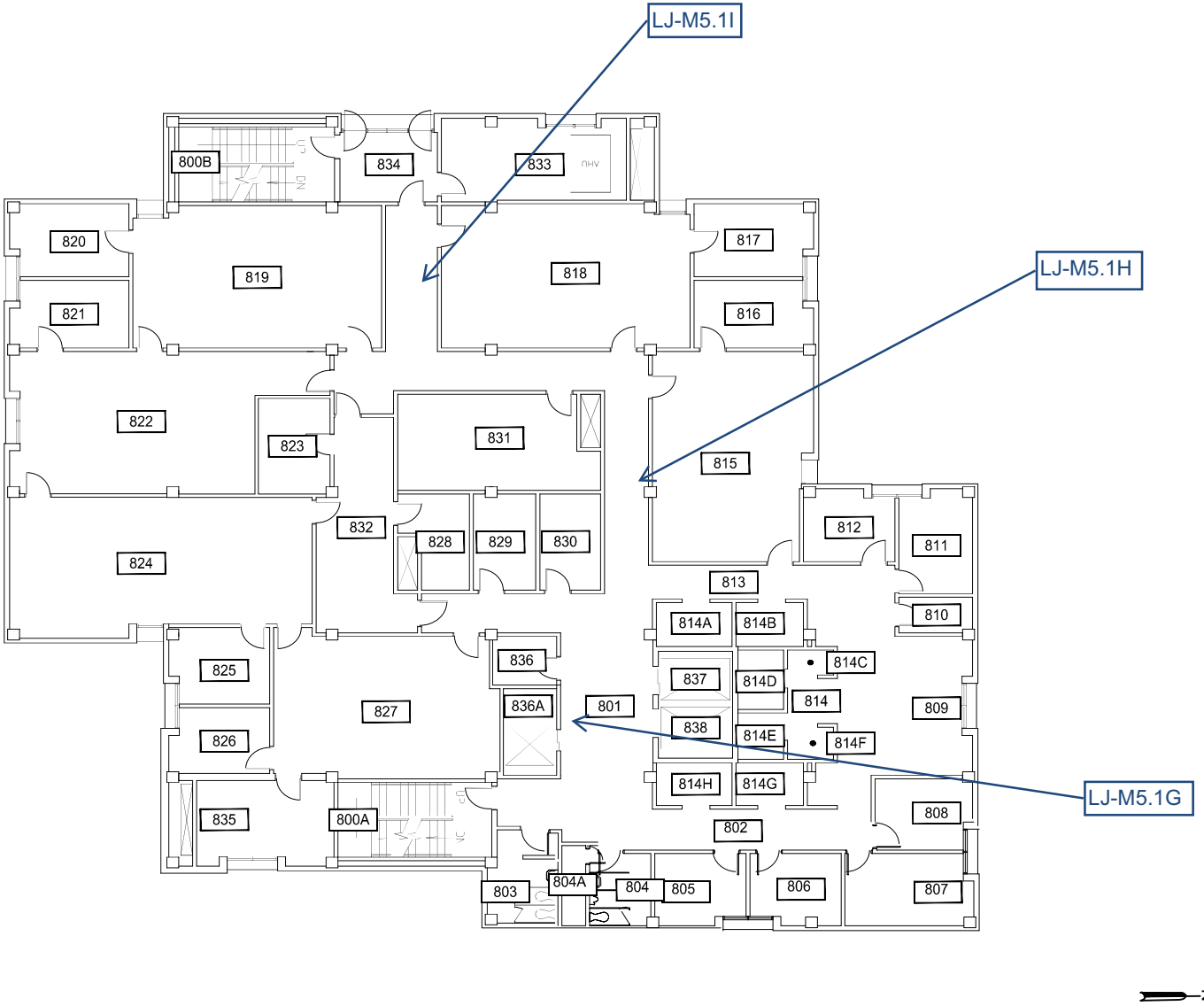
DRAWN BY:	APPROX. SCALE:	FIGURE NO.
PB	NA	4
REVIEWED:	DATE:	PROJ. NO.
RH	11/19/2019	117-8598016



Pre-Renovation Asbestos Inspection
Sample Collection Locations
Montana State University
Leon Johnson Hall
Fire Suppression System Project
Bozeman, Montana

TETRA TECH

DRAWN BY:	APPROX. SCALE:	FIGURE NO.
PB	NA	5
REVIEWED:	DATE:	PROJ. NO.
RH	11/19/2019	117-8598016



Pre-Renovation Asbestos Inspection
Sample Collection Locations
Montana State University
Leon Johnson Hall
Fire Suppression System Project
Bozeman, Montana

TETRA TECH

DRAWN BY:	APPROX. SCALE:	FIGURE NO.
PB	NA	6
REVIEWED:	DATE:	PROJ. NO.
RH	11/19/2019	117-8598016

TETRA TECH

ATTACHMENT A

Inspector Accreditation Certifications

JAY L HARPER

has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

MTA-3388

Asbestos Inspector	04/08/2020
Project Contractor/Supervisor	03/15/2020

MT DEQ Asbestos Control Program

SHANE MATOLYAK

has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

MTA-5586

Asbestos Inspector	08/21/2020
Project Contractor/Supervisor	08/09/2020

MT DEQ Asbestos Control Program

TETRA TECH

ATTACHMENT B

Asbestos Laboratory Analytical Report of
Newly Identified Suspect ACM

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
1929 Old Denton Road
Carrollton, TX 75006
Phone 972-242-2754
Fax 972-242-2798

CA Labs, L.L.C.
12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: MSU Leon Johnson Hall
Reference #: CAL19107151RL Date: 10/24/2019

Analysis and Method

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". **In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.**

Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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Overview of Project Sample Material Containing Asbestos

Customer Project: MSU Leon Johnson Hall **CA Labs Project #:** CAL19107151RL

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
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Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate
gypsum - gypsum
bi - binder
or - organic
ma - matrix
mi - mica
ve - vermiculite
ot - other
pe - perlite
qu - quartz
fg - fiberglass
mw - mineral wool
wo - wollastinite
ta - talc
sy - synthetic
ce - cellulose
br - brucite
ka - kaolin (clay)
pa - palygorskite (clay)

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

Phone # 406-248-9161
Fax # 406-248-9282

Customer Project:
MSU Leon Johnson Hall
Turnaround Time:
5 Days

CA Labs Project #:
CAL19107151RL

Date: 10/24/2019
Samples Received: 10/18/19 10:30am
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
LJ-M5.1A		*M5.1 A-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1 A-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1B		*M5.1 B-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1 B-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1C		*M5.1 C-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1 C-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1D		*M5.1 D-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). *All samples received in good condition unless noted.*
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bi - binder	ot -other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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9. < 1% Result point counted positive
10. TEM analysis suggested

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CAL19107151RL

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Date Of Sampling: None Given
Purchase Order #:

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		M5.1 D-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1E		*M5.1 E-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1 E-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1F		*M5.1F-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1F-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1G		*M5.1 G-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1 G-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

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or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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Turnaround Time:
5 Days

CA Labs Project #:
CAL19107151RL

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Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
LJ-M5.1H		*M5.1 H-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1 H-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.1I		*M5.1I-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.1I-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 38% ce	22% qu,ca,pe
LJ-M5.2A		*M5.2 A-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.2 A-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 39% ce	21% qu,ca,pe
LJ-M5.2B		*M5.2 B-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

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Date Of Sampling: None Given
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		M5.2 B-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 39% ce	21% qu,ca,pe
LJ-M5.2C		*M5.2 C-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.2 C-2	*tan ceiling tile*	*y*	***None Detected***	40% fg 39% ce	21% qu,ca,pe
LJ-M5.3A		*M5.3 A-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.3 A-2	*tan ceiling tile*	*y*	***None Detected***	41% fg 40% ce	19% qu,ca,pe
LJ-M5.3B		*M5.3 B-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.3 B-2	*tan ceiling tile*	*y*	***None Detected***	41% fg 40% ce	19% qu,ca,pe

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

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LJ-M5.3C		*M5.3 C-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.3 C-2	*tan ceiling tile*	*y*	***None Detected***	41% fg 40% ce	19% qu,ca,pe
LJ-M5.4A		*M5.4 A-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.4 A-2	*tan ceiling tile*	*y*	***None Detected***	74% fg	26% qu,ca
LJ-M5.4B		*M5.4 B-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.4 B-2	*tan ceiling tile*	*y*	***None Detected***	74% fg	26% qu,ca
LJ-M5.4C		*M5.4 C-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi

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AIHA LAP, LLC Laboratory #102929

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		M5.4 C-2	*tan ceiling tile*	*y*	***None Detected***	74% fg	26% qu,ca
LJ-M5.5A		*M5.5 A-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.5 A-2	*tan ceiling tile*	*y*	***None Detected***	41% fg 41% ce	18% qu,ca,pe
LJ-M5.5B		*M5.5 B-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.5 B-2	*tan ceiling tile*	*y*	***None Detected***	41% fg 41% ce	18% qu,ca,pe
LJ-M5.5C		*M5.5 C-1*	***Ceiling panel**/ white surfacing*	*y*	***None Detected***		100% qu,bi
		M5.5 C-2	*tan ceiling tile*	*y*	***None Detected***	41% fg 41% ce	18% qu,ca,pe

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

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CAL19107151RL

Date: 10/24/2019
Samples Received: 10/18/19 10:30am
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
LJ-S1.1A		*S1.1A-1*	***Plaster**/ white plaster*	*y*	***None Detected***		100% qu,ca
LJ-S1.1B		*S1.1B-1*	***Plaster**/ white plaster*	*y*	***None Detected***		100% qu,ca
LJ-S1.1C		*S1.1C-1*	***Plaster**/ white plaster*	*y*	***None Detected***		100% qu,ca
LJ-S1.1D		*S1.1D-1*	***Plaster**/ white plaster*	*y*	***None Detected***		100% qu,ca
LJ-S1.1E		*S1.1E-1*	***Plaster**/ white plaster*	*y*	***None Detected***		100% qu,ca
LJ-M33.1A		*M33.1A-1*	***Fiber board**/ gray insulation*	*y*	***None Detected***	100% ce	
LJ-M33.1B		*M33.1B-1*	***Fiber board**/ gray insulation*	*y*	***None Detected***	100% ce	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). *All samples received in good condition unless noted.*
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
1929 Old Denton Road
Carrollton, TX 75006
Phone 972-242-2754
Fax 972-242-2798

CA Labs, L.L.C.
12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

Phone # 406-248-9161
Fax # 406-248-9282

Customer Project:
MSU Leon Johnson Hall
Turnaround Time:
5 Days

CA Labs Project #:
CAL19107151RL

Date: 10/24/2019
Samples Received: 10/18/19 10:30am
Date Of Sampling: None Given
Purchase Order #:

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LJ-M33.1C		*M33.1 C-1*	***Fiber board**/ gray insulation*	*y*	***None Detected***	100% ce	
LJ-M18.1A		*M18.1 A-1*	***Concrete basement foundation**/ gray concrete*	*y*	***None Detected***		100% qu,ca
LJ-M18.1B		*M18.1 B-1*	***Concrete basement foundation**/ gray concrete*	*y*	***None Detected***		100% qu,ca
LJ-M18.1C		*M18.1 C-1*	***Concrete basement foundation**/ gray concrete*	*y*	***None Detected***		100% qu,ca
LJ-M22.1A		*M22.1 A-1*	***CMU block and mortar**/ gray cement/mortar*	*y*	***None Detected***		100% qu,ca
LJ-M22.1B		*M22.1 B-1*	***CMU block and mortar**/ gray cement/mortar*	*y*	***None Detected***		100% qu,ca
LJ-M22.1C		*M22.1 C-1*	***CMU block and mortar**/ gray cement/mortar*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). *All samples received in good condition unless noted.*
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gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
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7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19107151

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Shane Matolyak	**Phone / Email:**	cell – 406.581.3027 shane.matolyak@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Shane Matolyak	**Sampler Signature(s):**	

PROJECT INFORMATION

Client:	MSU	**Project Name:**	MSU Leon Johnson Hall
Project Location:	Bozeman	**Project Number:**	MSU Leon Johnson Hall

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☐ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☒ **5 Day** ☐ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Shane Matolyak]	10-17-19 1130	FEDEX	10:30AM 10-18-19	

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19107151

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
LJ-M5.1A		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1B		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1C		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1D		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1E		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1F		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1G		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1H		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.1I		2-foot x 4-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.2A		2-foot x 4-foot lay in ceiling panel (white with small pinholes and fissures)	

10:30AM
10-18-19

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CAL19107151

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
LJ-M5.2B		2-foot x 4-foot lay in ceiling panel (white with small pinholes and fissures)	
LJ-M5.2C		2-foot x 4-foot lay in ceiling panel (white with small pinholes and fissures)	
LJ-M5.3A		2-foot x 2-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.3B		2-foot x 2-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.3C		2-foot x 2-foot lay in ceiling panel (white with small pinholes)	
LJ-M5.4A		2-foot x 2-foot lay in ceiling panel (rough surface)	
LJ-M5.4B		2-foot x 2-foot lay in ceiling panel (rough surface)	
LJ-M5.4C		2-foot x 2-foot lay in ceiling panel (rough surface)	
LJ-M5.5A		2-foot x 2-foot lay in ceiling panel (pinholes and fissures)	
LJ-M5.5B		2-foot x 2-foot lay in ceiling panel (pinholes and fissures)	

10-18-19
10:30AM

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CAL19107151

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
LJ-M5.5C		2-foot x 2-foot lay in ceiling panel (pinholes and fissures)	
LJ-S1.1A		Plaster on auditorium ceiling	
LJ-S1.1B		Plaster on auditorium ceiling	
LJ-S1.1C		Plaster on auditorium ceiling	
LJ-S1.1D		Plaster on auditorium ceiling	
LJ-S1.1E		Plaster on auditorium ceiling	
LJ-M33.1A		Gray fiber board from above suspended ceiling (corridor 401)	
LJ-M33.1B		Gray fiber board from above suspended ceiling (corridor 401)	
LJ-M33.1C		Gray fiber board from above suspended ceiling (corridor 401)	
LJ-M18.1A		Concrete basement foundation	

10:30AM
10-18-19

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ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
LJ-M18.1B		Concrete basement foundation	
LJ-M18.1C		Concrete basement foundation	
LJ-M22.1A		CMU block and mortar	
LJ-M22.1B		CMU block and mortar	
LJ-M22.1C		CMU block and mortar	

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Texture finishes.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each texture finish indicated on same backing indicated for Work.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

GYPSUM BOARD, GENERAL

C. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C 1396/C 1396M.

1. Submit manufacturer and product data via submittal process.
2. Thickness: 1/2 inch.
3. Long Edges: Tapered

B. Gypsum Ceiling Board: ASTM C 1396/C 1396M.

1. Submit manufacturer and product data via submittal process.

2. Thickness: 1/2 inch.
3. Long Edges: Tapered.

2.3 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Skim Coat: For final coat of Level 3 finish, use high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

2.5 TEXTURE FINISHES

A. Primer: As recommended by textured finish manufacturer.

B. Non-Aggregate Finish: Premixed, vinyl texture finish for spray application.

1. Submit manufacturer and product data via submittal process.
2. Texture: **Knock-down, troweled finish.**

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS

A. Examine existing panels before installation. Reject panels that are wet, moisture damaged, and mold damaged. Repair gouges or other imperfections as required, such that these imperfections are not visible through the textured finish.

B. Comply with ASTM C 840.

C. Prefill open joints and damaged surface areas.

D. Apply joint tape over gypsum board joints if compromised or impacted from abatement work.

E. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 3: **Room 339 ceiling complete.**

a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

3.2 APPLYING TEXTURE FINISHES

A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.

B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

3.3 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 SCOPE

A. This Section includes surface preparation, painting, and finishing of all patched and repaired surfaces.

B. Paint exposed surfaces except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Owner will select from standard colors or finishes available.

1. Painting as required on patched work to match the surrounding area in color and sheen.
2. Painting of all exposed piping, fittings, hangers, conduit etc. in public areas as noted on drawings.

1.2 RELATED WORK

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable suppliers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with supplier's instructions. Take precautions to prevent fire by keeping containers sealed when not in use and by removing soiled and used rags and waste from premises at completion of each day's work.

1.4 SUBMITTALS

A. General: Submit the following according to Conditions of the Contract.

B. Product data for each paint system specified.

1. Provide the manufacturers' technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
2. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturers' catalog number and general classification.
3. Provide certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

C. Provide samples for initial color selection in the form of manufacturer's color charts.

1. After color selection, provide the Owner with color chips for surfaces to be coated.

D. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.

E. Field Samples: On wall surfaces and other interior components, duplicate finishes of prepared samples.

1. Final acceptance of colors will be from job-applied samples.

1.5 JOB CONDITIONS

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.

5. Thinning instructions.
6. Application instructions.
7. Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

C. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).

D. Apply solvent-thinned paints only when the temperatures of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).

E. Do not apply paint if humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point.

F. Interior Work: Maintain ventilation during painting operations and until materials have dried. Provide lighting during painting operations.

G. Apply paint only in dust free areas. Sand smooth and repaint surfaces containing dust particles in finish.

1.6 GUARANTEES

A. Guarantee painting work for two (2) years from the date of final acceptance. Remedy any defects in appearance and performance of any painting work and repair any damage which may result.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Available Manufactures: Subject to compliance with requirements, manufactures offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Benjamin Moore and Co. (Moore).
2. Pratt and Lambert (P & L).
3. The Sherwin-Williams Company (S-W).
4. Pittsburgh Paint

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

B. Colors: Provide colors and sheen of the finished paint systems to match existing surfaces where pipe is installed.

1. Room 339 Ceiling in Leon Johnson Hall shall be painted with Pittsburgh Paint, flat sheen, Delicate White Color (PPG1001-1) as per owners' direction.

2.3 PRIMERS

A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.

2.4 INTERIOR FINISH PAINT MATERIAL

A. Finish Paint: Contractor shall match color and sheen of existing surfaces. Contractor shall provide Owner with painted chips to verify match prior to painting surfaces.

PART 3 - EXECUTION

3.1 INSTALLATION

A. EXAMINATION

1. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.
   a. Do not begin to apply paint until unsatisfactory conditions have been corrected.
   b. Start of painting will be constructed as the Applicator's acceptance of surfaces and conditions within a particular area.

B. PREPARATION

1. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
2. Surfaces Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
3. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.
   a. Maintain containers used in mixing and applying paint in clean condition, free of foreign materials and residue.
   b. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
   c. Use only thinners approved by the paint manufacturer and only within recommended limits.

C. APPLICATION

1. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
   a. Paint colors and sheens are to match the surrounding areas.
   b. Provide finish coats that are compatible with primers used.
   c. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
   d. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
   e. The term exposed surfaces includes areas visible when permanent or built-in fixtures and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
3. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pre-treated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
   a. Allow sufficient time between successive coats to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb

pressure, and undercoat to lift or lose adhesion.

4. Minimum Coating Thickness: Apply materials no thinner than he manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

D. PROTECTION

1. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Owner.
2. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
   a. At completion of construction activities of other trades, touch up and restore damaged or defaces painted surfaces.

E. Paint surfaces same day as cleaned.

F. Mask to eliminate over spray into interior surfaces or spouting and other surfaces that are not to receive paint.

G. Remove protective coverings placed by other trades where necessary to execute the work and replace after final coat is dry.

H. Match Owner approved mock-ups for color, texture, pattern and coverage. Re-coat or remove and replace work which does not match.

3.2 APPLICATION

A. Completely cover primer with finish coat. Allow each coat to dry for 24 hours minimum before sanding or applying subsequent coats.

3.3 ADJUST AND CLEAN

A. At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. Remove spilled, splashed, and splattered paint from floors and finished surfaces. Remove paint without marring finish surface.

C. Replace or restore to original condition, work and property of others damaged as a result of painting work.

END OF SECTION

SECTION 13910 - FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section of the specification includes the furnishing, installation, connection and testing of the Edwards United Technologies controlled, digital, addressable, intelligent emergency voice communication system with reporting to form a complete, operative and coordinated system. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, Fire Alarm Control Panel (FACP), auxiliary control devices, annunciators, local operating consoles, remote power boosters, amplifiers, digital alarm communications to central stations, conduit, device boxes, wiring as shown on the drawings and any and all other equipment necessary for a complete operational system, as shown on the drawings and indicated herein.

B. The fire alarm system shall comply with requirements of the 2010 edition of NFPA 72 for Local Protected Premises Signaling Systems and ECS. The system field wiring shall be supervised either electrically or by software-directed polling of field devices.

C. The Secondary Power Source of the fire alarm control panel will be capable of providing at least 24 hours of backup power with the ability to sustain 15 minutes in alarm at the end of the backup period.

D. The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994.

E. The FACP and peripheral devices shall be manufactured or supplied 100% by a single U.S. manufacturer (or division thereof).

F. The installing company shall employ NICET (minimum Level II Fire Alarm) technicians on site to guide the final check-out and to ensure the systems integrity.

G. The FACP shall meet requirements of UL ANSI 864 Ninth Edition.

1.2 SCOPE

A. The owner has standardized on EST3 fire alarm systems for ease of maintenance and service. No substitutions are allowed. All makes/models specified shall be strictly adhered to, unless a more current model is offered by the specified manufacturer.

B. Related work specified elsewhere:

Fire Sprinkler System Section 13910

C. An intelligent, microprocessor-controlled, fire alarm detection system shall be installed in accordance with the project specifications, the project drawings, and applicable codes and standards.

D. Basic Performance:

1. Initiation Device Circuits (IDC) shall be wired Class B as part of an addressable device connected by the SLC Circuit.
2. Notification Appliance Circuits (NAC) shall be wired Class B.
3. Signaling Line Circuit (SLC) shall be wired Class B.
4. All circuits shall be power-limited, per UL864 requirements.
5. A single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.
6. Alarm signals arriving at the main FACP shall not be lost following a primary power failure or outage of any kind until the alarm signal is processed and recorded.

E. Basic System Operation

1. When a fire alarm condition is detected and reported by one of the system's initiating devices, the following functions shall immediately occur:
   a. The system Alarm LED on the FACP shall flash.
   b. A local sounder with the control panel shall sound.
   c. A backlit 168-character LCD display on the FACP shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
   d. In response to a fire alarm condition, the system will process all control programming and activate all system outputs (alarm notification appliances and/or relays) associated with the point(s) in alarm as defined by the operational matrix provided on the drawings. Additionally, the system shall send events to a central alarm supervising station via the internal DACT interfaced with a cellular communicator (provided by owner).

1.3 REGULATORY AGENCIES

A. The term jurisdictional authority used in this section of the specification shall include, as applicable, but not be limited to the following:

1. State of Montana Building Codes Division.
2. Bozeman Fire Department.
3. MSU Department of Safety and Risk Management
4. Owner.

B. The design and installation of all systems of fire protection shall conform to all requirements of applicable codes and publications herein defined:

1. International Building Code (2012)
2. International Fire Code (2012)
3. NFPA#13 (2010)
4. NFPA#72 (2010)
5. NFPA#70 (2011)
6. All State and local ordinances
7. Underwriters' Laboratories
8. American Society of Testing Materials
9. American National Standards Institute
10. Occupational Safety and Health Administration

1.4 SUBMITTALS

A. General

1. Submittals will be prepared and submitted to the Authority Having Jurisdiction by engineer on behalf of owner for approval.
2. Work on the project shall not begin until submittals have been accepted by the Authority Having Jurisdiction.
3. All fees and permits specifically required for fire protection work, not obtained by others as specified elsewhere shall be applied for and paid for by this Contractor. Plans have been submitted for review and plan review fees have been paid by the Owner.

B. Shop Drawings, Product Data, and Calculations:

1. The contract drawings are engineered finalized shop drawings. Drawings, product data, and calculations have been prepared and submitted to the Authority Having Jurisdiction by the Engineer on the contractor's behalf. AHJ-approved drawings will be forwarded to the fire alarm contractor one approved. The contractor is not required to prepare or submit separate shop drawings, product data, or calculations.
2. The contractor shall maintain up-to-date red-line as-built drawings on site during the course of the installation. The Contractor shall submit red-line as-built drawings to the Engineer for review and

CAD incorporation prior to final testing.

3. Catalog/Product Information

C. Installer's Qualifications

1. Prior to construction, Submit the following items to the Engineer for approval:
   a. Fire Alarm Vendor State License.
   b. Fire Alarm Installing Technicians State Licenses.
   c. Fire Alarm Installing Technicians NICET II Certifications.

D. Software Modifications

1. Provide the services of a qualified technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed 4 hours.
2. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site. Modification of software shall not require power-down of the system or loss of system fire protection while modifications are being made.

1.5 JOB CONDITIONS

A. The Contractor shall investigate the structural, mechanical, electrical, and finished conditions affecting the routing, and shall arrange the equipment accordingly; furnishing required conduit, backboxes, fittings and accessories. Route conduit to avoid interference with structure, architectural features, duct work and drain piping.

B. The drawings indicate locations of alarm devices, notification appliances and approximate routing of conduit. Contractor is responsible for final locations and routing. Contractor shall review actual conditions on site. Contractor shall provide material and labor for any additional conduit, backboxes, fittings, etc. required for complete system installation at no additional cost.

1.6 RECORD DRAWINGS

A. One approved set of drawings shall be maintained on the job at all times.

B. One set of "As-Built" drawings shall be kept on the job at all times. "As-Built" drawings shall be kept current daily. "As-Built" drawings shall be available at all times to Engineer for review and use.

C. One reproducible set of "As-Built" drawings shall be provided to the Engineer upon completion of the work.

1.7 OPERATION AND MAINTENANCE MANUALS

A. Operation & Maintenance manuals be submitted to the owner. Contractor to submit Operation and Maintenance Manuals in accordance with Section 017823.

B. Following successful final acceptance testing of the system, the fire alarm contractor shall provide a letter of warranty for the system in electronic format for inclusion in O&M manuals.

C. Following successful final acceptance testing of the system, the fire alarm contractor shall provide completed NFPA 72 Inspection & Testing and Record of Completion forms. The Record of Completion shall be signed by the contractor and the AHJ. Final testing documentation will be included in O&M manuals.

D. Following successful final acceptance testing of the system, provide an electronic copy of the panel programming software including any necessary cables, keys, codes, and licenses along with the site-specific program database in electronic format for inclusion in O&M manuals.

1.8 TRAINING

A. Instruction shall be provided as required for operating the system. Hands-on on-site demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided to the owner.

B. Contractor shall obtain Owner's dated signature that all training has been accomplished and is acceptable to the Owner.

C. Contractor shall follow any additional requirements listed in Section 017900.

1.9 GUARANTEES AND WARRANTIES

A. All work performed, and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one-year period shall be included in the submittal bid.

B. Contractor shall follow any additional requirements as listed in MSU Division 1 specs.

PART 2 – PRODUCTS

2.1 EQUIPMENT AND MATERIAL, GENERAL

A. The owner has standardized on EST3 by Edwards United Technologies fire alarm systems for ease of maintenance and service. No substitutions are allowed. All makes/models specified shall be strictly adhered to, unless a more current model is offered by the specified manufacturer.

B. All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a fire protective signaling system, meeting the National Fire Alarm Code.

C. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.

D. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

2.2 GENERAL

A. The system is to utilize intelligent circuiting with addressable devices utilizing Class B (Style C, Style 4 and Style Y) circuits.

B. The contractor shall supply and install an addressable, electronically supervised microprocessor based multi-processing Fire Alarm System with Emergency Voice Communications. The system shall utilize a standard bus architecture for local input/output for data acquisition, distribution and control.

C. Communication with addressable devices: The system must provide communication with all initiating and control devices individually. All of these devices are to be individually annunciated at the control panel. Annunciation shall include the following conditions for each point:

1. Alarm
2. Trouble
3. Open

4. Short
5. Ground
6. Device Fail/or Incorrect Device

All addressable devices are to have the capability of being disabled or enabled individually.

D. Each addressable device must be uniquely identified by an address code. Address code shall be field programmable at the Fire Alarm Control Panel and shall not require any additional equipment or special knowledge.

2.3 FIRE ALARM CONTROL PANEL

A. The fire alarm control panel shall allow for loading or editing special instructions and operating sequences as required. The system is to be capable of on-site programming to accommodate facility expansion, building parameter changes, or changes as required by local codes. All software operations are to be stored in a non-volatile programmable memory within the fire alarm control panel. Loss of primary and secondary power shall not erase the instructions stored in memory.

1. The ability for selective input/output control functions based on ANDing, ORing, NOTing, timing and special coded operations is to also be incorporated in the resident software programming of the system.

B. Manufacturers: EST

C. General Requirements for Fire-Alarm Control Unit:

1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864.
   a. System software and programs shall be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining the information through failure of primary and secondary power supplies.
   b. Include a real-time clock for time annotation of events on the event recorder and printer.
   c. Provide communication between the FACP and remote circuit interface panels, annunciators, and displays.
   d. The FACP shall be listed for connection to a central-station signaling system service.
   e. Provide nonvolatile memory for system database, logic, and operating system and event history. The system shall require no manual input to initialize in the event of a complete power down condition. The FACP shall provide a minimum 500-event history log.

2. Addressable Initiation Device Circuits: The FACP shall indicate which communication zones have been silenced and shall provide selective silencing of alarm notification appliance by building communication zone.
3. A button strip shall be supplied with 6 groups of switches.
   a. Buttons are programmed by the Fire Alarm Contractor from the input of the owner. Buttons shall be used to control notification and auxiliary equipment during testing. Coordinate programming and control with owner.
4. An RS232 interface port shall be installed for programing, testing and reporting.
5. Addressable Control Circuits for Operation of Notification Appliances and Mechanical Equipment: The FACP shall be listed for releasing service.

D. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

1. Annunciator and Display: Liquid-crystal type, 8 line(s) of 168 characters, minimum .
2. Keypad: Arranged to permit entry and execution of programming, display, and control commands and to indicate control commands to be entered into the system for control of smoke-detector sensitivity and other parameters.

E. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits, installed in accordance with NFPA 72.

1. Serial Interfaces:
   a. One dedicated RS 485 port for central-station operation using contact ID - alarm, supervisory, trouble.
   b. One RS 485 port for remote annunciators, Ethernet module, or multi-interface module (printer port).

F. Notification-Appliance Circuit:

1. Audible appliances shall sound on floor of alarm, floor above and below in accordance with building evacuation strategy.
2. All audible & visual alarm appliances shall operate in synchronization.

G. Elevator Recall:

1. Elevator recall shall be initiated only by one of the following alarm-initiating devices:
   a. Elevator lobby detectors except the lobby detector on the designated floor.
   b. Smoke detector in elevator machine room.
   c. Detectors in elevator hoistway.
2. Elevator controller shall be programmed to move the cars to the alternate recall floor if lobby detectors located on the designated recall floors are activated.
3. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
4. Water-flow switch associated with the sprinkler in the elevator pit may have a delay to allow elevators to move to the designated floor

H. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke-barrier walls shall be connected to fire-alarm system.

I. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory.

J. Transmission to Supervising Station: Automatically transmit alarm, supervisory, and trouble signals the supervising station acceptable to the owner.

K. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory signals supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.

1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.

L. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.

1. Batteries: Sealed lead acid.

M. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

N. All site specific software and documentation shall be provided in Fire Alarm Document Box acceptable to the owner. Box location shall be shown on drawings.

2.4 REMOTE ANNUNCIATORS

A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.

1. Mounting: Flush cabinet, NEMA 250, Type 1.
2. Integrated Remote Voice Microphone for emergency voice alarm communication system messaging.

B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

2.5 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:

1. Comply with UL 268; operating at 24-V dc, nominal.
2. Detectors shall be four or two-wire type.
3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
5. Restoring: Dorm room based detectors shall be supervisory-latching style that require resting at the FACP. Non dorm room based detectors shall alarm at FACP and be required to be reset at the FACP.
6. Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.
7. Remote Control: Unless otherwise indicated, detectors shall be digital-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control unit.
   a. Multiple levels of detection sensitivity for each sensor.
   b. Sensitivity levels based on time of day.

B. Photoelectric Smoke Detectors: EST SIGA-PD

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
   a. Primary status.
   b. Device type.
   c. Present average value.
   d. Present sensitivity selected.
   e. Sensor range (normal, dirty, etc.).

C. Duct Smoke Detectors: Photoelectric type complying with UL 268A, EST-SIGA-SD .

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
   a. Primary status.
   b. Device type.
   c. Present average value.
   d. Present sensitivity selected.
   e. Sensor range (normal, dirty, etc.).
3. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with contractor supplied detector for smoke detection in HVAC system ducts.
4. Each sensor shall have multiple levels of detection sensitivity.

5. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
6. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.
7. Provide each duct based detector with a dedicated test switch located in accessible location in building interior.

2.6 HEAT DETECTORS

A. General Requirements for Heat Detectors: Comply with UL 521.

1. Temperature sensors shall test for and communicate the sensitivity range of the device.

B. Heat Detectors: EST SIGA-HFD

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
   a. Primary status.
   b. Device type.
   c. Present average value.
   d. Present sensitivity selected.
   e. Sensor range (normal, dirty, etc.).

2.7 MANUAL PULL STATIONS

A. Furnish and install addressable non-coded manual station(s). Stations shall be a dual action, type. The stations shall have S.P.N.O. alarm contacts. The station shall mount in a standard single gang box.

B. The station shall be constructed of red Lexan, with white raised letters reading "FIRE" and simple, concise instructions for activation of station by the general public.

C. When the station is activated, the handle shall lock in a protruding manner to provide visual identification. Reset of station shall require a special key that matches the panel access lock.

2.8 MODULES

A. Modules shall be used for monitoring of waterflow, valve tamper, sub panels, non-addressable detectors, and for control of evacuation indicating appliances and AHU systems.

1. An addressable interface module shall be provided for interfacing normally open direct contact devices to an addressable signal line circuit.
2. Modules will be capable of mounting in a standard 4 square and/or electric outlet box. Modules will include cover plates to allow surface or flush mounting. Modules will receive their 24V DC power from a separate two wire pair running from the fire alarm control panel where applicable.

B. This type of addressable device will provide double pole double throw relay switching: a circuit of alarm notification appliances to a power source; or activate a variety of controlled devices. The module will be programmable to a Style Y supervision version. In the Style Y version, the wiring will be supervised by an end-of-line device. In the Style Z version, the wiring will be looped back and connected to the module to allow continual operation of the controlled devices even if the wiring sustains a single break. Style Z addressable devices will be provided. These Modules will communicate the supervised wiring status (normal, trouble,) to the fire alarm control panel and will receive a command to transfer the relay from the fire alarm control panel.

C. Monitor Modules

1. For conventional 2-wire smoke detector and/or contact device monitoring with Class B, Style C (NFPA-72 initiating device circuit) wiring supervision.
   a. This type of addressable device module will provide power to, and monitor the status of, a

zone consisting of conventional 2-wire smoke detectors and/or N/O contact devices. The supervision of the initiating device circuit wiring will be Class B, Style B. These modules will communicate the zone's status (normal, alarm, trouble) to the control panel.

D. Control Modules

1. For alarm notification appliances, and other device control with Style Y wiring supervision.
   a. This type of addressable device will provide double pole double throw relay switching: a circuit of alarm notification appliances to a power source; or activate a variety of controlled devices. The module will be programmable to a Style Y supervision version. In the Style Y version, the wiring will be supervised by an end-of-line device. In the Style Z version, the wiring will be looped back and connected to the module to allow continual operation of the controlled devices even if the wiring sustains a single break. Style Z addressable devices will be provided. These Modules will communicate the supervised wiring status (normal, trouble,) to the fire alarm control panel and will receive a command to transfer the relay from the fire alarm control panel.
2. For non-supervised control.
   a. This type of addressable device will provide double pole double throw relay switching for loads up to 120VAC.

E. The modules shall be supervised and uniquely identified by the control panel. Device identification shall be transmitted to the control panel for processing according to the program instructions. Should the modules become non-operational, tampered with, or removed, a trouble signal, unique to the device, shall be transmitted to, and annunciated at, the control panel.

F. The modules shall be capable of being programmed for its "address" location on the addressable device signaling line circuit. The modules shall be compatible with addressable manual stations and addressable detectors on the same addressable circuit.

G. All devices will be supervised for trouble conditions. The system control panel will be capable of indicating the type of trouble condition (open, short, device missing/failed). Should a device fail, it will not hinder the operation of other system devices.

2.9 WATERFLOW SWITCHES

A. Waterflow switches shall be provided and installed by the fire sprinkler subcontractor.

2.10 SPRINKLER VALVE TAMPER SWITCHES

A. Sprinkler valve tamper switches shall be provided and installed by the fire sprinkler subcontractor.

2.11 ALARM DEVICES

A. Visual Flashing Lamps (Xenon Strobe)

1. Visual indicating appliances shall be comprised of a Xenon flashtube and be entirely solid state. These devices shall be capable of either ceiling or wall mounting. The lens shall be pyramidal in shape to allow better visibility. Visual units shall be of the standalone type or be incorporated as part of the audio/visual unit.

2. The lens color shall be clear, the housing color shall be factory finished white with “ALERT” wording.

3. The intensity shall be adjustable to 15, 30, 75 or 110 candela.

4. The flash rate shall comply with UL 1971.

5. Mounting height shall be 80” - 96" above floor or 6" below ceiling.

6. Maximum spacing shall be 100 feet. Maximum spacing in corridors shall be 50 feet.

B. Speakers

1. Alarm speakers shall operate at 70.7 volts and be provided with ¼, ½, 1 or 2 watt taps. Each speaker assembly shall be HI fidelity and produce 400-4000Hz frequency response. The alarm speakers shall be suitable for rear mounting.

2. The speaker shall produce a sound level 15 dbA above the ambient and 5 dbA above any maximum sound which may exist for 60 seconds or longer.

3. The housing color shall be factory finished white with “ALERT” wording.

4. Mounting height shall be a maximum 90" above floor or 6" below ceiling.

5. The speaker may be combined with a visual unit. Where combined, follow visual unit mounting requirements.

C. Bells

1. Bells shall be polarized and shall be operated by 24VDC. Each bell assembly shall include separate wire leads for in/out wiring for each leg of the associated signal circuit. Bells shall be vibrating type with a minimum sound pressure level output of 90 Db at 10 feet. Bells shall be 10" diameter, finished in baked-on red enamel paint and be UL listed for fire alarm use outdoors. Bells shall be suitable for surface or semi-flush mounting.

2.12 REMOTES SIGNAL TRANSMISSION

A. Provide remote signal transmission devices for transmission of alarm and trouble signals over cellular communications via integral 3-MODCOM DACT.

B. Coordinate signal requirements with owner's security/fire alarm vendor.

2.13 FIRE DOOR RELEASES

A. Furnish and install door holders where indicated on the contract drawings. Holders to have a brushed zinc or stainless-steel finish with a contact plate that has a shock absorbing nylon swivel ball which allows the plate to adjust to any door angle. Holders to be 120VAC. The door holder is to have a holding force of 25 lbs. The device is to hold the door open until signaled by the fire alarm panel.

2.14 REMOTE RELAYS

A. Furnish and install fire alarm remote relays. Relays to control devices such as fans, dampers, door releases, sprinkler valves, etc. Relays to have one each form "C" contact and one each form "A" contact, rated at 5A 24VDC or 115VAC resistive load.

2.15 END OF LINE DEVICES

A. Use end of line supervision devices for each Class B circuit. Locate these devices beyond the last circuit device in a separate box accessible and visible from floor level.

2.16 TELEPHONE DEVICES

A. Provide and install red remote telephone handsets housed within a thumb locked enclosure. Provide a red finish clearly mark the housing with "FIRE FIGHTERS TELEPHONE" in large letters for easy identification. Provide flush or surface mounting as shown on the plans.

B. Provide and install stainless steel telephone jack receptacles clearly identified with "FIRE FIGHTERS TELEPHONE" for use with portable fire fighter telephone handsets.

2.17 WIRE AND RACEWAYS

A. All wiring shall be installed in accordance with NFPA #70 (NEC).

B. Color code circuits for easy identification.

C. All wiring to speakers shall be twisted pair, from the wire manufacturer, sized to carry the speaker load in each zone. Observe polarity to ensure all speakers are in phase.

D. All exposed wiring shall be in raceway. The fire alarm contractor shall be responsible for the supply and installation of the raceway, wire, wire pulling, junction boxes, electrical boxes, and terminal cabinets in accordance with the manufacturer's recommendations. All junction boxes shall be painted red and labeled "Fire Alarm".

E. All wiring not installed in raceway shall be UL listed plenum rated

F. No wiring other than detector and alarm circuits shall be permitted in fire alarm raceway. No detector wiring shall be mixed with alarm circuit wiring or any other functional wiring without the use of approved shielded cable. Wiring splices are to be avoided to the extent possible, and if needed, they must be made only in junction boxes and shall be crimp connected. Transposing or changing color-coding of wires shall not be permitted.

2.18 PRODUCT DELIVERY AND HANDLING

A. Deliver materials to project site and store in one location as directed. Maintain storage area in a clean, neat condition.

B. Store new materials and those removed during demolition in such manner as to protect from damage. Immediately replace damaged materials with new undamaged materials without additional cost to the owner.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as required by the major equipment manufacturer.

B. All raceway, junction boxes, supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas as described in the fire alarm general notes on the drawings. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.

C. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted wherever feasible when located in finished areas and may be surface mounted when located in unfinished areas.

3.2 TESTING

A. Contractor shall follow any additional requirements other than below in accordance with Section 017900.

B. NICET level II technicians shall be provided to perform, technically supervise, troubleshoot, and otherwise participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72.

C. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

D. The following tests shall be performed at the preliminary and final test stages:

1. Ensure the off-site monitoring account is active and has been placed in TEST mode. Verify the system is communicating with the central station.
2. Verify activation/receipt of all manual pull stations.
3. Verify activation/receipt of all smoke and heat detectors.
4. Verify activation/receipt of all duct smoke detectors and proper operation of associated remote test switches.
5. Verify activation/receipt of all sprinkler valve tamper switches.
6. Verify activation/receipt of all sprinkler pressure switches.
7. Verify activation/receipt of all sprinkler water flow switches.
8. Verify proper operation of door hold-open devices.
9. Verify proper operation of any fire/smoke dampers.
10. Verify proper operation of air handling unit shutdowns.
11. Verify proper operation of all notification appliances.
12. Open initiating device circuits and verify that the trouble signal actuates.
13. Open and short signaling line circuits and verify that the trouble signal actuates.
14. Open and short notification appliance circuits and verify that trouble signal actuates.
15. Ground all circuits and verify response of trouble signals.
16. Verify all signals were properly received off-site by the central station.
17. All functions included on the operational matrix and devices installed shall be tested and verified.

3.3 FINAL INSPECTION

A. Request for final acceptance testing shall be accompanied by a signed letter from the contractor indicating the system has been 100% pretested and is ready for final inspection. Provide preliminary completed copies of the NFPA 72 Inspection & Testing form, the NFPA 72 Record of Completion, a device checklist including device address/appliance designators and technician initials next to each device indicating it was successfully pretested, and a hard copy printout of the system programming including device descriptors. At the final inspection, a minimum NICET Level II technician shall demonstrate that the system functions properly in every respect.

B. Upon completion of all other final acceptance testing activities, the contractor shall perform a complete 24-hour discharge of the system batteries followed by a 5-minute alarm period with AC power off. The disconnection/lock-out of AC power and alarm test shall be witnessed by the owner’s representative.

C. Following successful final acceptance testing, the contractor shall provide final copies of the NFPA 72 Inspection & Testing form, the NFPA 72 Record of Completion, a device checklist including device address/appliance designators and technician initials next to each device indicating it was successfully tested, and a hard copy printout of the system programming including device descriptors for inclusion in final operation and maintenance manuals.

3.4 CLOSE-OUT DOCUMENTATION

A. The contractor shall provide a letter of warranty for the period of one year from the date of final acceptance, red-line as-built drawings, completed final testing documentation (NFPA 72 Inspection & Testing form, NFPA 72 Record of completion, and initialed device list), and programming software and final site-specific database in electronic format for inclusion in the final operation and maintenance manual close-out package. Final operation and maintenance manuals will be compiled by the Engineer.

B. The Engineer will prepare the final as-built drawing and operation and maintenance manual close-out documentation based on information provided by the contractor.

END OF SECTION

SECTION 13910 - FIRE SPRINKLER SYSTEM

PART 1 - GENERAL

1.1 SCOPE

A. Furnish and install an automatic sprinkler system to protect current un-protected spaces of the MSU Leon Johnson Hall as indicated herein and as shown on the drawings. Connect system to a water supply of sufficient pressure to ensure full and sustained water discharge immediately from sprinkler heads when opened by fire at rated heat temperatures. Water supply shall conform to NFPA water supply requirements with considerations given to the reliability of the public water supply, taking into account probable minimum pressure conditions.

B. All portions of the systems shall be installed in accordance with the drawings, details, and specifications and as required by jurisdictional authorities and codes. The position is taken that the Owner is entitled to a project which meets or exceeds the minimum requirements of nationally recognized fire protection standards. All efforts and installations shall be directed toward this end. Where there is conflict between the contract drawings and/or specifications, and the requirements of the jurisdictional authorities or codes, the conflict shall be brought to the attention of the Engineer at least ten (10) days prior to bidding or be resolved by the Contractor at no cost to the Owner.

C. The intent of these specifications is to describe the complete systems to be installed, including minor details of work or materials not specifically mentioned or shown, but necessary for the successful operation and completion of the installation. Contractor to provide all minor details of work including material and labor for installation of additional piping, fittings, valves and sprinkler heads that may not be indicated on the drawings but necessary for complete system without any additional cost to the owner.

D. Work to be performed under this section shall include, but not be limited to the following:

1. Automatic fire sprinkler systems.
    a. Wet pipe flow switch system.
        1) Pipe and fittings.
        2) Hangers and supports.
        3) Earthquake bracing.
        4) Valves.
        5) Alarms.
        6) Flow and Tamper Switches.
        7) Specialties.

E. Furnish and install an automatic fire protection system of type or types required in the following areas:

1. Wet pipe flow switch sprinkler system – All interior areas of the building where indicated on drawings.

1.2 RELATED WORK

A. All work performed under this section of the specifications shall be subject to the requirements of both the General and Special Conditions.

B. Related work specified elsewhere:

Fire Alarm System	Section 13850

C. Examine the above referenced specification parts thoroughly before submitting a proposal for accomplishment of work in this section.

1.3 REGULATORY AGENCIES

A. The term jurisdictional authority used in this section of the specification shall include, as applicable, but not be limited to the following:

1. State of Montana Building Codes Division.
2. Bozeman Fire Department.
3. MSU Department of Safety and Risk Management
4. Owner.

B. The design and installation of all systems of fire protection shall conform to all requirements of applicable codes and publications herein defined:

1. International Building Code (2012)
2. International Fire Code (2012)
3. NFPA#13 (2010)
4. All State and local ordinances
5. Underwriters' Laboratories
6. American Society of Testing Materials
7. American National Standards Institute
8. Occupational Safety and Health Administration

1.4 SUBMITTALS

A. General

1. The successful Contractor shall provide submittal data as required under other portions of this specification. Submittals shall conform to the instructions set forth in the General and Special Conditions of these specifications entitled Shop Drawings and Submittals.
2. Work on the project shall not begin until submittals have been accepted by the Authority Having Jurisdiction
3. The Engineer will complete the fire sprinkler system working drawings and make all necessary submittal to the Authority having Jurisdiction for approval.
4. All fees and permits specifically required for fire protection work, not obtained by others as specified elsewhere shall be applied for and paid for by this Contractor. Plans have been submitted for review and plan review fees have been paid by the Owner.

B. Working Drawings

1. Working drawings (floor plans - detailed working drawings), showing dimensions, ducts, lights, or other items affecting the fire protection systems have been submitted to jurisdictional agencies for review and approval. After approval from jurisdictional agencies has been returned to the Engineer, they shall be provided to the Contractor.
2. Working drawings have been prepared in AutoCAD software.
3. It will be the Contractor's responsibility to check drawings for interferences with existing construction and to do shop fabrication from measurements taken at the job site.

C. Catalog/Product Information

1. Full catalog information will be submitted by the Engineer for approval for all materials intended for use on this project. The contractor shall provide a list of intended material to the Engineer for their use in preparing submittals to the Authority Having Jurisdiction.

D. Hydraulic Calculations

1. Hydraulic calculations have been submitted for approval by the Engineer. The contractor may be required by the Engineer to provide additional hydraulic calculations if material proposed for substitution from that indicated on the drawings adversely affects the hydraulic performance of the system.

E. Installer’s Qualifications

1. All systems of fire protection shall be installed by a licensed (for the location of installation) Fire Protection Contractor, fully experienced in fire protection installation as required and specified

herein.

2. All installers shall be competent and shall hold an endorsement by the State of Montana. Prior to beginning work, current Contractor's and Installer's license and endorsements shall be on file with the Department of Commerce Professional and Occupational Licensing Bureau (301 South Park, P.O. Box 200513, Helena, MT 596200513).
3. Fire Protection Contractors may be required to provide in writing specific information as to successfully completed projects and references to show cause as to why they should be considered acceptable to the engineer.

F. Close-Out

1. Record Drawings required per paragraph 1.6 and Operation and Maintenance Manuals required per paragraph 1.7, shall be submitted for approval.

1.5 JOB CONDITIONS

A. The Contractor shall investigate the structural, mechanical, electrical, and finished conditions affecting the piping, and shall arrange the equipment accordingly; furnishing required fittings, offsets and accessories. Route fire protection piping to avoid interference with duct work and drain piping. In the event it becomes necessary to make field changes in pipe locations due to building construction, the Contractor shall consult with the Engineer before making any changes. Any such changes required shall be made without added cost.

B. The Contractor shall determine, and be responsible for, the proper locations and type of inserts for hangers, chases, sleeves, and other openings in the construction required for fire protection work and shall obtain this information well in advance of the construction progress to avoid delay of the work.

C. The drawings indicate locations of sprinkler heads and approximate routing of piping. Contractor is responsible for final locations and routing. Contractor shall review actual conditions on site and make pipe fabrication from review of existing field conditions. Contractor shall provide material and labor for any additional pipe, fittings, offsets, etc. required for complete system installation at no additional cost.

1.6 RECORD DRAWINGS

A. One approved set of drawings shall be maintained on the job at all times.

B. One set of "As-Built" drawings shall be kept on the job at all times. "As-Built" drawings shall be kept current daily. "As-Built" drawings shall be available at all times to Engineer for review and use.

C. One reproducible set of "As-Built" drawings shall be provided to the Engineer upon completion of the work.

1.7 OPERATION AND MAINTENANCE MANUALS

A. Contractor to submit Operation and Maintenance Manuals in accordance with Section 017823.

B. One (1) original copy of NFPA #25 (2010) shall be provided to the Owner.

C. Items indicated as being provided by Contractor will be submitted to the Engineer for inclusion in the Operation and Maintenance Manuals.

1.8 TRAINING

A. The Fire Protection Contractor shall instruct the Owner in the operation of the systems. Instruction shall continue until the Owner is fully satisfied that he understands the operation of his system.

B. Contractor shall obtain Owner's dated signature that all training has been accomplished and is acceptable to the Owner.

C. Contractor to submit draft copy of agenda and training documents to Owner for review at least two weeks prior to training date. Contractor to also supply a copy of the items listed in Section 017900 2.a.ii for attendees of the training.

D. Contractor shall follow any additional requirements listed in Section 017900.

1.9 GUARANTEES AND WARRANTIES

A. The Fire Protection Contractor shall guarantee to the Owner in writing, all equipment and workmanship for a period of one (1) year after the fire protection system has been placed in continuous service and has been accepted by all authorities having jurisdiction.

B. The Fire Protection Contractor shall not be held responsible for improper or negligent maintenance by the Owner after operating and maintenance indoctrination has been given the Owner.

C. The Fire Protection Contractor shall include in this contract the required inspections throughout the first year and the annual inspection (one year after system is placed in service) as required by NFPA #25.

D. Contractor shall follow any additional requirements as listed in Section 017400.

PART 2 – PRODUCTS

2.1 FIRE SPRINKLER SYSTEM EQUIPMENT

A. Where contract documents indicate specific model number or manufacturer; Contractor may substitute identical equipment approved for fire protection use. Similar equipment may be substituted if Contractor submits revised design, substituted materials, and revised calculations for approval.

2.2 AUTOMATIC SPRINKLERS

A. Install sprinklers from reviewed working drawings.

B. All sprinklers shall be of similar design and from a single manufacturer.

C. The operating temperature of sprinklers shall be as required by the specific location of installation.

D. Sprinklers shall conform to the following schedule:

1. Brass upright or pendent sprinklers may be used in all attics, mechanical, storage or other non-public spaces.
2. White recessed pendent sprinklers shall be used in all finished areas, offices, classrooms, library stack areas, etc. Where surface mounted obstructions will not allow for recessed installation, two-piece escutcheons **may** be used to extend sprinklers to a maximum deflector distance as allowed by NFPA or U.L. listing if approved by the Engineer.
3. White recessed sidewall sprinklers may be used in accordance with listing and jurisdictional requirements or and where indicated.
4. All sprinklers shall be quick-response glass bulb type.
5. White recessed dry sidewall or pendent heads shall be used in all areas subject to freezing when the heads are supplied from a heated area wet system, dry pipe system drops, etc.

E. Manufacturers

1. Tyco
2. Victaulic
3. Viking
4. Reliable

F. Pendent sprinklers installed in suspended acoustical tile ceilings shall be centered or quarter pointed in

the ceiling tile using U.L. listed flexible pipe drops.

2.3 PIPE AND FITTINGS

A. Interior piping for automatic sprinkler system shall conform to NFPA #13 and as follows.

B. System piping above ground shall be Schedule 40 black steel pipe with threaded or grooved fittings. Threaded thinwall pipe shall not be used.

C. Fittings for threaded and coupled pipe shall consist of cast iron or ductile threaded fittings joined with Teflon tape thread sealing compound or pipe joint compound. Pressure rating of fittings shall be as required for application.

D. System piping above ground with grooved fittings for sizes 2½” and larger shall be Schedule 10 black steel pipe.

E. Fittings for grooved end pipe shall consist of Victaulic Firelock Series or equal couplings and fittings in accordance with NFPA #13.

F. Fittings for plain end pipe shall not be used.

G. All drain and fire department connection piping and fittings down-stream of valves shall be galvanized. Malleable iron fittings are acceptable.

H. Listed flexible pipe drops shall be used for connection to pendent sprinklers installed in suspended acoustical tile ceilings. Flexible pipe drops shall contain stainless steel braided hose.

2.4 HANGERS AND SUPPORTS

A. Space pipe hangers in accord with the requirements of NFPA #13. Construct hangers, hanger rods, inserts and clamps as approved by the same.

B. Manufacturers:

1. Cooper B-Line
2. Afcon (Anvil)
3. Erico
4. ITW Buildex (Sammy)
5. Hilti

2.5 EARTHQUAKE PROTECTION

A. Furnish and install all necessary earthquake protection of the piping system as required by NFPA #13, the International Building Code, the authority having jurisdiction, and the Owner’s insurer. This includes seismic bracing, restraint of branch lines, flexible couplings and clearance around piping as required.

2.6 VALVES

A. Gate valves shall be approved indicating type as required by NFPA #13. Check valves shall be as required by NFPA #13. Test and drain valves shall be approved brass globe, angle, or ball valves. Locate sprinkler system isolation valves as shown on the drawings complete with a tamper alarm.

B. Interior Valves

1. Butterfly Valve

Make:	Tyco Fire Products
Sizes:	2½" to 4”
Ends:	Grooved

Model: BFV-N

2. Check Valve
   Make: Tyco Fire Products
   Sizes: 2½" to 4”
   Ends: Grooved
   Model: CV-1F
3. Drain Valve
   Make: United Brass
   Sizes: ½" to 2"
   Ends: Threaded
   Model: 125S
4. Test N Drain Valve
   Make: AGF
   Sizes: 1" to 2"
   Ends: Threaded
   Model: 1011 and 1000

C. Manufacturers:

1. Tyco
2. Nibco
3. Victaulic
4. Reliable
5. United Brass
6. AGF Manufacturing
7. Milwaukee

2.7 BACKFLOW PREVENTION DEVICES

A. Backflow prevention device is existing to remain.

2.8 FIRE DEPARTMENT CONNECTIONS

A. Furnish and install where shown on plans and approved by Authority Having Jurisdiction fire department connections; complete with clapper, Knox Caps, and chains.

B. Finish shall consist of polished brass.

C. Fire department connections shall be set 2'-6" above grade.

D. Fire department connections for sprinkler system shall be indexed "auto spkr-standpipe". The indexing shall be "cast in" by the manufacturer. Required indexing shall be permanently installed directly above the connection.

E. Fire department connection shall be complete with interior independent self-closing clappers, brass plugs, and chain and shall have threads to meet the local fire department requirements. Provide an automatic ball-drip on trapped section of piping as necessary.

F. Manufacturers:

1. Potter Roemer
2. Croker
3. Powhatan
4. Tyco

2.9 SPECIALTIES

A. Fire Seals

1. Where piping passes through walls, floors or other building construction which by code requires a fire rating, approved fire rated assemblies shall be used. Proposed protection shall be submitted for approval. Plans will indicate locations of required protection. All floors shall be fire sealed.

B. Escutcheon Plates

1. Where exposed piping passes through finish walls, white plastic wall plates shall be installed. Split wall plates or escutcheons shall be installed to fit snugly around piping and shall be secured to the wall surface with glue or sealant to prevent it from moving away from the wall.
2. Solid galvanized wall plates shall be used at both sides of all exterior walls.

C. Valve Identification

1. All valves within the building shall have permanently marked identification signs provided in accordance with NFPA #13 standards. Signs shall be manufactured and not hand written. Signs shall be hung with galvanized or chrome chain.

D. Spare Head Supply

1. Furnish and install a supply of extra sprinklers of each type and degree link installed in the project, complete with mountable box. Mount box on wall next to sprinkler entry. Provide wrenches for each type of sprinkler installed in box.

E. Head Guards

1. Provide head guards on all sprinkler heads where indicated on the drawings or at any time the sprinkler deflector is less than 7'-0" AFF. Sprinkler head guards shall have a red finish and be listed with the sprinkler on which it is installed.

2.10 ELECTRICAL DEVICES

A. All electrical devices shall be coordinated with Fire Alarm (Section 13850) requirements for compatibility of voltages and manufacturer.

B. Flow Switch

1. Potter VSR-F
2. Potter VSR-SF

C. Tamper Switch

1. Potter RBVS
2. Potter OSYSU-2
3. Integral to UL listed butterfly valves.

PART 3 – EXECUTION

3.1 DESIGN CRITERIA

A. Sprinkler head arrangement is indicated on the drawings. The intent is for the Contractor to provide a complete sprinkler system as required. This Contractor shall be responsible for surveying the site, existing construction, and new construction and install the complete system as required.

B. Piping shall be laid out so as not to interfere with the installation of other piping, ductwork or light fixtures.

C. All piping shall be run concealed wherever possible. Where piping is run exposed, special notation on the drawings to that effect will be evident and conspicuous on the drawings. Any piping determined to be a problem shall be relocated at no additional cost.

D. System piping has been hydraulically calculated including in accordance with NFPA #13 to the point of connection verified for flow characteristics.

E. The preparation of all working drawings and hydraulic calculations have been accomplished and stamped by the Engineer.

3.2 INSTALLATION

A. Where details of installation are not given, the installation shall be made using manufacturer's recommended practices or at the direction of the Engineer.

B. The contractor shall be responsible for providing all labor and material for a complete system in accordance with these specifications and applicable standards and Codes. Contractor shall provide all material and labor as necessary for any changes that may be necessary from the working system drawings provided by the Engineer due to field conditions and coordination with other contractors. All necessary changes shall be made by the Contractor at no additional cost to the Owner.

C. Contractor shall complete the fire protection systems ready for operation, in all respects, as soon as possible. When system is complete and ready for continuous operation, activate the system for its intended use. After system has been activated for continuous use, water charges will be paid by the Owner.

D. This Contractor shall remove from the building, all rubbish and unused materials due to or connected with this installation.

E. The surface of all exposed piping shall be cleaned and left ready for painting. All stickers or pipe labels shall be removed from all piping.

3.3 TESTING

A. All testing shall be accomplished in accord with NFPA standards and requirements.

B. This Contractor shall call for inspection and complete Contractor’s Material and Test Certificates signed by the authority having jurisdiction.

C. The entire sprinkler system shall be hydrostatically tested at not less than 200 psig pressure for a period of not less than two (2) hours with no pressure drop in the system.

D. All testing shall be witnessed by a representative of the Engineer or Owner.

E. Where jurisdictional authority's standards are more stringent than the above test, they shall prevail.

F. Furnish copies of Aboveground Test Certificate with close-out documentation.

END OF SECTION