Specifications For:

NAIC Off-Site Sewer Extension
Montana State University
A/E # 2014-02-07

March, 2016

Prepared For:

Montana State University
Bozeman, MT
406.994.4134

Prepared By:

DOWL
2090 Stadium Drive
Bozeman, MT 59715

DOWL Project #4522.11147.01
Approved by:

Bid Set
# TABLE OF CONTENTS

## DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

**INVITATION TO BID**
- FRONT PAGE HIGHLIGHTS
- INSTRUCTIONS TO BIDDERS
- BID PROPOSAL FORM

**FORMS**
- **FORM 110** STANDARD FORM OF AGREEMENT BETWEEN CONTRACTOR AND OWNER
- **FORM 112** PERFORMANCE BOND
- **FORM 113** LABOR AND MATERIAL PAYMENT BOND

**MONTANA SUBSTITUTE W-9**
- **FORM 100** SCHEDULE OF AMOUNTS FOR PAYMENT
- **FORM 101** PERIODIC ESTIMATE FOR PARTIAL PAYMENT
- **FORM 102** ACKNOWLEDGEMENT OF SUBCONTRACTORS
- **FORM 103** CONSENT OF SURETY TO FINAL PAYMENT
- **FORM 104** CONTRACT CHANGE ORDER
- **FORM 106** CONTRACTOR'S AFFIDAVIT
- **FORM 107** CERTIFICATE OF SUBSTANTIAL COMPLETION
- **FORM 109** CONSTRUCTION CHANGE DIRECTIVE
- **FORM 111** REQUEST FOR INFORMATION
- **FORM 118** CERTIFICATE OF FINAL ACCEPTANCE

## GENERAL CONDITIONS

## WAGE RATES

## DIVISION 1 - GENERAL REQUIREMENTS

- **011100** SUMMARY OF WORK
- **011130** SPECIAL PROVISIONS
- **012500** SUBSTITUTION PROCEDURES
- **013233** PHOTOGRAPHIC DOCUMENTATION
- **013300** SUBMITTAL PROCEDURES
- **017700** CONTRACT CLOSEOUT

## DIVISION 2 – EXISTING CONDITIONS

- **023200** GEOTECHNICAL DATA

---

**TABLE OF CONTENTS 1**
DIVISION 31 – EARTHWORK

311000  SITE CLEARING
311500  TREE PROTECTION
312000  EARTH MOVING
312500  EROSION AND SEDIMENT CONTROL

DIVISION 32 – EXTERIOR IMPROVEMENTS

321216  ASPHALT PAVING
321313  CONCRETE PAVING

DIVISION 33 – UTILITIES

333000  SANITARY SEWERS

APPENDIX

GEOTECHNICAL INVESTIGATION REPORT
CITY OF BOZEMAN STORMWATER MANAGEMENT PERMIT

END OF TABLE OF CONTENTS
PROCUREMENT AND CONTRACTING REQUIREMENTS
INVITATION TO BID

Sealed bids will be received until the closing time of 2:00 p.m. on **APRIL 19, 2016**, and will be publicly opened and read aloud in the offices of the Architecture & Engineering Division, 1520 East Sixth Avenue, P.O. Box 200103, Helena MT 59620-0103, for: **NAIC OFF-SITE SEWER EXTENSION, MONTANA STATE UNIVERSITY, BOZEMAN, MONTANA, A/E #2014-02-07**.

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

**DOWL, INC.**
2090 STADIUM DR.
BOZEMAN MT 59715
406 586-8834    clittle@dowl.com

A refundable deposit of **$100.00** is required for each plan set.

**A PRE-BID WALK-THROUGH IS SCHEDULED FOR TUESDAY, APRIL 5, 2016, at 10 a.m. PARTICIPANTS SHOULD MEET at the MSU FACILITIES SERVICES MEETING QUONSET. ATTENDANCE IS STRONGLY RECOMMENDED.**

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.

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.

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. Persons using TDD may call the Montana Relay Service at 1-800-253-4091.

ARCHITECTURE & ENGINEERING DIVISION
DEPARTMENT OF ADMINISTRATION
STATE OF MONTANA
NOTICE

THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYING THE CITY OF BOZEMAN BUILDING INSPECTION DIVISION FOR BUILDING, ELECTRICAL, MECHANICAL AND PLUMBING PERMITS.

CONTACT: CITY OF BOZEMAN
BUILDING INSPECTION DIVISION
P O BOX 1230
BOZEMAN MT 59771-1230
(406) 582-2375
E-MAIL: permits@bozeman.net
TO:
Director, Department of Administration
Architecture & Engineering Division
1520 East Sixth Avenue
P.O. Box 200103
Helena, Montana 59620-0103

Gentlemen:

The undersigned, having familiarized himself with the Contract Documents, site, location, and conditions of the Work as prepared by DOWL, INC., 2090 STADIUM DRIVE, BOZEMAN MT 59715, 406 586-8834 or e-mail clitle@dowl.com; by submission of this Bid Proposal, hereby agrees to complete the Work for the total sum as follows:

BASE BID:

(Bid Price in ALPHA notation)

________________________________________ and ____/100 DOLLARS

$________________________________________ (Bid Price in NUMERIC notation)

This bidder acknowledges receipt of the following addenda:

ADDENDUM #: _____ Dated: ________________
ADDENDUM #: _____ Dated: ________________
ADDENDUM #: _____ Dated: ________________
Company Name: __________________________________________

Signature: ____________________________________________

Print Name: __________________________________________

Title: ________________________________________________

Business Address: ______________________________________

____________________________________________________

____________________________________________________

Phone #: _____________________________________________

Fax #: ________________________________________________

e-mail Address: _________________________________________

Construction Contractor
Registration #: ________________________________________
### 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.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REFERENCE</th>
<th>GENERAL CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevailing Wage Rates</td>
<td>Article 3.4.4</td>
<td>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.</td>
</tr>
<tr>
<td>Warranty</td>
<td>Article 3.5.2</td>
<td>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.</td>
</tr>
<tr>
<td>Schedule</td>
<td>Article 3.10</td>
<td>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.</td>
</tr>
<tr>
<td>Time Limit on Claims</td>
<td>Article 4.3.1.1</td>
<td>Claims by either party must be initiated within 21 calendar days after occurrence of the event giving rise to such claim.</td>
</tr>
<tr>
<td>Weather Delays</td>
<td>Article 4.3.5.2</td>
<td>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.</td>
</tr>
<tr>
<td>Waiver of Consequential Damages</td>
<td>Article 4.3.6</td>
<td>The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract.</td>
</tr>
<tr>
<td>Mediation &amp; Arbitration</td>
<td>Article 4.5 &amp; 4.6</td>
<td>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.</td>
</tr>
<tr>
<td>Changes</td>
<td>Article 7.1</td>
<td>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.</td>
</tr>
<tr>
<td>Change Order Allowable Costs</td>
<td>Article 7.2.2</td>
<td>As described with a 5% allowance for overhead and a 10% allowance for profit.</td>
</tr>
<tr>
<td>Time</td>
<td>Article 8.1.1</td>
<td>Time is of the essence in performance, coordination, and completion of the Work contemplated herein.</td>
</tr>
<tr>
<td>Liquidated Damages</td>
<td>Article 8.1.6</td>
<td>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.</td>
</tr>
<tr>
<td>Contract Duration/Milestones/Phases</td>
<td>Article 8.1.8</td>
<td>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.</td>
</tr>
<tr>
<td>Applications for Payment</td>
<td>Article 9.3.2</td>
<td>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.</td>
</tr>
<tr>
<td>Retainage</td>
<td>Article 9.3.7</td>
<td>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.</td>
</tr>
<tr>
<td>Safety &amp; Protection</td>
<td>Article 10</td>
<td>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.</td>
</tr>
<tr>
<td>Indemnification and Insurance Requirements</td>
<td>Article 11</td>
<td>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.</td>
</tr>
<tr>
<td>Performance &amp; Payment Bonds</td>
<td>Article 11.7</td>
<td>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 faithful performance of all persons performing labor and furnishing materials in connection therewith.</td>
</tr>
<tr>
<td>Payroll &amp; Basic Records</td>
<td>Article 13.8</td>
<td>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.</td>
</tr>
</tbody>
</table>
1. Table of Contents

Invitation to Bid
Front Page Highlights
Instructions to Bidders
Bid Proposal Form
Standard Form of Agreement between Contractor and Owner, Form 110
Performance Bond, Form 112
Labor and Material Payment Bond, Form 113
Montana Substitute W-9
Schedule of Amounts for Payment, 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
Certificate of Final Acceptance, Form 118
General Conditions
Wage Rates
Specifications
Drawings

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
Voice: (406) 652-1311 Fax: (406) 652-1391

**iSQFT PLAN ROOM at Selby's**
2595 ENTERPRISE AVENUE
BILLINGS, MT 59102
Voice: (800) 364-2059 Fax: (866) 570-8187

**BOZEMAN BUILDERS EXCHANGE**
1105 REEVES RD W STE 800
BOZEMAN MT 59718
Voice: (406) 586-7653 Fax: (406) 586-4062

**BUTTE BUILDERS EXCHANGE**
4801 HOPE RD
BUTTE MT 59701
Voice: (406) 782-5433 Fax: (406) 782-5433

**GREAT FALLS BUILDERS EXCHANGE**
325 SECOND ST S
GREAT FALLS MT 59401
Voice: (406) 453-2513 Fax: (406) 727-7548

**HELENA COPY CENTER AND PLANS EXCHANGE**
1530 CEDAR ST STE C
HELENA MT 59601
Voice: (406) 457-2679 Fax: (406) 457-0226

**NW MONTANA PLANS EXCHANGE**
2303 HWY 2 EAST
KALISPELL MT 59901
Voice: (406) 755-5888 Fax: (406) 755-5896

**MISSOULA PLANS EXCHANGE**
201 N RUSSELL ST (59801)
MISSOULA MT 59806
Voice: (406) 549-5002 Fax: (406) 721-2941
3. Borrowing of Documents

3.1. Contract Documents may be secured at the office of the Architect/Engineer:

DOWL, INC. Clint Little, PE e-mail: clittle@dowl.com
2090 STADIUM DR.
BOZEMAN MT  59715
406 586-8834

3.2. All borrowed Contract Documents shall be returned to the ARCHITECT/ENGINEER 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 direct the Architect/Engineer to retain the deposit 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:

SAM DES JARDINS  e-mail: sam.desjardins@montana.edu
MSU CAMPUS PLANNING DESIGN & CONSTRUCTION
P.O. BOX 172760
BOZEMAN MT 59717-2760
406 994-4483

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 substitution must be made to the Architect/Engineer at least ten (10) calendar 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 or 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 to the Architect/Engineer.

6.3. If the project is funded by any portion of federal funds, the following may apply: on certain 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.

6.3.1. If federal funds are included and require the “Certification,” no award may be made to a Contractor or any subcontractor that is federally debarred, suspended or proposed for debarment in accordance with Public Law 103-355, Section 2455 (31 USC 6101) and Executive Order 12689. The Contractor who is awarded this contract shall certify that neither the contractor, its principals, their subcontractors nor their principals: (1) are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts by any federal department or agency; (2) have within a 3-year period preceding any partially or wholly federally funded contract has been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) contract or subcontract; been in violation of federal or state antitrust statutes, or been convicted of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; or otherwise
Poll and civilly charged by a governmental entity (federal, state, or local) with
commission of any of the offenses enumerated in (2) above; and, (3) have within a 3-year
period preceding an award of any partially or wholly federally funded contract, had one or
more contracts terminated for cause or default by any federal or state agency.

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

Department of Administration
Architecture & Engineering Division
Metcalf Building, Room 33
1520 East Sixth Avenue
P.O. Box 200103
Helena MT 59620-0103

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

Name of Project: NAIC OFF-SITE SEWER EXTENSION
Location: MONTANA STATE UNIVERSITY
A/E Project Number: #2014-02-07
Name of Bidder: ________________________________
Acknowledge Addendum Number: __, __, __, __,

6.6. It is the bidder’s responsibility to deliver or ensure delivery of the bid proposal to the office
of the Architecture & Engineering Division. 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 on the reception desk in 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 Form, 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 of 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. 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. The Owner is not responsible for the performance of the facsimile 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. Changes in the listed subcontractors, if any, shall also be provided. Bid modifications must be verified by hard copy provided to the Owner within two (2) business days after the bid opening. Bid modifications shall be directed to fax phone (406) 444-3399. 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. Date and time as indicated at the top of the facsimile on either the bidder’s or the Owner’s facsimile machine will not be used in determining time of arrival of the modification.

6.13. In the event of a discrepancy on the bid proposal between the written (alpha) numbers and the numeric numbers, the lowest figure will prevail.

6.14. 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).

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 or registration number.
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.

8.3. The official time clock for receipt of bids and fax modifications is the Owner’s time and date stamp clock located on the reception desk in 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.

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. The 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 Department of Administration 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 federal form W-9 along with the Contract.

12. Performance, Labor and Material Payment Security

12.1. IF THE PROJECT COST IS LESS THAN $50,000, 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).

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, completed bond forms, federal form W-9, 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.
TO:
Director, Department of Administration
Architecture & Engineering Division
1520 East Sixth Avenue
P.O. Box 200103
Helena, Montana 59620-0103

Gentlemen:

The undersigned, having familiarized himself with the Contract Documents, site, location, and conditions of the Work as prepared by DOWL, INC., 2090 STADIUM DRIVE, BOZEMAN MT 59715, 406 586-8834 or e-mail clitle@dowl.com; by submission of this Bid Proposal, hereby agrees to complete the Work for the total sum as follows:

BASE BID:

(Bid Price in ALPHA notation)

____________________________________________________ and _____/100 DOLLARS

$________________________________________ (Bid Price in NUMERIC notation)

This bidder acknowledges receipt of the following addenda:

ADDENDUM #: _____  Dated: _________________
ADDENDUM #: _____  Dated: _________________
ADDENDUM #: _____  Dated: _________________
Company Name: ____________________________________________

Signature: ____________________________________________

Print Name: ____________________________________________

Title: ____________________________________________

Business Address: ____________________________________________

Phone #: ____________________________________________

Fax #: ____________________________________________

e-mail Address: ____________________________________________

Construction Contractor
Registration #: ____________________________________________
This CONTRACT is made as of:

BETWEEN:

[FIRM NAME]  
[ADDRESS]  
[CITY, STATE, ZIP]  
[phone, fax]

Hereinafter identified as the "CONTRACTOR" and the State of Montana, acting through its Director, Department of Administration, hereinafter identified as the "OWNER":

Department of Administration, State of Montana  
P.O. Box 200103, 1520 East Sixth Avenue  
Helena, MT  59620-0103

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:

NAIC OFF-SITE SEWER EXTENSION  
MONTANA STATE UNIVERSITY  
A/E PROJECT #2014-02-07

As prepared by:

DOWL, INC.  
2090 STADIUM DRIVE  
BOZEMAN MT  59715  
clitle@dowl.com  Clint Litle, PE  
406 586-8834

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:

NINETY (90) CONSECUTIVE CALENDAR DAYS.

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

FIVE HUNDRED AND 00/100 DOLLARS ($500.00) 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 ( ).

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 suitably 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” 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 First Judicial District in and for the County of Lewis and Clark, Montana. The Contract shall be interpreted and subject to the laws of the State of Montana.

EXECUTION OF THIS CONTRACT
This Contract is entered into as of the day and year first written above:

Contractor:

__________________________
Signature

__________________________
(print name)

__________________________
Title

Is this company incorporated? Yes _____ No_____

Owner:

DEPARTMENT OF ADMINISTRATION
STATE OF MONTANA

__________________________
THOMAS B. O’CONNELL, Honorary AIA of Montana Administrator, Architecture & Engineering Division for the DIRECTOR, DEPARTMENT OF ADMINISTRATION

__________________________
Date
PERFORMANCE BOND #

KNOW ALL PERSONS 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:

[numbers in alpha] DOLLARS ( )

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 the State of Montana, acting by and through its Director, Department of Administration 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 NAME]  
[AGENCY NAME]  
[A/E PROJECT #]

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: ______________________

Architecture & Engineering Div.
Department of Administration
State of Montana

Contractor: ______________________

(signature)

(print name)

(date)

Surety: ______________________

(print name)

(date)

By: ______________________

(Attorney-in-Fact, seal & signature)

(Agency)

(Street Address)

(Address)

(Phone/Fax)
LABOR & MATERIAL PAYMENT BOND # _____________

KNOW ALL PERSONS 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:

[Numbers in alpha] DOLLARS (___)

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 the State of Montana, acting by and through its Director, Department of Administration 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 NAME]  [AGENCY NAME]  [A/E PROJECT #]

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: ____________________________

Architecture & Engineering Div.
Department of Administration
State of Montana

Contractor:

______________________________
(signature)

______________________________
(print name)

______________________________
(date)

Surety:

______________________________
(print name)

______________________________
(date)

By:

______________________________
(Agency)

______________________________
(Street Address)

______________________________
(Address)

______________________________
(Phone/Fax)
Substitute W-9

Conducting business with:

MT Architecture & Engineering Div
1520 East Sixth Ave.
Helena, MT 59620-0103
Phone: 406-444-3104
Fax: 406-444-3399

State of Montana
Department of Administration
SW9 12/2009

Taxpayer Identification Number (TIN) Verification

Print or Type
Please see attachment or reverse for complete instructions.

Legal Name
(as entered with IRS) If Sole Proprietorship, enter your Last, First, MI SSS

Trade Name
If doing business as (DBA) or enter business name of Sole Proprietorship

Primary Address (for 1099 form)
PO Box or Number and Street, City, State, ZIP + 4

Remit Address (where payment should be mailed, if different from Primary Address) PO Box or Number and Street, City, State, ZIP + 4

Entity Designation (check only one type)
- Corporation
- S-Corp
- C-Corp
Do you provide medical or legal services?
- Yes
- No
- Individual
- Sole Proprietorship
- Partnership
- General
- Limited
- LLC (for federal tax purposes taxed as)
- Individual
- Partnership
- Corporation
- Estate/Trust
- Organization Exempt from Tax (under Section 501 (a)(b)(c)(d)(e))
- Government Entity
- Other
- Incorporated

Taxpayer Identification Number (TIN) (Provide Only One) (If sole proprietorship provide FEIN, if applicable)

Social Security Number
Federal Employer Identification No

Certification
Under penalties of perjury, I certify that:
1. The number shown on this form is my correct taxpayer identification number, AND
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding.
3. I am a U.S. person (including a US resident alien).

Printed Name
Printed Title
Telephone Number
Signature
Date

Optional Direct Deposit Information (used at agency discretion) (all fields required to receive electronic payments) (Must Include a Voided Check, No Direct Deposit Slips Accepted)

Your Bank Account Number
- Checking
- Savings
Name on Bank Account
Bank Routing No. (ABA)

THIS IS A:
- New Direct Deposit
- Change of Existing
- Additional Direct Deposit
- Email Change Only

Email Address (Please make this LEGIBLE)

If you provide bank information and an email address, we will send a message notifying you when an electronic payment is issued. We will NOT share your email address with anyone or use it for any other purpose than communicating information about your electronic payments to you. If you have questions about completing this form, please call the Warrant Writer Unit at 406-444-3092.
Instructions for Completing Taxpayer Identification Number Verification
(Substitute W-9)

Legal Name As entered with IRS

Individuals: Enter Last Name, First Name, MI
Sole Proprietorships: Enter Last Name, First Name, MI
LLC Single Owner: Enter LLC Business Name
All Others: Enter Legal Name of Business

Trade Name

Individuals: Leave Blank
Sole Proprietorships: Enter Business Name
LLC Single Owner: Enter LLC Business Name
All Others: Complete only if doing business as a D/B/A

Primary Address

Address where 1099 should be mailed.

Remit Address

Address where payment should be mailed. Complete only if different from primary address.

Entity Designation

Check ONE box which describes the type of business entity.

Taxpayer Identification Number

LIST ONLY ONE: Social Security Number OR Employer Identification Number. See “What Name and Number to Give the Requester” at right.

If you do not have a TIN, apply for one immediately. Individuals use federal form SS-05 which can be obtained from the Social Security Administration. Businesses and all other entities use federal form SS-04 which can be obtained from the Internal Revenue Service.

Certification

You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to furnish your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, or contributions you made to an IRA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not furnish a TIN to a payer. Certain penalties may also apply.

What Name and Number to Give the Requester

<table>
<thead>
<tr>
<th>For this type of account:</th>
<th>Give name and SSN of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Individual</td>
<td>The individual</td>
</tr>
<tr>
<td>2. Two or more individuals (joint account)</td>
<td>The actual owner of the account or, if combined funds, the first individual on the account 1</td>
</tr>
<tr>
<td>3. Custodian account of a minor (Uniform Gift to Minors Act)</td>
<td>The minor 2</td>
</tr>
<tr>
<td>4. a. The usual revocable savings trust (grantor is also trustee)</td>
<td>The grantor-trustee 1</td>
</tr>
<tr>
<td>4. b. So-called trust account that is not a legal or valid trust under state law</td>
<td>The actual owner 1</td>
</tr>
<tr>
<td>5. Sole proprietorship or Single-Owner LLC</td>
<td>The owner 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For this type of account:</th>
<th>Give name and EIN of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Sole Proprietorship or Single-Owner LLC</td>
<td>The owner 3</td>
</tr>
<tr>
<td>7. A valid trust, estate, or pension trust</td>
<td>Legal entity 4</td>
</tr>
<tr>
<td>8. Corporate or LLC electing corporate status on Form 8832</td>
<td>The corporation</td>
</tr>
<tr>
<td>9. Association, club, religious, charitable, educational, or other tax-exempt organization</td>
<td>The organization</td>
</tr>
<tr>
<td>10. Partnership or multi-member LLC</td>
<td>The partnership</td>
</tr>
<tr>
<td>11. A broker or registered nominee</td>
<td>The broker or nominee</td>
</tr>
<tr>
<td>12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district or prison) that receives agricultural program payments</td>
<td>The public entity</td>
</tr>
</tbody>
</table>

1 List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person’s number must be furnished.
2 Circle the minor’s name and furnish the minor’s SSN.
3 You must show your individual name, but you may also enter your business or “DBA” name. You may use either your SSN or EIN (if you have one).
4 List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

NOTE: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.
Taxpayer Identification Request

In order for the State of Montana to comply with the Internal Revenue Service regulations, this letter is to request that you complete the enclosed Substitute Form W-9. Failure to provide this information may result in delayed payments or backup withholding. This request is being made at the direction of the Montana Department of Administration, State Accounting Division, in order that the State may update its vendor file with the most current information.

Please return or FAX the Substitute Form W-9 even if you are exempt from backup withholding within ten (10) days of receipt. Please make sure that the form is complete and correct. Failure to respond in a timely manner may subject you to a 28% withholding on each payment, or require the State to withhold payment of outstanding invoices until this information is received per Internal Revenue Code 3406(a).

We are required to inform you that failure to provide the correct Taxpayer Identification Number (TIN) / Name combination may subject you to a $50 penalty assessed by the Internal Revenue Service under Section 6723 of the Internal Revenue Code.

Only the individual’s name to which the Social Security Number was assigned should be entered on the first line.

The name of a partnership, corporation, club, or other entity, must be entered on the first line exactly as it was registered with the IRS when the Employer Identification Number was assigned.

DO NOT submit your name with a Tax Identification Number that was not assigned to your name. For example, a doctor MUST NOT submit his or her name with the Tax Identification Number of a clinic he or she is associated with.

Thank you for your cooperation in providing us with this information.
# SCHEDULE OF AMOUNTS FOR CONTRACT PAYMENT

<table>
<thead>
<tr>
<th>DIV. NO.</th>
<th>DESCRIPTION</th>
<th>LABOR COSTS</th>
<th>MATERIAL COSTS</th>
<th>OTHER COSTS</th>
<th>TOTAL ITEM COST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)  
Reviewed by: (Architect/Engineer)  
Approved by: Architecture & Engineering Division

(Company/Contractor)  
(Architect/Engineer)  
Architecture & Engineering Division

(Name)  
(Name)  
(Name)  
(Date)  
(Date)  
(Date)
PERIODIC ESTIMATE FOR PARTIAL PAYMENT

Project Name:  
Location:  
Contractor:  
Address:  
Phone/Fax:  

RETAINAGE ADJUSTMENT

1. Total Retainage to Date:  
2. Less Securities Deposited:  
3. Retainage Withheld (1 - 2)  

<table>
<thead>
<tr>
<th>No.</th>
<th>Date Approved</th>
<th>Additions</th>
<th>Deductions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTALS:</th>
<th>NET TOTAL:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CONTRACT AMOUNT STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Original Contract Amount:</td>
</tr>
<tr>
<td>2. Net +/- by Change Order:</td>
</tr>
<tr>
<td>3. Contract Amount to Date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONTRACT STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Work in Place (from next page):</td>
</tr>
<tr>
<td>2. Total Work &amp; Stored Material:</td>
</tr>
<tr>
<td>3. Retainage Withheld:</td>
</tr>
<tr>
<td>4. Total Earned Less Retainage:</td>
</tr>
<tr>
<td>5. Less Previous Payments (+ 1 % Tax):</td>
</tr>
<tr>
<td>6. Amount Due This Payment:</td>
</tr>
<tr>
<td>7. Less 1% State Contractor’s Tax:</td>
</tr>
<tr>
<td>8. Payment Due Contractor:</td>
</tr>
</tbody>
</table>

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:  
(Company/Contractor)  
(Name)  
(Date)

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

Approved by:  
Montana Dept of Administration,  
Architecture and Engineering Division  
(Name)  
(Date)

FOR OWNER’S USE: Davis-Bacon certified payroll on file (for federally funded projects only where D-B applies)? Initially of PM/CM:  
(Date)

S:\Share\Boilerplate\Form101_Periodic_Estimate_for_Partial_Payment.docm  
Last form revision (07-01-2011)
## WORK IN PLACE / STORED MATERIALS

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION OF WORK</th>
<th>SCHEDULED VALUE</th>
<th>WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)</th>
<th>THIS PERIOD</th>
<th>MATERIALS PRESENTLY STORED (NOT IN D OR E)</th>
<th>TOTAL COMPLETED AND STORED TO DATE (D + E + F)</th>
<th>% (G/C)</th>
<th>BALANCE TO FINISH (C – G)</th>
<th>RETAINAGE</th>
</tr>
</thead>
</table>

**PAGE TOTALS:**

**GRAND TOTALS:**

Attach additional sheets as needed. Provide Grand Total on the last sheet only.
STATE OF MONTANA
DEPARTMENT OF ADMINISTRATION
ARCHITECTURE AND ENGINEERING DIVISION
1520 East Sixth Avenue • P.O. Box 200103 • Helena MT 59620-0103
Phone: 406 444-3104 • Fax: 406 444-3399

ACKNOWLEDGMENT OF SUBCONTRACTORS

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>A/E #:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Date:</td>
</tr>
<tr>
<td>Contractor:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
</tbody>
</table>

TO: DEPARTMENT OF ADMINISTRATION
ARCHITECTURE AND ENGINEERING DIVISION
1520 EAST SIXTH AVENUE, RM. 33 METCALF BLDG.
P.O. BOX 200103
HELENA MT 59620-0103

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.

<table>
<thead>
<tr>
<th>NAME AND ADDRESS OF SUBCONTRACTORS</th>
<th>REGISTRATION NO.</th>
<th>TYPE OF WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S:\Share\Boilerplate\Form102_Acknowledgment_of_Subcontractors.docx
Last form revision (12-01-2006)
Submitted by: 
(Company/Contractor) (Name) (Date)

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

Acknowledged by: Architecture & Engineering Div. Project Manager
(Name) (Date)
CONSENT OF SURETY COMPANY TO FINAL PAYMENT

Project: __________________________________________
Location: _________________________________________
A/E#: ___________________________________________

TO: DEPARTMENT OF ADMINISTRATION
ARCHITECTURE AND ENGINEERING DIVISION
1520 EAST SIXTH AVENUE, P.O. BOX 200103
HELENA MT 59620-0103

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 the Montana Department of Administration, 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

________________________________________________________________________
Attest:
(Seal)

Title
CONTRACT CHANGE ORDER

The Contractor is hereby directed to make the following changes in the Contract:

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION/UNIT BREAKDOWN/UNIT COSTS</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Indicate Critical Path Schedule impact for each Item)</td>
<td>(Indicate + or -)</td>
</tr>
</tbody>
</table>

- **SUBTOTAL FROM ATTACHED SHEETS (IF ANY)**
- **SUBTOTAL (Labor & Materials) =**
- **Overhead & Profit @**
- **TOTAL COST (This Change Order Only) =**

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)
- 4. This Change Order Total Amount
- 5. New Contract Amount (3+4)
- 6. Total Cost of All Change Orders to Date (2+4)
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION/UNIT BREAKDOWN/UNIT COSTS</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Indicate Critical Path Schedule impact for each Item)</td>
<td></td>
</tr>
</tbody>
</table>

A/E #: 
Change Order #: 

SUBTOTAL (Labor & Materials) this page only. Carry forward to first page. =
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: ___________________________ By: ___________________________ Date: __________

Recommended by Architect/Engineer: ___________________________ By: ___________________________ Date: __________

Reviewed by Agency: ___________________________ By: ___________________________ Date: __________

Surety Consent:

SURETY CONSENT IS REQUIRED IF THE TOTAL AMOUNT OF ALL CHANGE ORDERS (LINE 6) EXCEEDS 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: ___________________________ Date: __________

Surety:

__________________________________________________________

__________________________________________________________

__________________________________________________________

Recommended by: A&E Project Manager: ___________________________ Date: __________

Accepted by: Architecture & Engineering Division:

Department of Administration, State of Montana
CONTRACTOR’S AFFIDAVIT OF COMPLETION, PAYMENT OF DEBTS AND CLAIMS, AND RELEASE OF LIENS

Project Name: ______________________________
Location: ______________________________
A/E #: ______________________________

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, DEPARTMENT OF ADMINISTRATION, 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, materialmen, 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) _______________

Subscribed and sworn to me this _____ Day of _____, _____.

(Seal) 
NOTARY

Notary Public for the State of Montana
My Commission Expires:
CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name: ___________________________________________ A&E #: ______
Project Address: __________________________________________ Date: ______
Project Location: __________________________________________

Agency: __________________________________________
Address: __________________________________________
Contact Name: __________________________________________
Contact #: __________________________________________

To: MONTANA DEPARTMENT OF ADMINISTRATION
ARCHITECTURE AND ENGINEERING DIVISION
1529 E. SIXTH AVENUE, P.O. BOX 200103
HELENA MT 59620-0103

Architect/Engineer:________________________________________
Contractor:________________________________________
Contract Date:__________
Contract 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

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Square Footage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Construction Material (e.g. masonry, metal panel, wood, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Construction Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Sprinklers Installed (yes/no)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated Date of Occupancy (if different from date of Substantial)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Usage:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Comments:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 By 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 By Date

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at _____ (time) on ________________ (date).

State of Montana Department of Administration, Architecture and Engineering Division
Owner By 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):
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:**

The following is based on information provided by the Contractor:

- [ ] Lump Sum
- [ ] Unit Price
- [ ] Estimated Not To Exceed

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:**

The following is based on information provided by the Contractor:

- [ ] Lump Sum
- [ ] Unit Price
- [ ] Estimated Not To Exceed

---

**Attachments:** (insert listing of documents that support description)

---

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:**

The following is based on information provided by the Contractor:

- [ ] Lump Sum
- [ ] Unit Price
- [ ] Estimated Not To Exceed

---

**Attachments:** (insert listing of documents that support description)

---

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:**

The following is based on information provided by the Contractor:

- [ ] Lump Sum
- [ ] Unit Price
- [ ] Estimated Not To Exceed

---

**Attachments:** (insert listing of documents that support description)

---

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:**

The following is based on information provided by the Contractor:

- [ ] Lump Sum
- [ ] Unit Price
- [ ] Estimated Not To Exceed
REQUEST FOR INFORMATION

Project Name:  
Location:  
A/E #:  
RFI #:  
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:  

This RFI is for clarification only. The contractor shall notify 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
CERTIFICATE OF FINAL ACCEPTANCE

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>A&amp;E #:</th>
<th>Location:</th>
<th>Date:</th>
</tr>
</thead>
</table>

To: MONTANA DEPARTMENT OF ADMINISTRATION
ARCHITECTURE AND ENGINEERING DIVISION
1520 E. SIXTH AVENUE, P.O. BOX 200103
HELENA MT 59620-0103

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.

<table>
<thead>
<tr>
<th>Date of Substantial Completion:</th>
<th>Date of Final Acceptance:</th>
<th>Date of Warranty Expiration:</th>
</tr>
</thead>
</table>

Notes:

Architect/Engineer  

Contract  

State of Montana Department of Administration,  
Architecture and Engineering Division  

Owner  


date

STATE OF MONTANA  
DEPARTMENT OF ADMINISTRATION  
ARCHITECTURE AND ENGINEERING DIVISION  
1520 East Sixth Avenue • P.O. Box 200103 • Helena MT 59620-0103  
Phone: 406 444-3104 • Fax: 406 444-3399
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 Contractor hereunto 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.

3.2. 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 bare 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, which ever 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.

Page 10 of 53 2014-02-072014-02-07_General_Conditions
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 probably 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 with in 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 Contractor 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'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 & Clark 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 responsibly 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.

5.3. **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 Owner 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 Subparagraph 10.2.5.

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: **FIVE HUNDRED AND 00/100 DOLLARS ($500.00)**.

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 or within: **NINETY (90) consecutive calendar days** after the start date on the written NOTICE TO PROCEED.

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/content/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/content/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, religion, color, sex, national origin or age and shall comply with all Federal and State laws concerning fair labor standards and hiring practices. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, sex, national origin or age. 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.

15.2. 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, religion, color, sex, national origin or age.

[END OF GENERAL CONDITIONS]
MONTANA
PREVAILING WAGE RATES FOR HEAVY CONSTRUCTION SERVICES 2016

Effective: January 2, 2016

Steve Bullock, Governor
State of Montana

Pam Bucy, 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 that 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.

PAM BUCY
Commissioner
Department of Labor and Industry
State of Montana
**TABLE OF CONTENTS**

**MONTANA PREVAILING WAGE REQUIREMENTS:**

A. Date of Publication .................................................................................................................. 3
B. Definition of Heavy Construction .......................................................................................... 3
C. Definition of Public Works Contract ...................................................................................... 3
D. Prevailing Wage Schedule .................................................................................................... 3
E. Rates to Use for Projects ....................................................................................................... 3
F. Wage Rate Adjustments for Multiyear Contracts ................................................................. 3
G. Fringe Benefits ...................................................................................................................... 4
H. Dispatch City ........................................................................................................................ 4
I. Zone Pay ................................................................................................................................ 4
J. Computing Travel Benefits .................................................................................................. 4
K. Apprentices ........................................................................................................................... 4
L. Posting Notice of Prevailing Wages ...................................................................................... 5
M. Employment Preference ...................................................................................................... 5
N. Welder Rates ......................................................................................................................... 5
O. Foreman Rates ...................................................................................................................... 5

**WAGE RATES:**

**BOILERMAKERS** ................................................................................................................. 6
**BRICK, BLOCK, AND STONE MASONS** .......................................................... 6
**CARPENTERS** .................................................................................................................... 6
**CEMENT MASONS AND CONCRETE FINISHERS** ......................................................... 6

**CONSTRUCTION EQUIPMENT OPERATORS**
- OPERATORS GROUP 1 ........................................................................................................... 7
- OPERATORS GROUP 2 ........................................................................................................... 7
- OPERATORS GROUP 3 ........................................................................................................... 7
- OPERATORS GROUP 4 .......................................................................................................... 8
- OPERATORS GROUP 5 .......................................................................................................... 8
- OPERATORS GROUP 6 .......................................................................................................... 8
- OPERATORS GROUP 7 .......................................................................................................... 8

**CONSTRUCTION LABORERS**
- LABORERS GROUP 1 ........................................................................................................... 8
- LABORERS GROUP 2 ........................................................................................................... 9
- LABORERS GROUP 3 ........................................................................................................... 9
- LABORERS GROUP 4 .......................................................................................................... 9
- DIVER ................................................................................................................................... 10
- DIVER TENDER .................................................................................................................... 10
- ELECTRICIANS .................................................................................................................. 10
- HEATING AND AIR CONDITIONING ............................................................................... 10
- INSULATION WORKERS - MECHANICAL (HEAT AND FROST) ........................................ 11
- IRONWORKERS - STRUCTURAL STEEL AND REBAR PLACERS ................................ 11

**LINE CONSTRUCTION**
- EQUIPMENT OPERATOR .................................................................................................... 11
- GROUNDMAN ....................................................................................................................... 11
- LINEMAN ............................................................................................................................. 12
- MILLWRIGHTS ..................................................................................................................... 12
- PAINTERS ............................................................................................................................. 12
- PILE BUCKS ......................................................................................................................... 12
- PLUMBERS, PIPEFITTERS, AND STEAMFITTERS ............................................................. 12
- SHEET METAL WORKERS ................................................................................................. 13
- TEAMSTERS GROUP 1 (Pilot Car Drivers) ...................................................................... 13
- TEAMSTERS GROUP 2 (Truck Drivers) ............................................................................. 13
A. Date of Publication January, 2 2016

B. Definition of Heavy Construction
The Administrative Rules of Montana (ARM), 24.17.501(4) – (4)(a), states ‘’Heavy construction projects include, but are not limited to, those projects that are not properly classified as either ‘building construction’, or ‘highway construction.’”

Heavy construction projects include, but are not limited to, antenna towers, bridges (major bridges designed for commercial navigation), breakwaters, caissons (other than building or highway), canals, channels, channel cut-offs, chemical complexes or facilities (other than buildings), cofferdams, coke ovens, dams, demolition (not incidental to construction), dikes, docks, drainage projects, dredging projects, electrification projects (outdoor), fish hatcheries, flood control projects, industrial incinerators (other than building), irrigation projects, jetties, kilns, land drainage (not incidental to other construction), land leveling (not incidental to other construction), land reclamation, levees, locks and waterways, oil refineries (other than buildings), pipe lines, ponds, pumping stations (prefabricated drop-in units – not buildings), railroad construction, reservoirs, revetments, sewage collection and disposal lines, sewers (sanitary, storm, etc.), shoreline maintenance, ski tows, storage tanks, swimming pools (outdoor), subways (other than buildings), tunnels, unsheltered piers and wharves, viaducts (other than highway), water mains, waterway construction, water supply lines (not incidental to building), water and sewage treatment plants (other than buildings) and wells.”

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 Heavy Construction occupations and rates in the specific localities mentioned herein. These rates will remain in effect until superseded by a more current publication. Current prevailing wage rate schedules for Building Construction, Highway Construction and Nonconstruction Services occupations can be found on the internet at www.mtwagehourbopa.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. 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.”

I. 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 H above for a list of dispatch cities.

J. 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 H above for a list of dispatch cities.

K. 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.”

L. 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.
M. 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.”

N. Employment Preference
Sections 18-2-403 and 18-2-409, MCA require contractors to give preference to the employment of bona fide Montana residents in the performance of work on public works contracts.

O. Welder Rates
Welders receive the rate prescribed for the craft performing an operation to which welding is incidental.

P. 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

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30.00</td>
<td>$30.30</td>
</tr>
</tbody>
</table>

**Duties Include:** Bulk storage tanks and bolted steel tanks.

Construct, assemble, maintain, and repair stationary steam boilers and boiler house auxiliaries.

**Travel:**
- 0-120 mi. free zone
- >120 mi. federal mileage rate/mi. in effect when travel occurs.

**Special Provision:**
Travel is paid only at the beginning and end of the job.

**Per Diem:**
- 0-70 mi. free zone
- >70-120 mi. $55.00/day
- >120 mi. $70.00/day

### BRICK, BLOCK, AND STONE MASONs

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$31.07</td>
<td>$13.40</td>
</tr>
</tbody>
</table>

**Travel:**
- 0-20 mi. free zone
- >20-35 mi. $30.00/day
- >35-55 mi. $35.00/day
- >55 mi. $65.00/day

### CARPENTERS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$28.00</td>
<td>$11.86</td>
</tr>
</tbody>
</table>

**Zone Pay:**
- 0-30 mi. free zone
- >30-60 mi. base pay + $4.00/hr.
- >60 mi. base pay + $6.00/hr.

### CEMENT MASONs AND CONCRETE FINISHERS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$21.43</td>
<td>$9.41</td>
</tr>
</tbody>
</table>

**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:**
- 0-30 mi. free zone
- >30-60 mi. base pay + $2.95/hr.
- >60 mi. base pay + $4.75/hr.
CONSTRUCTION EQUIPMENT OPERATORS GROUP 1

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24.58</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

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:
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

CONSTRUCTION EQUIPMENT OPERATORS GROUP 2

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$25.07</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

This group includes but is not limited to:
Air Doctor; Backhoe\Excavator\Shovel, up to and incl. 3 cu. yds; Bit Grinder; Bituminous Paving Travel Plant; Boring Machine, Large; Broom, Self-Propelled; Concrete Travel Batch; 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; 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

Zone Pay:
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

CONSTRUCTION EQUIPMENT OPERATORS GROUP 3

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$26.90</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

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.

Zone Pay:
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.
CONSTRUCTION EQUIPMENT OPERATORS GROUP 4

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$27.90</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

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:
- 0-30 mi. free zone
- >30-60 mi. base pay + $3.50/hr.
- >60 mi. base pay + $5.50/hr.

CONSTRUCTION EQUIPMENT OPERATORS GROUP 5

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$28.90</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

This group includes but is not limited to:
- Cranes, 45 tons up to and incl. 74 tons

Zone Pay:
- 0-30 mi. free zone
- >30-60 mi. base pay + $3.50/hr.
- >60 mi. base pay + $5.50/hr.

CONSTRUCTION EQUIPMENT OPERATORS GROUP 6

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$29.90</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

This group includes but is not limited to:
- Cranes, 75 tons up to and incl. 149 tons
- Cranes, Whirley (All)

Zone Pay:
- 0-30 mi. free zone
- >30-60 mi. base pay + $3.50/hr.
- >60 mi. base pay + $5.50/hr.

CONSTRUCTION EQUIPMENT OPERATORS GROUP 7

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30.90</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

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:
- 0-30 mi. free zone
- >30-60 mi. base pay + $3.50/hr.
- >60 mi. base pay + $5.50/hr.

CONSTRUCTION LABORERS GROUP 1/FLAG PERSON FOR TRAFFIC CONTROL

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20.68</td>
<td>$8.04</td>
</tr>
</tbody>
</table>

Zone Pay:
- 0-30 mi. free zone
- >30-60 mi. base pay + $3.50/hr.
- >60 mi. base pay + $5.50/hr.
CONSTRUCTION LABORERS GROUP 2

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24.07</td>
<td>$8.04</td>
</tr>
</tbody>
</table>

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:
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

CONSTRUCTION LABORERS GROUP 3

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24.94</td>
<td>$8.04</td>
</tr>
</tbody>
</table>

This group includes but is not limited to:
Concrete Vibrator; Dumpman (Graderman); 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:
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

CONSTRUCTION LABORERS GROUP 4

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$25.60</td>
<td>$8.04</td>
</tr>
</tbody>
</table>

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:
0-30 mi. free zone
>30-60 mi. base pay + $3.50/hr.
>60 mi. base pay + $5.50/hr.

***Hod Carriers will receive the same amount of travel and/or subsistence pay as bricklayers when requested to travel.
### DIVER

<table>
<thead>
<tr>
<th></th>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-By</td>
<td>$36.72</td>
<td>$14.00</td>
</tr>
<tr>
<td>Diving</td>
<td>$73.44</td>
<td>$14.00</td>
</tr>
</tbody>
</table>

**Depth Pay (Surface Diving)**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20 ft.</td>
<td>free zone</td>
</tr>
<tr>
<td>&gt;20-100 ft.</td>
<td>$2.00 per ft.</td>
</tr>
<tr>
<td>&gt;100-150 ft.</td>
<td>$3.00 per ft.</td>
</tr>
<tr>
<td>&gt;150-220 ft.</td>
<td>$4.00 per ft.</td>
</tr>
<tr>
<td>&gt;220 ft.</td>
<td>$5.00 per ft.</td>
</tr>
</tbody>
</table>

Diving In Enclosures

<table>
<thead>
<tr>
<th>Depth</th>
<th>Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25 ft.</td>
<td>free zone</td>
</tr>
<tr>
<td>&gt;25-300 ft.</td>
<td>$1.00 per ft.</td>
</tr>
</tbody>
</table>

### DIVER TENDER

<table>
<thead>
<tr>
<th></th>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$35.02</td>
<td>$14.00</td>
</tr>
</tbody>
</table>

The tender shall receive 2 hours at the straight time pay rate per shift for dressing and/or undressing a Diver when work is done under hyperbaric conditions.

### ELECTRICIANS

<table>
<thead>
<tr>
<th></th>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$31.39</td>
<td>$12.76</td>
</tr>
</tbody>
</table>

### HEATING AND AIR CONDITIONING

<table>
<thead>
<tr>
<th></th>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$27.33</td>
<td>$15.39</td>
</tr>
</tbody>
</table>

**Duties Include:**

Testing and balancing, commissioning and retro-commissioning, of all air-handling equipment and duct work.

**Travel:**

<table>
<thead>
<tr>
<th>Mileage</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18 mi.</td>
<td>$0.25/mi. in employer vehicle</td>
</tr>
<tr>
<td>&gt;18-60 mi.</td>
<td>$0.65/mi. in employee vehicle</td>
</tr>
</tbody>
</table>

**Per Diem:**

$65.00/day

---

* Corrected 01/22/2016
### INSULATION WORKERS - MECHANICAL (HEAT AND FROST)

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$32.92</td>
<td>$18.47</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Distance</th>
<th>Travel Cost</th>
</tr>
</thead>
</table>
  | >60 mi.  | On jobs requiring an overnight stay  
  |          | $77.00/day plus $0.56/mi. (if transportation is not provided) plus $0.20/mi. (if in company vehicle). |

- **Travel:**
  - 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

### IRONWORKERS - STRUCTURAL STEEL AND REBAR PLACERS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$26.90</td>
<td>$20.99</td>
</tr>
</tbody>
</table>

**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:**
- 0-45 mi. free zone
- >45-60 mi. $30.00/day
- >60-100 mi. $55.00/day
- >100 mi. $75.00/day

### LINE CONSTRUCTION – EQUIPMENT OPERATORS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$31.82</td>
<td>$13.11</td>
</tr>
</tbody>
</table>

**Duties Include:**
All work on substations.

**Zone Pay:**
- 0-25 mi. $40.00/day
- >25 mi. $60.00/day

### LINE CONSTRUCTION – GROUNDMAN

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24.85</td>
<td>$12.38</td>
</tr>
</tbody>
</table>

**Duties Include:**
All work on substations.

**Zone Pay:**
- 0-25 mi. $40.00/day
- >25 mi. $60.00/day
### LINE CONSTRUCTION – LINEMAN

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
<th>Zone Pay:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$41.54</td>
<td>$14.20</td>
<td>0-25 mi. $40.00/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;25 mi. $60.00/day</td>
</tr>
</tbody>
</table>

**Duties Include:**
All work on substations

### MILLWRIGHTS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
<th>Zone Pay:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$31.00</td>
<td>$11.86</td>
<td>0-30 mi. free zone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;30-50 mi. base pay + $4.00/hr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;50 mi. base pay + $6.00/hr.</td>
</tr>
</tbody>
</table>

### PAINTERS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
<th>Travel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$24.25</td>
<td>$16.24</td>
<td>No free zone.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$0.60/mile.</td>
</tr>
</tbody>
</table>

**Per Diem:**
$80.00/day

### PILE BUCKS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
<th>Zone Pay:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$28.00</td>
<td>$11.86</td>
<td>0-30 mi. free zone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;30-50 mi. base pay + $4.00/hr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;50 mi. base pay + $6.00/hr.</td>
</tr>
</tbody>
</table>

**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.

### PLUMBERS, PIPEFITTERS, AND STEAMFITTERS

<table>
<thead>
<tr>
<th>Wage</th>
<th>Benefit</th>
<th>Travel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$33.66</td>
<td>$16.01</td>
<td>0-70 mi. free zone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;70 mi.</td>
</tr>
</tbody>
</table>

- $90.00/day if transportation is provided.
- $90.00/day + $0.55/mi. (for one trip, there and back) if transportation is not provided.
SHEET METAL WORKER

Wage Benefit
$27.33 $15.39

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. Metal roofing.

Travel:
0-50 mi. free zone
>50 mi.
  • $0.25/mi. in employer vehicle
  • $0.65/mi. in employee vehicle

Per Diem:
$65.00/day

TEAMSTERS GROUP 1 (Pilot Car Drivers)

Wage Benefit
$20.59 $9.16

Zone Pay:
0-25 mi. free zone
>25-50 mi. base pay + $2.95/hr.
>50 mi. base pay + $4.70/hr.

TEAMSTERS GROUP 2 (Truck Drivers)

Wage Benefit
$27.69 $9.16

This group includes but is not limited to:
Combination Truck and Concrete Mixer and Transit Mixer; Dry Batch Trucks; Distributor Driver; Dumpman; Dump Trucks and similar equipment; Dumpster; Flat Trucks; Lumber Carriers; Lowboys; Pickup; Powder Truck Driver; Power Boom; Serviceman; Service Truck/Fuel Truck/Tireperson; Truck Mechanic; Trucks with Power Equipment; Warehouseman, Partsman, Cardex and Warehouse Expeditor; Water Trucks.

Zone Pay:
0-30 mi. free zone
>30-60 mi. base pay + $2.95/hr.
>60 mi. base pay + $4.70/hr.

* Corrected 01/22/2016
GENERAL REQUIREMENTS
SECTION 01 11 00 – SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS:

The CONTRACTOR shall be responsible for the installation of new sanitary sewer system. The sanitary sewer system consists of approximately 2,085 linear feet of PVC sewer main with associated manholes and fittings and shall be in conformance with the Montana Public Works Standard Specifications, sixth edition (MPWSS), as amended by City of Bozeman Modifications to MPWSS, latest edition to the City of Bozeman's (COB) specification as shown on the construction drawings. The sewer main construction will include but is not limited to the traffic control, clearing, tree protection, erosion control, trench excavation, backfill, pipe bedding, manholes, connections and surface restoration.

1.02 CONTRACTOR USE OF PREMISES:

The CONTRACTOR shall confine his operations to the site of the proposed Work.

It shall be understood that the responsibility for protection and safekeeping of equipment and materials on or near the site will be entirely that of the CONTRACTOR and that no claim shall be made against the OWNER by reason of any act of an employee or trespasser. It shall be further understood that should any occasion arise necessitating access by the OWNER to the sites occupied by these stored materials and equipment, the CONTRACTOR owning or responsible for the stored materials or equipment shall immediately remove same. No materials or equipment may be placed upon the property of the OWNER until the OWNER has agreed to the location contemplated by the CONTRACTOR to be used for storage.

The CONTRACTOR shall be solely responsible for obtaining and shall pay all costs in connection with any additional work area, storage sites, and access to the site, or temporary right-of-way, which may be required for proper completion of the Work.

1.03 PROTECTION OF EXISTING UTILITIES:

Existing underground installations such as water mains, gas mains, sewers, telephone lines, power lines, and buried structures in the vicinity of the work to be done hereunder are indicated on the drawings only to the extent such information has been made available to or discovered by the ENGINEER in preparing the drawings. There is no guarantee as to the accuracy or completeness of such information, and all responsibility for the accuracy and completeness thereof is expressly disclaimed.

Utility service connections are generally shown on the Drawings, but the CONTRACTOR shall be solely responsible for locating all existing underground installations, including service connections, in advance of excavating or trenching, by contacting the owners thereof and prospecting. The CONTRACTOR shall use his own information and shall not rely solely upon information shown on the drawings concerning existing underground installations. The CONTRACTOR shall protect utilities during excavation and repair all damage to existing utilities or property to the satisfaction of the utility owner or property owner at his own expense.

If any existing underground utility or facility not shown on the drawings is located so that it interferes with the work in either alignment or grade and has to be moved or otherwise modified, such work shall be done by the CONTRACTOR, and adjustment in payment will be made according to the GENERAL CONDITIONS. Except as stated above, any delay, additional work or extra cost to the CONTRACTOR caused by existing underground installation shall not constitute a claim for extra work, additional payment, or damages.
Privately owned utilities, such as gas mains, underground electrical and telephone cables, telephone poles, light poles, etc., required to be moved to make way for new construction will be moved by others unless designated otherwise on the plans.

However, the CONTRACTOR shall be responsible for contacting all utilities companies associated with this project to determine additional costs that may be associated with these utilities. These costs shall be incidental to the bid price.

Temporary service shall be provided by the CONTRACTOR during any period when utility lines are disturbed unless the CONTRACTOR makes other arrangements with the utility users and of existing utility lines, if interrupted, shall be restored as quickly as possible. Do not interrupt existing utility services without written permission from ENGINEER.

1.04 PROTECTION OF EXISTING STRUCTURES:

Where excavation will be required adjacent to existing structures, the CONTRACTOR shall be solely responsible to maintain the structural integrity of the existing structures. The CONTRACTOR shall take whatever means necessary to ensure that the existing structure is not damaged. The CONTRACTOR shall repair all damage to the existing structures at his own expense. Any delay, additional work, or extra cost to the CONTRACTOR caused by existing underground installations shall not constitute a claim for extra work, additional payment or damages. Unless otherwise noted on the Construction Drawings, all existing ditches disturbed by construction shall be restored to their original size, line, and grade.

1.05 FIELD CHECK OF EXISTING STRUCTURES:

The dimensions and elevations of existing structures and locations of existing fences, pipelines, conduits, cables, and equipment shown on the drawings were taken for the most part from available records and survey data and are not guaranteed for accuracy.

It shall be the responsibility of the CONTRACTOR to check all dimensions and elevations of existing structures, pipelines, conduits, cables, equipment, or other existing items, both above and below ground, affected by or affecting the Work under this contract, prior to the start of construction or ordering materials and equipment affected thereby.

1.06 SURFACE DRAINAGE:

Water from such sources as surface runoff, dewatering and flushing of water lines or forcemain during project construction shall not be allowed to enter into drainage ways or open areas that will cause flooding of existing structures, street intersections, or lawn areas.
1.07 WORK SEQUENCE:

A. General

1. The CONTRACTOR shall schedule the work to minimize inconvenience to the OWNER and to adjacent property owners and to minimize interruptions to utility service. This shall include minimizing obstructions to local traffic. Close coordination will be required between the CONTRACTOR, OWNER, ENGINEER, City, utility service companies, law enforcement, fire department and ambulance services.

2. CONTRACTOR shall coordinate all work with the Owner to assure the water supply or sewer flow is not compromised during improvements to the water or sewer systems.

3. The CONTRACTOR shall coordinate all testing and cleaning of all pipelines, and their connection to existing lines with the City. The OWNER, ENGINEER, and City officials shall be notified at least 48 hours in advance of any proposed water or sewer main testing or connections to existing mains. The utility service companies such as power, gas, telephone, and video shall be contacted at least 48 hours in advance of when locating of services will be required. The OWNER reserves the right to refuse the CONTRACTOR's request for testing and cleaning any new mains or shutting of any sections of the existing water system if the OWNER feels there are circumstances that prohibit these activities at the particular time requested. Such circumstances must be related to the reliability of the water supply or otherwise compromise the ability to maintain water service to the residents.

PART 2 - PRODUCTS
NONE

PART 3 - EXECUTION
NONE

END OF SECTION 01 11 00
SECTION 01 11 30 – SPECIAL PROVISIONS

PART 1 – GENERAL

1.01 DESCRIPTION

These Special Provisions supersede the Montana Public Works Standard Specifications governing this project. All provisions which are not amended shall remain in full force and effect. In case of a conflict, precedence shall be given the order of:

a. Special Provisions (Section 011130),
b. City of Bozeman Modifications to MPWSS (March 2011)
c. MPWSS Sixth Edition, April 2010

Any subsequent addenda issued after these specifications have been prepared shall supplement and/or supersede any article of these specifications.

1.02 PRELIMINARY MATTERS

A. Survey Markers and Monuments. The CONTRACTOR shall protect and not disturb any survey markers or monuments, such as lot or block corners, property pins, or section corners or section breakdown corners. Any survey marker or monument that is disturbed or destroyed by the CONTRACTOR shall be replaced at no cost to the OWNER by a licensed land surveyor at the CONTRACTOR’s expense. The CONTRACTOR shall engage the services of a registered land surveyor to tie the existing corner prior to construction, to punch the corner location on the new monument following construction, and to file a Certified Corner Recordation form with the Gallatin County Clerk and Recorder. Care shall be taken not to disturb the survey monument following installation.

1.03 PROJECT COORDINATION

A. Use of Premises. The CONTRACTOR shall confine his operations to existing right-of-way at the site of the proposed work. Materials and equipment may be stored on the project site at locations approved by the OWNER. It shall be understood that the responsibility for protection and safekeeping of equipment and materials on or near the site will be entirely that of the CONTRACTOR and that no claim shall be made against the OWNER by reason of any act of an employee or trespasser.

B. Properties Adjacent to the Right-of-Way. The CONTRACTOR shall coordinate with the adjoining property owners prior to beginning work adjacent to neighboring properties. The CONTRACTOR shall notify in writing the adjoining property owners 5 days prior to beginning work. Notification shall provide:

1. The proposed schedule of work
2. CONTRACTORS work and emergency contact information
3. ENGINEERS contact information
4. OWNERS Representative contact information
C. Water required for construction such as compaction, paving dust control, or any other construction related work must be supplied by the Contractor at his expense.

D. Water/Sewer Service Reconnections.

1. It shall be the responsibility of the CONTRACTOR to hook up all active water and sewer services.

E. Traffic Control and Restoration

1. The CONTRACTOR shall be responsible for the closure of all streets affected by construction. This includes all coordination with all personal using affected the area (city, residence, businesses, etc.), providing alternate routes around the construction zone, asphalt removal and restoration, and striping to restore the roadway to pre-existing conditions.

1.04 EXISTING FACILITIES

A. Protection of Existing Utilities. _Existing underground installations such as water mains, gas mains, sewers, telephone lines, power lines, and buried structures in the vicinity of the work to be done hereunder are indicated on the Drawings only to the extent such information has been made available to or discovered by the ENGINEER in preparing the Drawings. There is no guarantee as to the accuracy or completeness of such information, and all responsibility for the accuracy and completeness thereof is expressly disclaimed._

1. Utility service connections are generally shown on the Drawings, but the CONTRACTOR shall be solely responsible for locating all existing public and private underground installations, including service connections, in advance of excavating or trenching, by contacting the city thereof and prospecting. The CONTRACTOR shall use his own information and shall not rely solely upon information shown on the Drawings concerning existing underground installations. The CONTRACTOR shall repair all damage to existing utilities or property at his own expense.

2. The CONTRACTOR shall coordinate with the utility companies for the protection or adjustment of existing utilities in the vicinity of the work and shall have utility company representatives present when necessary to support utility poles or buried utility lines while working adjacent to such utilities. The CONTRACTOR shall pay all costs associated with having utility company representatives on the site for this work and shall include these costs in the price bid for related items of work.

3. The OWNER, ENGINEER and Northwestern Energy personnel must be notified at least 48 hours in advance prior to exposing utilities owned by Northwestern Energy. Utilities are not to be backfilled until Northwestern Energy personnel have physically inspected each crossing to ensure the utilities are not damaged prior to backfilling.

B. Protection of Existing Structures. _Where construction will be required adjacent to existing structures, the CONTRACTOR shall be solely responsible to maintain the structural integrity of the existing structures. The CONTRACTOR shall take whatever means necessary to ensure that the existing structure is not damaged and, if necessary, shall install shoring or sheet piling or change the size or type of construction equipment. The CONTRACTOR shall repair all damage to the existing structures at his own expense. Any fences destroyed during construction shall be repaired to the satisfaction of the OWNER. Any delay, additional work, or extra cost to the CONTRACTOR caused by existing underground installations shall not constitute a claim for extra work, additional payment or damages._
C. Fiber Optic Cables. Special attention shall be paid to crossings of fiber optics cables and where the carrier pipes have been capped with concrete. In some cases, the bottom portion of the piping is not supported by the concrete cap. CONTRACTOR shall take special precautions in supporting and excavating under these crossings.

D. Pavement / Lane Markings. All pavement/lane markings damaged or removed as part of the work shall be restored to a condition equal or better than the pre-existing condition. The CONTRACTOR shall be responsible for repainting of curbs, centerline striping, and turn arrows that are disturbed in the work area. CONTRACTOR shall also restore all pavement/lane markings dulled or damaged outside of the trench restoration zone at no additional cost to the OWNER.

1. For repainting, the work area shall include not only the pavement markings disturbed by the trench restoration, but also any area where pavement markings have been dulled, covered, scratched, marred, or otherwise disturbed by the CONTRACTOR'S operations. Where plastic markings have been dulled, they shall be painted over so as to increase their remaining effectiveness. Where plastic markings have been removed, these markings shall be replaced with equivalent plastic markings. "CONTRACTOR'S operations" include all construction operations and pavement restoration, traffic control, or storage of equipment or materials necessary for this project.

2. Surface preparation and marking shall be as specified in Section 02581 of the Montana Public Works Specifications, 5th edition. Color chips shall not be provided to prospective bidders. Samples of plastic pavement markings will not be required from the CONTRACTOR. The width and layout of stripes on the area to be painted shall match the markings disturbed and shall be laid out by the CONTRACTOR and approved by the ENGINEER prior to applying the marking or tape.

1.05 ENVIRONMENTAL CONTROLS

A. Keep project neat, orderly, and in a safe condition at all times. Provide on-site containers for collection of rubbish and dispose of it at frequent intervals during the progress of work. No burning of debris will be permitted inside the City limits. No trash shall be disposed of in the trench or excavations.

B. The CONTRACTOR shall sweep paved areas and water unpaved dry areas as deemed necessary by the ENGINEER to control soil dust, specifically on detour routes.

C. CONTRACTOR shall place straw bales around inlets and in drainage swales as required to control soil erosion until vegetation is restored.

D. CONTRACTOR shall dispose of all oil and petroleum products in an appropriate manner off-site. This requirement shall include any and all materials used for clean-up of such materials.

E. Night Work. Night work shall be allowed only with written approval of OWNER and city. Emergency work may be done without prior permission.

F. Coordination with Subcontractors. All work shift times of the Prime Contractor and his subcontractors shall coincide with each other to prevent extending the total hours of work in a single day.

G. Hours. To minimize construction noise impacts on the local residents, no construction activities will be allowed between the hours of 8:00 p.m. and 8:00 a.m., unless explicitly allowed by the ENGINEER in writing.
H. Adverse Weather Conditions. The CONTRACTOR is advised that should he request a prolonged adverse weather shutdown (i.e. winter shutdown) and should such a shutdown be approved by the OWNER, all work on the project shall cease. CONTRACTOR shall be issued a suspend work order when the work stops and a resume work order when the work commences. The time associated with this suspension of work will not be assessed against the contract time. The ENGINEER will not be available for work inspection during such shutdowns and any work completed by the CONTRACTOR during such a shutdown will not be accepted by the ENGINEER.

1. In no case will an adverse weather shutdown be approved by the OWNER when construction work is only partially completed. Where the OWNER approves a shutdown, the CONTRACTOR shall restore all utility services to users in the construction area, and open up traffic access in the construction area.

2. The CONTRACTOR shall provide periodic road maintenance during any shut down period. Materials for this maintenance shall be consistent with the conditions of the roadway. Paved streets shall be maintained with cold mix, and gravel streets shall be maintained with gravel, each of thicknesses satisfactory to carry the traffic without development of surface irregularities. Any costs related to the road maintenance of the above will be the responsibility of the CONTRACTOR.

3. Should adverse weather require a shutdown of the work by the OWNER or the CONTRACTOR, CONTRACTOR shall be responsible for any and all costs associated with the shutdown including but not limited to restoration of all utility services, restoration of streets and alleys to provide access during shutdown period, periodic road maintenance during shutdown period, demobilization, remobilization, and lost overhead and profit to the CONTRACTOR and any subcontractors.

1.06 SUBSURFACE CONDITIONS

A. The CONTRACTOR shall satisfy himself as to the ground water and subsurface conditions at the site of the work. The CONTRACTOR shall be aware that ground water and soil moisture contents can fluctuate seasonally. Supplementary subsurface information is available in the report “Geotechnical Investigation Report, Off Site Sewer Main NAIC MSU Bozeman, MT” by DOWL, March 4, 2016. Copies of this report are included in this project manual and also will be made available at the offices of DOWL, 2090 Stadium Drive, Bozeman, MT 59715. Copies can be purchased at the office of DOWL.

B. Soil moisture contents and ground water levels will fluctuate due to seasonal changes, weather, irrigation, and other variations in conditions. The CONTRACTOR is responsible to determine construction methods and include these costs in the bid unit prices. Methods and procedures related to wet soils could include adjusting the moisture of the material or removal of the wet material and replacement with another suitable material.

1.07 TEMPORARY CONTROLS

A. General. Temporary service shall be provided by the CONTRACTOR during any period when utility lines are disturbed unless the CONTRACTOR makes other arrangements with the utility users and owners that are satisfactory to said users and owners. Service of existing utility lines, if interrupted, shall be restored as quickly as possible.

B. Groundwater. The Contractor is advised that groundwater may be present at the project site. The Contractor is responsible for providing dewatering equipment and methods for this project. Groundwater shall be removed from the open trench area to satisfactorily prevent the rising of water into the new or any existing piping that may be exposed during the work. The Contractor shall be responsible for arrangements of permits and obtaining of sites for groundwater discharge. This shall include all cleanup, restoration, etc., of any discharge areas. The above-
related work shall be part of the unit bid price for pipe.

1.08 CUTTING, PATCHING AND RESTORATION

A. Asphalt Disposal. CONTRACTOR shall dispose of waste asphalt by one of the two methods including: 1) milling asphalt and stockpiling at the site designated by the OWNER's or 2) disposing of it off-site according to applicable state and local regulations.

B. Asphalt Restoration. The CONTRACTOR shall restore all asphalt surfaces disturbed by construction in accordance with the pavement restoration details on the plans. Existing pavement shall be cut to provide a straight and vertical joint.

C. Temporary Driving Surface. Trenches may be restored to a temporary driving surface and reopened to traffic. CONTRACTOR shall maintain the temporary surfaces in a safe and smooth condition until paving is completed. Failure to maintain surfaces will prevent work from proceeding into additional work areas, at the discretion of the ENGINEER.

D. Pavement Damage. The CONTRACTOR is responsible for the protection of and the cost to replace asphalt damaged outside the pay limit. The CONTRACTOR shall use equipment sized and equipped to protect the asphalt outside the pay limit or pay for replacing the asphalt at his cost. The CONTRACTOR shall make his own assessment of the situation and adjust his bid accordingly.

E. Landscaping Restoration. All landscaping disturbed by construction activities must be restored to a condition specified by the plans or if unspecified equal to or better than the conditions existing prior to construction as judged by the ENGINEER. The CONTRACTOR shall be required to stockpile and restore all topsoil and irrigation systems disturbed by construction.

1.09 REMOVAL/DISPOSAL OF EXISTING MATERIALS

A. Asbestos Cement Pipe. Specific procedures are required for the handling of asbestos cement pipe. CONTRACTOR shall handle the pipe in accordance with federal and state guidelines for handling, hauling and disposing of AC pipe materials.

1.10 TRENCH BACKFIL & PIPE BEDDING

A. Construction Sequencing. Contractor shall closely follow the pipe installation with the backfill operation. A maximum of 300 feet of trench or one city block, whichever is shorter, (per pipeline installation crew) shall be open at any one time. The CONTRACTOR shall backfill all trenches up to the immediate work site at the end of each day leaving no more than 30 feet of open trench.

B. Replacement of Unsuitable Backfill Material: Based upon the results of the geotechnical investigation, it is anticipated soils in excess of optimum moisture will be encountered in some of the trench excavations. In locations where excavated materials are encountered meeting the soils classification of (ML, CL, SM or SC) and with moisture content in excess of 5% above optimum moisture, as determined by ASTM D698-91, or frozen soils, the material shall not be used as backfill material and replaced with material from an approved borrow source upon approval of the ENGINEER.

1. Borrow material shall be granular with a maximum size of 4 inches. Material shall be free of ashes, cinders, organic material, debris, frozen material or other unsuitable material. Material passing a #40 sieve shall not have a plasticity index in excess of 10.
1.11 CONSTRUCTION AND TESTING WATER AND SEWER.

A. Construction water required for compaction of embankments, subgrade, and gravel courses, paving, cleanup, or any other construction related work shall be supplied by the CONTRACTOR at CONTRACTOR’s expense. Water required for water main flushing, filling, and hydrostatic pressure and leakage testing shall be supplied by the CONTRACTOR at no cost to the OWNER.

1.12 SCHEDULING

A. Equipment Delivery. It is the CONTRACTOR’s responsibility to appropriately coordinate the construction schedule to provide for late deliveries given the allowable construction contract time as provided in the construction agreement.

1.13 CLOSE-OUT

A. Cleaning. The CONTRACTOR shall clean the streets to the same or cleaner condition than prior to the start of construction. The cost of cleaning shall be included in the unit bid price for roadway improvements. The work zone shall be complete, clean, and street marking reapplied to the satisfaction of the OWNER prior to acceptance of the work zone and prior to opening of the street to normal traffic flow. No washing of the streets shall be allowed to discharge into sanitary sewer or storm sewer.

B. Record Drawings. The CONTRACTOR’s superintendent or his designated representative shall maintain, at the project site, a “Record Set of Drawings” showing field changes, as-built elevations, unusual conditions encountered during construction, manufacturer’s catalog number of equipment supplied, and other data as required to provide the OWNER with an accurate “as-constructed” set of Drawings. An approval by the ENGINEER shall not be given on the final payment request until complete record drawings are submitted to the ENGINEER.

END OF SECTION 01 11 30
SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:
   1. Section 311000 "Site clearing".
   2. Section 311500 "Tree Protection"

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

   1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
   2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

   1. Substitution Request Form: Use CSI Form 13.1A.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. Certificates and qualification data, where applicable or requested.

g. List of similar installations for completed projects with project names and addresses and names and addresses of ENGINEERs and owners.

h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

i. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

j. Cost information, including a proposal of change, if any, in the Contract Sum.

k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. ENGINEER's Action: If necessary, ENGINEER will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. ENGINEER will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or ENGINEER's Supplemental Instructions for minor changes in the Work.

b. Use product specified if ENGINEER does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.
1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: ENGINEER will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, ENGINEER will return requests without action, except to record noncompliance with these requirements:

   a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
   b. Substitution request is fully documented and properly submitted.
   c. Requested substitution will not adversely affect Contractor's construction schedule.
   d. Requested substitution has received necessary approvals of authorities having jurisdiction.
   e. Requested substitution is compatible with other portions of the Work.
   f. Requested substitution has been coordinated with other portions of the Work.
   g. Requested substitution provides specified warranty.
   h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: ENGINEER will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of ENGINEER.

1. Conditions: ENGINEER will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, ENGINEER will return requests without action, except to record noncompliance with these requirements:

   a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to ENGINEER for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
   b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00
SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.
5. Periodic construction video recordings.

B. Related Requirements:
1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
3. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 ALLOWANCES

A. Costs: Photographic documentation services are to be considered incidental to this project.

1.4 UNIT PRICES

A. Basis for Bids: Base number of construction photographs on average of 20 photographs per week over the duration of Project.

1.5 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
B. Digital Photographs: Submit image files within seven days of taking photographs.
   1. Identification: Provide the following information with each image description in file metadata tag:
      a. Name of Project.
      b. Name and contact information for photographer.
      c. Name of Engineer.
      d. Name of Contractor.
      e. Date photograph was taken.
      f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
      g. Unique sequential identifier keyed to accompanying key plan.

C. Video Recordings: Submit video recordings within [seven] days of recording.
   1. Submit video recordings in digital video disc format acceptable to Owner.
   2. Identification: With each submittal, provide the following information:
      a. Name of Project.
      b. Name and address of photographer.
      c. Name of Engineer.
      d. Name of Contractor.
      e. Date video recording was recorded.
      f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
      g. Weather conditions at time of recording.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

   A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 6 megapixels.

   B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to Owner.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

   A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to ENGINEER.

C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Construction Manager.

1. Flag construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take 20 photographs weekly.

E. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents.

3.2 CONSTRUCTION VIDEO RECORDINGS

A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.

B. Recording: Mount camera on tripod before starting recording unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.

C. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.
2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.
D. Preconstruction Video Recording: Before starting construction, record video recording of Project site and surrounding properties from different vantage points, as directed by Construction Manager.

1. Flag construction limits before recording construction video recordings.
2. Show existing conditions adjacent to Project site before starting the Work.
3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.
4. Show protection efforts by Contractor.

END OF SECTION 01 32 33
SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Section 333000 "Sanitary Sewers.
2. Section 321216 "Asphalt Paving".
3. Section 321313 "Concrete Paving"
4. Section 312000 “Earth Moving”

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require ENGINEER's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require ENGINEER's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by ENGINEER and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
   a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:
   a. Scheduled date for first submittal.
   b. Specification Section number and title.
   c. Submittal category: Action; informational.
   d. Name of subcontractor.
   e. Description of the Work covered.
   f. Scheduled date for ENGINEER's final release or approval.
   g. Scheduled date of fabrication.
   h. Scheduled dates for purchasing.
   i. Scheduled dates for installation.
   j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on ENGINEER's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. ENGINEER will advise Contractor when a submittal being processed must be delayed for coordination.

2. Resubmittal Review: Allow 7 days for review of each resubmittal.

C. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by ENGINEER

3. Include the following information for processing and recording action taken:

   a. Project name.
   b. Date.
   c. Name of ENGINEER.
   d. Name of Construction Manager.
   e. Name of Contractor.
   f. Name of subcontractor.
   g. Name of supplier.
   h. Name of manufacturer.
   i. Submittal number or other unique identifier, including revision identifier.

   1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

   j. Number and title of appropriate Specification Section.
   k. Drawing number and detail references, as appropriate.
   l. Location(s) where product is to be installed, as appropriate.
   m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless ENGINEER observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

   a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to ENGINEER.

5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal
SUBMITTAL PROCEDURES

form. ENGINEER[ will return without review submittals received from sources other than Contractor.

a. Transmittal Form for Paper Submittals: Use CSI Form 12.1A.

b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:

1) Project name.
2) Date.
3) Destination (To:).
4) Source (From:).
5) Name and address of ENGINEER.
6) Name of Construction Manager.
7) Name of Contractor.
8) Name of firm or entity that prepared submittal.
9) Names of subcontractor, manufacturer, and supplier.
10) Category and type of submittal.
11) Submittal purpose and description.
12) Specification Section number and title.
13) Specification paragraph number or drawing designation and generic name for each of multiple items.
14) Drawing number and detail references, as appropriate.
15) Indication of full or partial submittal.
16) Transmittal number[, numbered consecutively].
17) Submittal and transmittal distribution record.
18) Remarks.
19) Signature of transmitter.

D. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by ENGINEER on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

E. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from ENGINEER's action stamp.

F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from ENGINEER's action stamp.
PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. ENGINEER[, will return two copies.

2. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. ENGINEER will not return copies.

3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.

b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.
c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:

   a. PDF electronic file.
   b. Three paper copies of Product Data unless otherwise indicated. ENGINEER will return two copies.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to ENGINEER.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. Action Submittals: ENGINEER will review each submittal, make marks to indicate corrections or revisions required, and return it. ENGINEER will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

B. Informational Submittals: ENGINEER will review each submittal and will not return it, or will return it if it does not comply with requirements. ENGINEER will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from ENGINEER.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the ENGINEER without action.

END OF SECTION 01 33 00
SECTION 01 77 00 – CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION:

The following specification includes all work involved in final closeout of this Project. Included are items such as post-construction inspection, acceptance of the Work, closeout records, cleaning, and project record drawings.

1.02 RELATED WORK:

1. General Conditions

1.03 SUBMITTALS:

All required closeout submittals shall be reviewed by the ENGINEER prior to final payment. Items to be submitted are:

A. Project Record Drawings.

B. Guarantees and Bonds. Provide guarantees and bonds as required herein and as provided by manufacturers of all products and equipment.

C. Certification of Completion: Certifying completion of construction, compliance with the Contract Documents, and waiver of any claims.

D. Contractor's Affidavit of Release of Liens.

E. Final Waiver of Lien.

F. Consent for Surety to Final Payment:

G. Post Construction Maintenance Personnel: CONTRACTOR shall submit his plans for maintenance of the system during the one-year correction period and shall name the individual who will have the power and responsibility to act for the CONTRACTOR in this regard.

F. Insurance Certificate: Certificate to indicate which insurance coverages required by General Conditions that are to remain in effect after project is completed.

PART 2 - PRODUCTS

None.

PART 3 - EXECUTION

3.01 CLEANING:
Sweep paved surfaces, rake other surfaces or grounds. All lawn or grassed areas shall be raked and cleaned to level and remove all rocks, stones or other debris from construction. Sweep all paved surfaces in the construction area including all adjacent haul streets and other incidental areas soiled during construction.

3.02 PROJECT RECORD DRAWINGS:

CONTRACTOR'S Responsibility: CONTRACTOR shall keep record of and indicate all changes and revisions to the original design which affect the permanent structures and will exist in the completed Work. Reference all underground existing utilities to semi-permanent or permanent physical objects. Reference water, sewer, telephone, and electric lines to corners of buildings or other structures, if applicable. Reference elevation of all existing lines on profile sheets or call out elevations in plan if no profile exists. Keep record drawings current. Certification of accuracy and completeness will be required on monthly submitted payment requisitions. Project record drawings are the property of the OWNER and shall be delivered to the ENGINEER before closeout, and before final payment to the CONTRACTOR.

3.03 SUBSTANTIAL COMPLETION AND FINAL INSPECTION:

Submit written certification that project, or designated portion of Project, is substantially complete and request, in writing, a final inspection. The ENGINEER, OWNER, and any representatives of funding agencies will make an inspection within 10 days of receipt of any request.

Should the ENGINEER determine that the Work is substantially complete, he will prepare a punch list of deficiencies that need to be corrected before final acceptance, and issue a Notice of Substantial Completion with the deficiencies noted.

Should the ENGINEER determine that the Work is not substantially complete, he will immediately notify the CONTRACTOR, in writing, stating reasons. After the CONTRACTOR completes the Work, he shall submit certification and request for final inspection.

3.04 ACCEPTANCE OF THE WORK:

After all deficiencies have been corrected, a Letter of Final Acceptance will be issued. If only designated portions of the project have been inspected, a Letter of Partial Acceptance will be issued for that portion corrected.

Acceptance may be given prior to correction of deficiencies which do not preclude operation and use of the facility; however, final payment will be withheld until all deficiencies are corrected. Until receipt of the Letter of Final Acceptance, the CONTRACTOR shall be responsible for the Work of this Contract.

3.05 POST-CONSTRUCTION INSPECTION:

Prior to expiration of one year from date of final acceptance, the ENGINEER, OWNER and representatives of funding agencies will inspect the project to determine whether corrective work is required. The CONTRACTOR will be notified in writing of all deficiencies. Corrective work must start on noted deficiencies within 10 days of receipt of notification to CONTRACTOR.
EXISTING CONDITIONS
SECTION 02 32 00 - GEOTECHNICAL DATA

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes geotechnical data.

1.2 GEOTECHNICAL DATA

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.

B. A geotechnical investigation report for Off-Site Sewer Main Norm Asbjornson Innovation Center, Montana State University, Bozeman, Montana, prepared by DOWL, dated March 4, 2016, is available for viewing as appended to this Document.

END OF SECTION 02 32 00

Attachment to follow: Geotechnical Report
EARTHWORK
SECTION 31 10 00 – SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and removing site utilities.

1.2 RELATED REQUIREMENTS:

1. Section 312000 - Earth Moving.
2. Section 023200 - Geotechnical Data for geotechnical report and recommendations for the site.
3. Section 311500 – Tree Protection

1.3 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Standard Specifications:

2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.
3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

C. Related Sections:

1. Section 023200 "Geotechnical Data" for geotechnical report and recommendations for the site.
2. Section 312000 - Earth Moving
3. Section 311500 – Tree Protection
1.4 DEFINITIONS

A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

B. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.

C. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and as defined by landscape ENGINEER.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.5 MATERIAL OWNERSHIP

A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.6 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.7 PROJECT CONDITIONS

A. City of Bozeman Right-of-Way: Segments of this project are within improved and unimproved City of Bozeman right-of-way.

1. Improved right-of-way: Right-of-way with constructed surface improvements and installed underground and / or overhead public and private utilities. Existing improvements and installed utilities shall be protected in place to industry best management practices. Contractor shall coordinate with utility owners when working in proximity of the buried or overhead utility to protect the utility in place. Surface improvements shall be restored in-kind to plan or jurisdiction standard whichever is more stringent. Contractor shall employ best management practices to protect existing trees and vegetation along the project alignment consistent with the plan and specification.
2. Unimproved right-of-way: Right-of-way without constructed surface improvements but with installed underground and / or overhead public and private utilities. THE UNIMPROVED RIGHT-OF-WAY SEGMENTS OF THIS PROJECT HAS MATURE WELL ESTABLISHED TREES WHICH AS DIRECTED BY THE PLAN AND / OR OWNER WILL REQUIRE FULL REMOVAL (LIMBS, TRUNK AND ROOT SYSTEM) OR TO BE PROTECTED IN-PLACE. The contractor shall employee industry best management practices in working near the existing trees and vegetation and shall coordinate with and contact the owner in writing 5 working days prior to disturbance near the aforementioned trees or other existing vegetation. The Owner reserves the right to retain an independent arborist to observe the work near the subject trees, and to direct the Contractor in means and methods to protect the tree or if deemed necessary the removal of the tree.

Installed utilities shall be protected in place to industry best management practices. Contractor shall coordinate with utility owners when working in proximity of the buried or overhead utility to protect the utility in place.

B. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, alleys, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

C. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner’s property will be obtained by Contractor before performing work.

1. Do not proceed with work on adjoining property until approved by landowner.

D. Utility Locator Service: Notify One Call for area where Project is located before site clearing.

E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 023200 “Geotechnical Data” within geotechnical report.

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.
PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Protect existing site improvements to remain from damage during construction.
   1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

A. Protect, repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner as specified in Section 311500 Tree Protection or as directed by Owner.

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
   1. Arrange with utility companies to shut off indicated utilities.
   2. Arrange with utility companies to support overhead utilities. Contractor is recommended to contact:
      Northwestern Energy
      Dustin Workman
      406-582-4644

B. Locate, identify, and disconnect utilities indicated to be abandoned in place.
C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Coordinate utility interruption with City of Bozeman personnel.

D. Excavate for and remove underground utilities indicated to be removed.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.
3. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches.
2. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 10 00
SECTION 31 15 00 – TREE PROTECTION

PART 1 - GENERAL

1.0 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General conditions, Supplementary Conditions, apply to work of this section.

1.1 DESCRIPTION

The work in this section includes protection, trimming and maintenance of existing trees, shrubs and groundcover that are affected by execution of the Contract Documents, whether temporary or permanent construction.

A. The Contractor assumes responsibility for all coordination of work within the Critical Root Zone (CRZ) of protected trees.

B. Plant protection applies to all trees to remain within the Limit of Work as well as those, which are adjacent to the Limit of work and could be affected by new construction. Work to include:

1. Protection of existing trees and indicated vegetated areas.

2. Watering of existing trees and vegetated areas to be protected.

3. Maintenance of existing and newly installed tree and vegetation protection elements including but not limited to fencing, organic bark mulch, landscape fabric, cabling, and signage.

4. Pruning of existing trees to be protected.

5. Removal of pruning debris and other excess material not used. On-site chipping and re-use of pruned material is encouraged.

C. Contractor shall perform all tree protection installation and removal, and any necessary pruning work required for construction under the supervision of the Owner.

1.2 RELATED REQUIREMENTS

A. Section 311000 – Site Clearing

B. Section 312000 – Earth Moving

1.3 DEFINITIONS

A. Tree Protection Zone: Area surrounding individual trees or groups of trees to remain during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

B. Drip Line: The areas encompassing the base of the tree as delineated by an imagined vertical line drawn from the farthest extent of the branches to the ground.

C. Diameter at Breast Height (DBH): Diameter at breast height as measured at four and one-half feet (4'-6") above the existing grade at the base of the tree.
D. Critical Root Zone (CRZ): An area up to one and one-half the radius of the drip line of the tree.

1.4 REFERENCED STANDARDS


D. Alex Shigo, Tree Pruning, Shigo & Tree Associates, LLC, 1989.


G. ANSI A300: Standards for Tree Care Operations, American National Standards Institute.

1.5 QUALITY ASSURANCE

A. Tree Service Firm Qualifications: An experienced tree service firm with a minimum of five years of experience that has successfully completed tree protection and trimming work similar to that required for this project.

B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where the project is located.


   1. Owner’s Arborist shall be present for all pruning, thinning and tree protection work.

D. Pre-Construction Conference: Conduct conference at project site to comply with requirements in ANSI A300 Division 1, Section “Project Management and Coordination.”

   1. Before tree protection and trimming operations begin, meet with representatives of authorities having jurisdiction, Owner’s Arborist, Landscape ENGINEER, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.

1.6 SUBMITTALS

A. Product Data: For each type of product indicated below.

B. Product samples:

   1. Tree protection area signage.

   2. Cabling materials.

   3. Landscape fabric.
4. Organic bark mulch.

C. Tree Pruning Schedule: Written schedule from arborist detailing scope and extent of pruning of trees to remain that are affected by construction.

D. Tree Protection Plan: Contractor shall submit a tree protection plan that confirms that use of the tree protection fencing plan provided in the Contract Documents. Contractor shall notify the Owner of all work activities within 20 feet of trees to be protected, anticipated work methods, proposed tree and root avoidance techniques, and Arborist's on-site confirmation of CRZ for each tree.

1.7 JOB CONDITIONS

A. City of Bozeman Right-of-Way: Segments of this project are within improved and unimproved City of Bozeman right-of-way.

1. Improved right-of-way: Right-of-way with constructed surface improvements and installed underground and / or overhead public and private utilities. Existing improvements and installed utilities shall be protected in place to industry best management practices. Contractor shall coordinate with utility owners when working in proximity of the buried or overhead utility to protect the utility in place. Surface improvements shall be restored in-kind to plan or jurisdiction standard whichever is more stringent. Contractor shall employ best management practices to protect existing trees and vegetation along the project alignment consistent with the plan and specification.

2. Unimproved right-of-way: Right-of-way without constructed surface improvements but with installed underground and / or overhead public and private utilities. THE UNIMPROVED RIGHT-OF-WAY SEGMENTS OF THIS PROJECT HAS MATURE WELL ESTABLISHED TREES WHICH AS DIRECTED BY THE PLAN AND / OR OWNER WILL REQUIRE FULL REMOVAL (LIMBS, TRUNK AND ROOT SYSTEM) OR TO BE PROTECTED IN-PLACE. The contractor shall employee industry best management practices in working near the existing trees and vegetation and shall coordinate with Owner prior to disturbance near the aforementioned trees or other existing vegetation. The Owner reserves the right to retain an independent arborist to observe the work near the subject trees, and to direct the Contractor in means and methods to protect the tree or if deemed necessary the removal of the tree.

Installed utilities shall be protected in place to industry best management practices. Contractor shall coordinate with utility owners when working in proximity of the buried or overhead utility to protect the utility in place.

B. Site Work Restrictions: In order to prevent excessive soil compaction and destruction of soil structure, no site work will be performed in cases where equipment or traffic must pass over wet soils or if wet soils must be handled or manipulated within the Tree Protection Zone in order for the work to progress. Wet soil is defined as any soil within 85 percent of field capacity (saturation).

C. Utilities

1. Utility locates are required prior to digging and any construction activities.
2. Coordinate work with Owner, including irrigation specialist, in order to prevent damage to underground sprinkler system.

1.8 MAINTENANCE

A. Water will be available on site. Provide necessary hoses and other watering equipment required to complete work.

B. Maintain existing plantings and trees by watering, cultivating, weeding, and spraying as necessary to keep landscape in a vigorous, healthy condition.

C. Coordinate watering schedules with irrigation contractor during installation and until final acceptance. Provide deep root watering to newly installed trees.

PART 2 – PRODUCTS

2.0 MATERIALS

A. Topsoil Depth: Natural or cultivated surface-soil layer containing composted organic matter an sand, silt and clay particles; friable, pervious, and black or darker shade of brown, gray or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than two inches in diameter; and free of weeds, roots and toxic and other non-soil materials.

B. Filter Fabric: Manufacturer’s standard, non-woven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.

C. Chain-Link Fence:

1. Fencing shall be galvanized chain link as specified below, six feet minimum height. Plastic fencing and wood stakes, or snow fencing are not acceptable.

2. Includes posts, braces, supports and mesh that may be salvaged materials or other used material to form a minimum six foot high enclosure.

2. Posts shall be a minimum diameter of 1-1/2-inch steel pipe.

3. Mesh shall be two inches by two inches by 11 gauge minimum chain link fabric.

4. Use of concrete or metal post piers is permitted.

E. Signage: Provide weather resistant 8-1/2 inches by 11 inches fluorescent green or yellow signs that identify Tree Protection Zone and list restrictions.

F. Cabling: Cabling materials shall meet the ANSI A300 standards for cabling of trees.

G. Tree Tags: Rack track shaped aluminum engraved numbered tags.

H. Organic Mulch: Shall be free from weed seed, sawdust and splinters and shall not contain resin, tannin, wood fiber or other compounds detrimental to plant life. Bagged mulch shall have moisture content not in excess of 22%. Bulk mulch shall have a size range of ½ inch to 1-1/4 inch with a maximum of 20% passing a ½ inch screen. Re-use of organic debris generated during the project is encouraged.
I. Mycorrhizae Fungal Inoculants: "mycogrow gel" as manufactured by Fungi Perfecti, Olympia, WA, 1-800-780-9162, or approved alternate.

J. Slow Release Fertilizer: Osmocote Plus, 15-9-12, or approved alternate.

K. Anti-Desiccant: Protective film emulsion for protection of plant surfaces during transport. Permeable to permit transpiration, as manufactured by Wilt Pruf, Inc., P.O. Box 4280, Greenwich, Connecticut, 06830, or approved alternate. Mixed and applied in accordance with manufacturer's instructions.

L. Staking and Guying

   1. Tie Wire: 12-gauge, galvanized wire
   2. Metal stakes: 24-inch t-stakes
   3. Metal posts: 8’-0” t-stakes
   4. Nylon strap: three inches wide, 12 inches long white or black nylon strap with one ½” brass grommet in each end or Landscape ENGINEER approved equivalent.

PART 3 - EXECUTION

3.0 INSTALLATION OF TREE PROTECTION FENCING

A. Prior to the start of any construction activity install temporary fencing at the designated tree protection zones to protect existing trees and vegetation to remain from construction damage. Maintain temporary fence and remove when construction (including irrigation and planting) is complete. Owner shall approve fence installation prior to mobilization of the site.

   1. Install chain-link fence according to ASTM F 567 and manufacturer’s written instructions. All fencing to be locked securely and only entered with owner’s permission and in consultation with the Owner’s Arborist.

   2. Place concrete or metal piers to minimize pedestrian and vehicle circulation and landscape impacts.

   3. Provide diagonal bracing to vertical posts at corners of enclosures and wherever needed to ensure rigidity of the fencing.

   4. If chain link fabric is used versus chain link panels the chain-link fabric shall be tight to grade at the bottom edge and stretched uniformly between posts. Top of fabric shall be a minimum of six feet above grade. Install fabric to form completely closed area around tree(s). Attach fabric to posts 12 inches on center with 11 gauge wire ties securely fastened, or with bolted ring clips and to top rail not over three feet on center.

B. Fencing shall be installed as follows: In the vicinity of coniferous trees, this includes an area of a radius from the trunk equal to one and one-half times the radius of the drip line of the tree. In the vicinity of deciduous trees, this includes an area of a radius from the trunk equal to one and one-half times the radius of the drip line of the tree. For areas with shrubs plants, include the entire edge of the area planted in the fence.
C. Area within tree protection fencing must be mulched with organic bark mulch to a depth of two inches.

D. Attach orange flag strips 12 inches long at three feet on center along the fence, five feet above grade.

E. Place tree protection signs at thirty-foot intervals along fence with a minimum of one sign if the fence is less than 30 feet in length.

3.1 FENCE MAINTENANCE AND REMOVAL

A. Maintain fence in specified location and in good condition until completion of site operations and of delivery of equipment and material, except where directed otherwise in writing by Owner’s representative.

B. Fencing shall be immediately repaired when damaged.

C. Remove protection fencing at Substantial Completion.

3.2 USE OF AREA WITHIN FENCE

A. Do not use area within fence for operation, storage, vehicles, or foot traffic. Contractor shall notify Owner’s representative 24 hours in advance of the need to move a tree protection fence or access inside of it.

B. Do not alter grades within the required protective fence line except as directed during the fine grading operations at the conclusion of site development.

C. Control soil moisture within the protected area. Prevent flooding, ponding, erosion, or excessive wetting of the soil and root systems caused by dewatering operations. Protect root areas from leachate, concrete, oil, fuel, lubricating oil, and from other contaminants.

3.3 USE OF AREA ADJACENT TO FENCE

A. Do not store materials potentially harmful to tree roots within 20 feet of protected areas. Potentially harmful materials include, but are not limited to petroleum products, cement and concrete materials, cement additives, lime, paints coating, waterproofing agents, from coatings, detergents, acids, and cleaning agents.

B. All heavy equipment work to be performed within the CRZ that is not possible to protect shall be done in such a manner to minimize compaction.

1. Tie-back all flexible limbs and branches, which may be damaged during construction, under the direction of the Owner’s Arborist.

2. Use compaction mitigation strategies such as planking, mulch, or plating as directed by the Owner’s Arborist.

3.4 DAMAGES FOR LOSS OR INJURY TO TREES

A. Trees removed or damaged and deemed unviable, during demolition or construction, are to be replaced following consultation with Owner’s Arborist or approved other.
B. Trees removed during demolition or construction are to be replaced following consultation with Owner's Arborist or Owner's Representative. Appraised values of existing trees have been determined according to industry standards and will be provided by the Owner if applicable.

C. Contractor is to replace any and every tree lost or irreparably damaged as a result of failure of the Contractor to protect or to adequately maintain existing trees. Trees that fail to fully foliate in the spring following completion of construction operations may be presumed to have been lost due to construction operations.

D. In the event of injuries to the crown, trunk or root system of any tree to remain that are the result of the Contractor's failure to protect and/or maintain such tree, the Owner's Representative may elect to retain the tree and hold the Contractor liable for compensation.

E. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to Owner's Arborist's written instructions. Work required by the Owner's Arborist shall be performed by the Contractor at no additional cost to the Owner.

F. Trees, which are removed without authorization, shall be replaced with a tree of the same size and species. If a tree of the same size and species is not available the Owner's Representative shall provide alternatives. If a tree cannot be replaced because the size exceeds the maximum which can be relocated using latest technology, the Contractor shall compensate the Owner at amount equal to the appraised value.

G. Should replacement work of large trees be required as a result of Contractor's failure to protect or maintain trees, a subcontractor specializing in relocating large trees shall conduct all replacement work. Submit qualifications of tree relocation Contractor to the Owner's Representative. The cost of the subcontractor will be at the Contractor's expense.

H. Completely remove and dispose of any tree killed or irreparably damaged as a result of Contractor's failure to protect or maintain trees. Remove those trees damaged or killed as a result of vandalism, natural acts or other causes. Removal and disposal shall include stumps and roots to a depth of two feet below finished grade.

3.5 PRUNING OF EXISTING TREES

A. Limbs and branches that have been broken shall be cut off cleanly above the nearest crotch in accordance with good horticulture practice. Cut limbs and branches greater than one-half inch in diameter. Sterilize equipment with alcohol prior and during trimming and pruning operation. All pruning of damaged trees shall be carried out to the complete satisfaction of the Owner's Representative.

B. The Contractor shall provide a professional tree surgeon to assess and recommend treatment of any damage to trunks or major limbs three inches in diameter or over.

C. All existing trees to be saved shall be limbed and pruned by a licensed Arborist. Limbs shall be pruned to ensure safety and promote health of the tree. Inform the Owner's Representative prior to commencement of pruning.

3.6 EXCAVATION

A. Install shoring or other protective support systems to minimize sloping or benching of excavations.
B. Do not excavate within Tree Protection Zones, unless otherwise indicated.

C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots. Work shall be performed under the supervision of the Owner’s Arborist.

1. Redirect roots into backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately three inches back from new construction.

2. Do not allow exposed roots to dry out before placing permanent backfill. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with approved soil.
   a. Straw Mulch: Thoroughly wet excavated sub-grade where roots of existing trees to remain have been exposed. Apply four inches of wet organic bark mulch on horizontal area and wet burlap mats along exposed trench sides.
   b. Watering and Maintenance: Thoroughly and evenly water protected areas at a rate not to exceed two inches per hour during dry periods. Coordinate water procedures and schedules with the Owner’s Representative or the Project Manager. Maintain root protection procedures throughout the term of the Contract, as required.

D. Where utility trenches are required within tree protection zones, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.

1. Root Pruning: Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with sharp pruning instruments; do not break or chop.

3.7 POST CONSTRUCTION TREE MAINTENANCE

A. Ensure that existing trees remaining on the project site shall be in as good condition at completion of the work as at the commencement of the work. If such a condition does not exist at the completion of the work, assume responsibility to provide corrective actions or replacement with new material as directed by the Owner’s Representative.
SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses.
2. Drainage course for concrete slabs-on-grade.
4. Subbase course and base course for asphalt paving.
5. Subsurface drainage backfill for walls and trenches.
6. Excavating and backfilling trenches for utilities and pits for buried utility structures.

1.2 RELATED REQUIREMENTS:

A. Section 232000 Geotechnical Investigation

B. Section 311000 - Site Clearing.

C. Section 333000 Sanitary Sewer

D. Section 321216 Asphalt Paving

E. Section 321313 Concrete Paving

1.3 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Standard Specifications:


2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.

3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

1.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt and or concrete paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
   1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by ENGINEER.

F. Fill: Soil materials used to raise existing grades.

G. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D 1586.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of the following manufactured products required:
   1. Geotextiles.
   2. Controlled low-strength material, including design mixture.
   3. Warning tapes.

B. Samples for Verification: For the following products, in sizes indicated below:
   2. Warning Tape: 12 inches long; of each color.
1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D 2487.
2. Laboratory compaction curve according to ASTM D 698.

C. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.7 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

1.8 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, alleys, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify "Call Before You Dig" and the CampusLocates for area where Project is located before beginning earth moving operations.

C. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in Section 312500 "Erosion and Sediment Control," are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Obtain approval from the ENGINEER for all fill before placing soil. Satisfactory fill material shall be free of rock or gravel larger than [3 inches (75 mm)] in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; 3" minus in in compliance with the Montana Public Works...

D. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; 1.5" minus in compliance with the Montana Public Works Standard Specifications, sixth edition (MPWSS), as amended by City of Bozeman Modifications to MPWSS, latest edition.

E. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; Type 1 Pipe Bedding in compliance with the Montana Public Works Standard Specifications, sixth edition (MPWSS), as amended by City of Bozeman Modifications to MPWSS, latest edition.

F. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

G. Topsoil: Topsoil shall be free of existing sod and lawn. Imported – Friable, dark loamy soil, fertile, free from rubble, stones, clay lumps, extraneous material, and plant roots and reasonably free of weeds. Physical properties as follows:

- Clay between 7-27%
- Silt between 28-50%
- Sand less than 52%

H. Grass Seed Mixture: Seed at the minimum rate of three (3) pounds per one thousand (1000) square feet (130 lbs./acre).

<table>
<thead>
<tr>
<th>Name of Grass</th>
<th>Proportion by Weight</th>
<th>Percent Purity</th>
<th>Percent Germination</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Midnight' Kentucky bluegrass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
<tr>
<td>'Rugby II' Kentucky bluegrass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
<tr>
<td>'Ram I' Kentucky bluegrass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
<tr>
<td>'Delaware' Dwarf Peren. Rye Grass</td>
<td>25%</td>
<td>95%</td>
<td>85%</td>
</tr>
</tbody>
</table>

2.2 GEOTEXTILES

A. Separation Geotextile: Propex 350ST woven geotextile fabric, manufactured for separation applications, or approved equal.

2.3 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Self-compacting, flowable concrete material produced from the following:

1. Portland Cement: ASTM C 150, Type II or Type III.
2. Fly Ash: ASTM C 618, Class C or F.
2.4 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:

2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions.
1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

2. Pile Foundations: Stop excavations 6 to 12 inches (150 to 300 mm) above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.

3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch (25 mm). Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.


B. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots according to requirements in Section 311500 “Tree Protection”

3.8 SUBGRADE INSPECTION

A. Notify Engineer when excavations have reached required subgrade.

B. If ENGINEER determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes) to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).

2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by ENGINEER, and replace with compacted backfill or fill as directed.

3.9 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent erosion and windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.10 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.

2. Surveying locations of underground utilities for Record Documents.

3. Testing and inspecting underground utilities.

4. Removing concrete formwork.

5. Removing trash and debris.

6. Removing temporary shoring and bracing, and sheeting.

7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.11 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 SOIL FILL

A. Fill to be in compliance with the Montana Public Works Standard Specifications, sixth edition (MPWSS), as amended by City of Bozeman Modifications to MPWSS, latest edition.

3.13 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Compaction to be in compliance with the Montana Public Works Standard Specifications, sixth edition (MPWSS), as amended by City of Bozeman Modifications to MPWSS, latest edition.

B. All existing fill and deleterious material should be removed in their entirety from the proposed building footprint. All exposed subgrade surfaces should be free of mounds and depressions which could prevent uniform compaction. If unexpected fill or obstructions are encountered during site clearing or excavation, such features should be removed and the excavation should extend to the natural soils and thoroughly cleaned prior to fill placement and construction.

C. All fill and backfill should be approved by the geotechnical engineer, moisture conditioned and placed in 8-inch loose lifts. The fill and backfill should then be compacted with an appropriately sized compactor to the following minimum dry densities as determined by ASTM D698.

1. Below Foundations = 98 percent
2. Around Foundations = 95 percent
3. All Other Fill = 95 percent

D. No fill should be placed over frozen ground or in a frozen condition. All loose disturbed soil and/or fills in the base of the over-excavation should be removed from the foundation excavation prior to placement of structural fill. Footings should not be placed on either uncompacted disturbed native soils, or uncontrolled fill. Qualified personnel should observe all footing and slab subgrades to confirm subsoil conditions.

E. Imported gravel meeting the below specifications or the site soils may be used as foundation wall backfill provided proper moisture conditioning to near optimum moisture (± 2 percent) and compacted in accordance with the details presented above. If backfill is needed below foundations, only imported gravel meeting the specifications below should be used. Other imported gravel options may be used by approval of the geotechnical engineer.
F. Surface water should not be allowed to accumulate and infiltrate soils near the proposed foundations. It must be controlled and directed away from the structures. A simple means of reducing moisture changes is to prevent surface water infiltration by sloping the ground away from the foundation. The recommended minimum slope within 10 feet of the building is 1 inch vertical for 1 foot horizontal. The sloped ground should be initially constructed at a greater slope to account for settlement/consolidation of exterior backfill. Within 10 feet of the foundation, the upper 12 to 18 inches of backfill should consist of less permeable, compacted clay soils. The area around the foundation should be inspected regularly, particularly after a rain event to determine if proper drainage away from the structure has been maintained.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus [1 inch (25 mm)].
2. Walks: Plus or minus [1 inch (25 mm)].
3. Pavements: Plus or minus [1/2 inch (13 mm)].

C. Grading inside Building Lines: Finish subgrade to a tolerance of [1/2 inch (13 mm)] when tested with a 10-foot (3-m) straightedge.

3.16 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.

3.17 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

A. Place drainage course on subgrades free of mud, frost, snow, or ice.


3.18 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material and maximum lift thickness comply with requirements.
3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by ENGINEER.

E. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 4000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length, but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length, but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.
3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by ENGINEER; reshape and re-compact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

3.21 PLACING OF TOPSOIL AND SEED

A. All areas disturbed by construction, except surfaces occupied by paving and areas indicated to be undisturbed shall be restored with topsoil and seed.

B. Obtain ENGINEER's approval of rough grading before placing topsoil.

C. Relieve subgrade compaction using a fracturing, deep-tine aerifier, a high-pressure water injection aerifier, or other method approved by OWNER.

D. Scarify and place 9-10 inches minimum of topsoil. Uniformly spread layer of topsoil over areas that have been distributed. If quantity of on-site topsoil is insufficient, import off-site topsoil.

E. Level topsoil to eliminate water pockets and irregularities. Compact to 85 % Standard Proctor Density in planted areas.

F. Slope graded surfaces to drain surface water away from buildings; minimum slope 1/4 inch in 12 inches (2%).

G. Grade uniformly with rounded surfaces at tops and bottoms of abrupt changes in plane. Hand-grade steep slopes and areas that are inaccessible for machine work and areas around existing trees.

H. Protect graded areas from undue erosion. Repair and regrade if required. Refill and compact where settlement or erosion occurs. Provide hay bales and burlap as required to prevent erosion throughout project.
I. Grade areas to elevations and slopes indicated without depressions causing pocketing of surface water or humps, producing localized runoff and gullying. Ponding of water on-site is not allowed. Finish surfaces to be not more than 0.10 foot above or below established grade elevation.

J. Remove all lumps and clods prior to placing seed.

END OF SECTION 31 20 00
SECTION 31 25 00 – EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Contractor shall be fully responsible for the Storm Water Discharge Permit and fully comply with the Montana Department of Environmental Quality (DEQ) and City of Bozeman (COB) regulations in regards to Storm Water Discharges associated with Construction Activity including, but not limited to, any and all submittals, inspections, fees, reporting, training, and installation of Best Management Practices (BMP’s). CONTRACTOR shall sign all permits and forms and assumes all responsibility of management of the Storm Water Erosion Control Plan and any associated records or fines.

B. The CONTRACTOR is required to implement and adjust as required, the Storm Water Pollution Prevention Plan (SWPPP) approved by the City of Bozeman. The SWPPP must clearly address the effluent limitations and the selected BMP’s to be used to manage pollutant sources and ensure appropriate protection of state surface waters as outlined in DEQ’s General Permit for Storm Water Discharges Associated with Construction Activity (called “General Permit”). In case of conflict between this specification and the General Permit, the General permit shall prevail.

C. The site is required to reach "final stabilization" before permit coverage may be terminated. In Montana's semi-arid climate, the time necessary to achieve this "final stabilization" often requires maintenance and permit coverage well beyond the Substantial Completion phase to ensure vegetation or other site stabilization measures are in-place.

1.2 RELATED REQUIREMENTS:

A. Section 31 1000 - Site Clearing.

B. Section 31 2000 - Earth Moving.
1.3 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Standard Specifications:


2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.

3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

1.4 DEFINITIONS

A. Best Management Practices (BMPs)

1. Schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of state surface waters. BMP’s also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

B. Final stabilization

1. The time at which all soil-disturbing activities at the site have been completed, and a vegetative cover has been established with a density of at least 70% of the pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed. Final stabilization using vegetation must be accomplished using seeding mixtures or forbs, grasses, and shrubs that are adapted to the conditions of the site. Establishment of a vegetative cover capable of providing erosion control equivalent to pre-existing conditions at the site will be considered final stabilization.

1.5 SUBMITTALS
A. Prior to receiving a Notice to Proceed, contractor shall submit to the ENGINEER the following documentation:

1. a signed copy of the completed City of Bozeman Stormwater Management Permit; included at the end of this section.

B. In addition, the ENGINEER shall be copied on all documentation submitted to or received from the City of Bozeman or MSU including but not limited to notices of noncompliance, if necessary and the Notice of Termination, when submitted.

1.6 APPLICABLE LAWS AND REGULATIONS

1.7 CONTRACTOR shall fill in contractor information and sign the City of Bozeman Stormwater Management Permit for Storm Water Discharges Associated with Construction Activity (COB Permit, less than 1 acre). An approved copy of this permit is included at the end of this section.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 GENERAL

A. Permit coverage can be obtained by signing the enclosed permit and returning to the ENGINEER who will forward to the City of Bozeman

B. The CONTRACTOR will be responsible for annual renewals of the permit until “final stabilization” has occurred and the Notice of Termination (NOT) can be submitted. The CONTRACTOR must submit a NOT form when the construction activity is complete and the site has achieved “final stabilization.” ENGINEER shall be notified of any inspection made for the purpose of determining if the site has achieved final stabilization.

3.2 Inspections

A. Inspections must be performed by the CONTRACTOR. Site inspections are to be conducted after all rain events, and shall note any deficiencies and measures taken to correct. Site inspections are to be conducted during the construction project's normal working hours and the inspection schedule must be documented in the SWPPP.

3.3 Maintenance
A. All BMPs identified in the SWPPP must be maintained in effective operating condition. If site inspections identify BMPs which are not in effective operating condition, maintenance must be performed before the next storm event. If existing BMPs need to be modified, or if additional BMPs are necessary for any reason, implementation of these additional measures must be completed before the next storm event. All changes in the design, implementation, or installation of erosion and sediment control or other BMPs must be documented where applicable in the SWPPP. SWPPP changes must also be summarized in a SWPPP Revision/Update Log maintained by the CONTRACTOR. Prior to submitting a Notice of Termination, all temporary BMP’s should be removed.

3.4 Recordkeeping

A. The CONTRACTOR shall maintain a record of installed BMP’s with dates of installation/removal, inspections, and maintenance.

3.5 END OF SECTION 312500
EXTERIOR IMPROVEMENTS
SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cold milling of existing asphalt pavement.
2. Hot-mix asphalt patching.
3. Hot-mix asphalt paving.
4. Hot-mix asphalt overlay.

B. Related Requirements:

1. Section 312000 "Earth Moving" for subgrade preparation, fill material, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Standard Specifications:

2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.
3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

1.3 PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:

   a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
   b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include technical data and tested physical and performance properties.
   2. Job-Mix Designs: For each job mix proposed for the Work.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.
B. Material Test Reports: For each paving material, by a qualified testing agency.
C. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

   1. Asphalt Base Course: Minimum surface temperature of 40 deg F (4.4 deg C) and rising at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.
B. Aggregate shall meet Type B requirements of the Montana Public Works Standard Specifications, sixth edition (MPWSS).

2.2 ASPHALT MATERIALS

B. Tack Coat: ASTM D 977 or AASHTO M 140 emulsified asphalt, or ASTM D 2397 or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
C. Water: Potable.

2.3 AUXILIARY MATERIALS


2.4 MIXES

A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes; designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types"; and complying with the following requirements:


PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by ENGINEER, and replace with compacted backfill or fill as directed.

C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PATCHING

A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Re-compact existing unbound-aggregate base course to form new subgrade.

B. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

C. Placing Patch Material: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
3.3 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

3.4 PLACING HOT-MIX ASPHALT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.

2. Place hot mix in compliance with Montana Public Works Standard Specifications, sixth edition (MPWSS), as amended by City of Bozeman Modifications to MPWSS, latest edition

3.5 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Density: 92 percent of reference maximum theoretical density according to ASTM D 2041

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.6 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus or minus 1/2 inch (13 mm).
   2. Surface Course: Plus 1/4 inch (6 mm), no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:
   1. Surface Course: 1/8 inch (3 mm).
   2. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch (6 mm).

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168.
   1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
   2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
      a. Two tests will be taken for every 4000 sq. yd. or less of installed pavement, with no fewer than three cores taken.
      b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

E. Replace and compact hot-mix asphalt where core tests were taken.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.
END OF SECTION 32 12 16
SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Driveways.
   2. Roadways.
   3. Parking lots.
   4. Curbs and gutters.
   5. Walks.

1.2 RELATED REQUIREMENTS:
   1. Section 312000 Earth Moving

1.3 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Standard Specifications:
   2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.
   3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

1.4 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Action Submittals:
1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified ready-mix concrete manufacturer and testing agency.

B. Material Certificates: For the following, from manufacturer:
   1. Cementitious materials.
   2. Steel reinforcement and reinforcement accessories.
   3. Fiber reinforcement.
   4. Admixtures.
   5. Curing compounds.
   7. Bonding agent or epoxy adhesive.
   8. Joint fillers.

C. Field quality-control reports.

1.7 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

C. Concrete Testing Service: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures.

D. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

E. Pre-installation Conference: Conduct conference at Project site.

1.8 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet (30.5 m) or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.


D. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420); deformed.

E. Galvanized Reinforcing Bars: ASTM A 767/A 767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A 615/A 615M, Grade 60 (Grade 420) deformed bars.

F. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 (Grade 420) deformed bars.

G. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60 (Grade 420), deformed bars; assembled with clips.

H. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

I. Deformed-Steel Wire: ASTM A 496/A 496M.

J. Tie Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

K. Hook Bolts: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

L. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

M. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

N. Zinc Repair Material: ASTM A 780.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C 150, gray portland cement Type I.

B. Normal-Weight Aggregates: ASTM C 33,, uniformly graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 1 inch (25 mm) nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.


E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 FIBER REINFORCEMENT

A. Synthetic Fiber: Monofilament or fibrillated polypropylene fibers engineered and designed for use in concrete paving, complying with ASTM C 1116/C 1116M, Type III, [1/2 to 1-1/2 inches (13 to 38 mm)] long.

B. Fiber reinforcement required in all exterior Portland cement sidewalks and paving.

2.5 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
B. Water: Potable.

C. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

E. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.

2.6 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301 (ACI 301M), for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that meet or exceed requirements.

B. Proportion mixtures to provide normal-weight concrete with the following properties:

1. Compressive Strength (28 Days): 4000 psi (27.6 MPa).
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content: 6 percent plus or minus 1.5 percent for 1-inch (25-mm) nominal maximum aggregate size.

D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

E. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd. (0.60 kg/cu. m).

F. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M[ and ASTM C 1116/C 1116M]. Furnish batch certificates for each batch discharged and used in the Work.
1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION
   A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
   B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
   A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION
   A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
   B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT
   A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
   B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
   C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
   D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS
   A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
   1. Locate expansion joints at intervals of 50 feet (15.25 m) unless otherwise indicated.
   2. Extend joint fillers full width and depth of joint.
   3. Terminate joint filler not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished surface if joint sealant is indicated.
   4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent concrete paving:
   1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 (ACI 301M) requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
G. Consolidate concrete according to ACI 301 (ACI 301M) by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
   1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.

L. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
   1. When air temperature has fallen to or is expected to fall below 40 degree F (4.4 degree C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degree F (10 degree C) and not more than 80 degree F (27 degree C) at point of placement.
   2. Do not use frozen materials or materials containing ice or snow.
   3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

M. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and as follows when hot-weather conditions exist:
   1. Cool ingredients before mixing to maintain concrete temperature below 90 degree F (32 degree C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor’s option.
   2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.

2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch (1.6 to 3 mm) deep with a stiff-bristled broom, perpendicular to line of traffic.

### 3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer’s written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by curing compound as follows:

   1. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer’s written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

### 3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

   1. Elevation: 3/4 inch (19 mm).
   2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
   3. Surface: Gap below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/2 inch (13 mm).
   4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches (13 mm per 300 mm) of tie bar.
   5. Lateral Alignment and Spacing of Dowels: 1 inch (25 mm).
   7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches (6 mm per 300 mm) of dowel.
   8. Joint Spacing: 3 inches (75 mm).
   9. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
   10. Joint Width: Plus 1/8 inch (3 mm), no minus.
3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 25 cu. yd. or fraction thereof of each concrete mixture placed each day.

   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when it is 80 deg F (27 deg C) and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.

   a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to ENGINEER, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by ENGINEER but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by ENGINEER.
G. Concrete paving will be considered defective if it does not pass tests and inspections.

H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

I. Prepare test and inspection reports.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by ENGINEER.

B. Drill test cores, where directed by ENGINEER, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 13
UTILITIES
SECTION 33 30 00 - SANITARY SEWERS

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes waste water-collection piping and related components outside the building.

1.2 RELATED REQUIREMENTS:
A. Section 31 1000 - Site Clearing.
B. Section 31 2000 - Earth Moving.

1.3 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
B. Standard Specifications:

2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.
3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

1.4 DEFINITIONS
A. PVC: Polyvinyl chloride plastic.

1.5 ACTION SUBMITTALS
A. Product Data: For each type of product, pipe, fitting and miscellaneous fitting indicated.
B. Shop Drawings: For manholes. Include plans, elevations, sections, details, and frames and covers.
1.6 INFORMATIONAL SUBMITTALS
   A. Field quality-control reports.

1.7 QUALITY ASSURANCE
   A. Regulatory Requirements:
      2. Comply with standards of authorities having jurisdiction for waste water-service piping, including materials, installation, and testing.
   B. Piping materials shall bear label, stamp, or other markings of specified testing agency.

1.8 DELIVERY, STORAGE, AND HANDLING
   A. Do not store plastic manholes, pipe, and fittings in direct sunlight.
   B. Protect pipe, pipe fittings, and seals from dirt and damage.
   C. Handle manholes according to manufacturer's written rigging instructions.

PART 2 - PRODUCTS

2.1 MAINS, MANHOLES, CLEANOUTS, FRAMES, COVERS AND FITTINGS

PART 3 - EXECUTION

3.1 EARTHWORK
   A. Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."

3.2 PIPING INSTALLATION

3.3 MANHOLE AND CLEANOUT INSTALLATION
3.4 FIELD QUALITY CONTROL


3.5 CLEANING

A. Clean dirt and superfluous material from interior of piping.

END OF SECTION 33 30 00
GEOTECHNICAL INVESTIGATION
GEOTECHNICAL INVESTIGATION REPORT

OFF SITE SEWER MAIN
NORM ASBJORNSON INNOVATION CENTER
MONTANA STATE UNIVERSITY
BOZEMAN, MT

Prepared for:

a&e
ARCHITECTS

Mr. Dusty Eaton, AIA, LEED AP, Principal
608 North 29th St.
Billings, MT 59101

Prepared by:

DOWL

2090 Stadium Drive
Bozeman, MT 59715

Principal Author: Gregory C. Underhill, P.E.
Reviewed by: David J. Barrick, P.E.

March 4, 2016
4522.11447.01
TABLE OF CONTENTS

1 PURPOSE OF INVESTIGATION ........................................................................................................... 1

1.1 SEWER LINE INSTALLATION .................................................................................................... 1

2 FIELD AND LABORATORY INVESTIGATIONS ............................................................................. 3

2.1 FIELD EXPLORATION .............................................................................................................. 3

2.2 LABORATORY TESTING ............................................................................................................ 3

3 SUBSURFACE CONDITIONS ......................................................................................................... 4

3.1 LOCAL GEOMORPHIC AND GEOLOGIC SETTING .................................................................. 4

3.2 SUBSURFACE PROFILES ......................................................................................................... 4

3.3 GROUNDWATER ...................................................................................................................... 5

4 ANALYSIS AND RECOMMENDATIONS ...................................................................................... 6

4.1 EXCAVATION .......................................................................................................................... 6

4.2 DEWATERING ........................................................................................................................... 6

4.2.1 Potentially Affected Areas .................................................................................................... 6

4.2.2 General Methodology ......................................................................................................... 7

4.3 TRENCH WALL STABILITY .................................................................................................... 7

4.4 TRENCH FLOOR STABILITY .................................................................................................. 8

4.5 PIPE BEDDING AND PIPE ZONE BACKFILL ........................................................................ 8

4.6 TRENCH BACKFILL ................................................................................................................ 9

4.7 COMPACTION CONSIDERATIONS ......................................................................................... 10

4.8 OTHER CONSIDERATIONS ................................................................................................. 10

5 LIMITATIONS .................................................................................................................................. 11

LIST OF TABLES

Table 1 – Asphalt and Base Course Thickness .................................................................................... 5
Table 2 – Depth to Groundwater ......................................................................................................... 6

LIST OF FIGURES

Figure 1 – Boring Location / Site Map ............................................................................................... 2

APPENDICES

APPENDIX A Logs of Exploration Boreholes
APPENDIX B Laboratory Test Results
APPENDIX C Photographic Log
1 PURPOSE OF INVESTIGATION

This investigation was performed to obtain knowledge of the subsoil conditions along the alignment of the proposed sewer main for the campus of Montana State University (MSU) located in Bozeman, Montana (see Figure 1). The sewer main will be installed in association with the proposed Norm Asbjornson Innovation Center (NAIC). The planned NAIC will be constructed at the intersection of West Grant Street and South 7th Avenue. The new sewer main will extend east from South 7th Avenue to South Wilson Avenue.

Results of the field and laboratory investigations were used to analyze the engineering characteristics of the soils and prepare recommendations pertinent to the design and construction of the proposed project.

1.1 SEWER LINE INSTALLATION

The proposed sewer main will consist of 10-inch diameter, polyvinyl chloride (PVC) gravity sewer pipe buried approximately 10 to 15 feet deep. Approximately nine (9) manholes will be installed with invert depths ranging from approximately 10 to 15 feet. The sewer line will extend from the planned NAIC Building site to a connection with the City of Bozeman sanitary sewer located at the intersection of Wilson Avenue and Lincoln Street. The sewer main alignment is located along the Lincoln Street dedicated right-of-way (ROW) and on MSU properties as shown in Figure 1. The sewer main would be capable of serving infrastructure between the Brick Breeden Fieldhouse and South 7th Avenue. The corridor contains a number of trees and heavily vegetated areas as well as numerous buried utilities.
NORM ASBJORNSON INNOVATION CENTER
MONTANA STATE UNIVERSITY

LEGEND

OFF-SITE SANITARY SEWER GEOTECHNICAL INVESTIGATION BORING LOCATION / SITE MAP
2 FIELD AND LABORATORY INVESTIGATIONS

2.1 FIELD EXPLORATION

The field investigation included a geologic review of the area and geotechnical drilling. On December 17, 2015 a total of five (5) exploration boreholes (B-1 through B-5) were completed at locations are shown on Figure 1. The boreholes were advanced along the proposed sewer main alignment and were drilled to depths ranging from 16.5 to 21.5 feet.

The borings were completed under the direction and supervision of a DOWL geotechnical engineer. Drilling was completed with a Boart Longyear BK-81 truck mounted drill rig operated by HazTech Drilling of Billings, Montana. The borings were advanced using 4.25 inch ID hollow stem augers. As the drilling progressed, groundwater conditions were observed and soil samples were taken for field classification (ASTM D 2488). All boreholes were backfill with auger drill cuttings. Boreholes located in asphalt pavement were backfilled and sealed with asphalt cold patch.

Standard penetration resistance tests (“N” values) were conducted in each of the boreholes to obtain soil (split spoon) samples and to provide an indication of the relative density and strength of the subsoil (ASTM D 1586). Several disturbed samples were also recovered from the drill cuttings. All samples were carefully sealed in plastic to preserve the natural moisture content. The soil samples recovered during the exploration drillings were then taken to our laboratory where they were subsequently analyzed in-house.

Continuous logs of the borings were completed during the investigation to record groundwater and soil stratigraphy characteristics and are included in Appendix A. The soil descriptions shown on the boring logs are based on field and laboratory testing in accordance with ASTM Standards D 2487 or D 2488. The stratigraphic contacts shown on the individual boring logs represent the approximate boundaries between soil types at the boring location only. The actual transitions may be more gradual or abrupt. The soil and groundwater conditions depicted are only for the specific dates and locations reported, and therefore, are not necessarily representative of other locations and times. Photographs of each boring location are also included in Appendix C.

2.2 LABORATORY TESTING

Laboratory tests were conducted on selected soil samples to characterize the index and engineering properties of the soils along the proposed sewer main alignment. It is noted that samples were predominately taken of the clay, sand, and gravel fractions. Large cobbles and boulders were not included in the test samples. Index tests included natural moisture content, grain size distribution, and Atterberg limits. Engineering property tests included moisture-
density relationship. The tests were performed in general accordance with the most recent ASTM or other procedures standard to the industry. Laboratory test results are detailed in Appendix B.

3 SUBSURFACE CONDITIONS

This section describes the general subsurface conditions along the project alignment. Interpretations of the subsurface conditions are based on site reconnaissance, subsurface exploration and available geologic maps.

3.1 LOCAL GEOMORPHIC AND GEOLOGIC SETTING

The Gallatin Valley is an intermountain basin in the Rocky Mountains bounded by the Bridger and Gallatin Ranges to the east and south. The Gallatin Mountain Range has provided material for vast coalescing alluvial fans deposited upon the valley floor from the south and east valley limits, sloping rather steeply to the north. These alluvial/fluviatile deposits range from Tertiary to Quaternary in age. The project site is located on the MSU campus south of downtown Bozeman which is situated in the southeast extremity of the Gallatin Valley on Quaternary alluvial fan deposits known as the Bozeman Fan. The alluvial fan deposits typically consist of varying thickness depositional clay, sand and gravels. Tertiary age fluviatile and soft bedrock strata underlay the alluvial fan deposits at varying depths and locations.

3.2 SUBSURFACE PROFILES

The soil profiles encountered in each boring were relatively similar and generally consisted of a section of asphalt pavement overlying road base or variable composition fill followed by native lean clay with variable amounts of sand. Poorly graded gravel with clay, sand and cobbles underlies the native lean clay.

**Asphalt Pavement:** Asphalt thickness varied across the site from approximately 6 inch to 7 inches. The asphalt thickness encountered at Boring B-5 was located off the shoulder of South Wilson Avenue. The asphalt thickness encountered at the B-5 location was 1 inch. This thickness is not representative of the asphalt section at the manhole location in South Wilson Avenue. Clean well graded gravel or well graded sand with gravel base course was generally present under the asphalt. Table 1 presents the asphalt and underlying base course thickness encountered at the boring locations:
TABLE 1
ASPHALT AND BASE COURSE THICKNESS
MSU Off-Site Sewer Main

<table>
<thead>
<tr>
<th>Boring</th>
<th>Asphalt Thickness (inches)</th>
<th>Base Course Thickness (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>7.0</td>
<td>6.0</td>
</tr>
<tr>
<td>B-2</td>
<td>6.5</td>
<td>1.5</td>
</tr>
<tr>
<td>B-3</td>
<td>6.5</td>
<td>2.5</td>
</tr>
<tr>
<td>B-4</td>
<td>6.0</td>
<td>5.0</td>
</tr>
<tr>
<td>B-5</td>
<td>*1.0</td>
<td>Not Encountered</td>
</tr>
</tbody>
</table>

*located off the road shoulder

**Fill**: Fill was encountered in two of the five borings (B-4 and B-5) beneath the asphalt pavement or base course. The majority of the fill consisted of lean clay with variable amounts of sand and gravel. The moisture of the fill was typically moist to very moist and was frozen at the time of the investigation.

**Native Lean Clay**: Native lean clay with variable amounts sand was encountered at depths ranging from 0.7 to 17.0 feet. Consistency of this zone was medium stiff to very stiff with moisture contents ranging from 17.8% to 32.7%. One moisture density relationship test shows a maximum dry density of 110.3 pounds per cubic foot (pcf) and an optimum moisture content of 15.7%. The color of the lean clay was brown with minor light brown or dark gray zones. The lean clay was typically above the optimum moisture content.

**Poorly Graded Gravel with Clay, Sand and Cobbles**: Depth to the poorly graded gravel with clay and sand ranged from 8.0 to 17.0 below the existing ground surface. The relative density of the gravel was dense to very dense. The groundwater table was typically encountered within this zone. Gravel within the groundwater table areas will be saturated. Cobbles and boulders may exist within the gravel deposits.

### 3.3 GROUNDWATER

Groundwater was encountered in four of the five advanced borings. Table 2 presents the depth to groundwater in the boreholes at the time of the investigation. Groundwater was observed at depths ranging from 9.2 to 19.3 feet below the ground surface. The groundwater table was typically observed within the dense to very dense poorly graded gravel strata. Depth to groundwater along the sewer main alignment typically becomes shallower towards South Wilson Avenue. The groundwater elevation is above the manhole invert elevation at South Wilson Avenue.
### TABLE 2
**DEPTH TO GROUNDWATER**
**MSU Off-Site Sewer Main**

<table>
<thead>
<tr>
<th>Boring</th>
<th>Boring Surface Elevation (feet)</th>
<th>*Depth to Groundwater (feet)</th>
<th>Approximate Groundwater Elevation (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>4,924.1</td>
<td>Not Encountered</td>
<td>--</td>
</tr>
<tr>
<td>B-2</td>
<td>4,922.0</td>
<td>19.3</td>
<td>4,902.7</td>
</tr>
<tr>
<td>B-3</td>
<td>4,916.6</td>
<td>14.7</td>
<td>4,901.9</td>
</tr>
<tr>
<td>B-4</td>
<td>4,909.8</td>
<td>11.8</td>
<td>4,898.1</td>
</tr>
<tr>
<td>B-5</td>
<td>4,894.9</td>
<td>9.2</td>
<td>4,885.7</td>
</tr>
</tbody>
</table>

*Elevations measured December 2015

*Fluctuations of groundwater will occur due to seasonal moisture conditions, irrigation practices, changes in land use and many other factors. Groundwater levels will vary from those shown depending upon the influence of these factors.*

### 4 ANALYSIS AND RECOMMENDATIONS

Geotechnical engineering considerations associated with construction of the proposed sanitary sewer main are excavation, dewatering, trench wall stability, trench floor stability, pipe bedding and pipe zone backfill, and trench backfill. These considerations are discussed in the following sections.

#### 4.1 EXCAVATION

The material to be excavated along the alignment generally consisted of lean clay with variable amounts of sand overlying dense to very dense poorly graded gravel with clay and sand. Asphalt pavement and base course will be encountered throughout much of the alignment. It is noted that the majority of the clay soils within excavation depths are wet of optimum moisture and compaction will be difficult if not impractical unless the soils are dried.

#### 4.2 DEWATERING

##### 4.2.1 Potentially Affected Areas

Groundwater was encountered at four of the five boring locations. The groundwater table was encountered typically in the dense to very dense poorly graded gravel with clay and sand strata. During the investigation, the groundwater table became shallower relative the existing ground surface as the alignment progressed east toward Wilson Avenue. Groundwater dewatering should be anticipated along the alignment between South 3rd Avenue and South Wilson Avenue. Dewatering may be required at other locations. Dependent upon the time of year significant
fluctuations in the groundwater elevation are common, particularly in sands and gravels. It is noted that groundwater elevations were typically at the seasonal low during the time of this investigation on December 17, 2016.

4.2.2 General Methodology

The groundwater should be drawn down below the trench floor during placement of the sanitary sewer main. The groundwater should also be kept below the trench floor during the backfilling process until pipes are placed and backfill is above the groundwater elevation. This will aid in achieving compaction and maintaining pipe alignment.

In-trench sump pumps may be applicable dependent on the groundwater elevation and inflows at the time of construction. A well-point system is also a common but more intensive method of dewatering during construction. This method, which dewater from outside the excavation, reduces the risk of trench wall sloughing and bottom heave and has the potential of lowering the water table below the trench floor.

Some dewatering from within the trench may be possible depending upon the groundwater elevation at the time of construction and the soil type. This method should be used only when a minor amount of dewatering is necessary. Dewatering from within the trench is usually not effective if the groundwater table is higher than 1 ½ feet above the trench bottom. This method has a greater risk of trench-wall sloughing and trench-floor heave. Where excavations are dewatered from within the trench, the trench floors and walls will remain saturated.

Inadequate dewatering may result in unstable trench wall and bottom conditions requiring over-excavation and placement of gravel to stabilize the trench bottom. Proper compaction of bedding material will not be possible if adequate dewatering is not accomplished.

Care should be taken during dewatering to ensure that adjacent structures are not damaged. Excessive dewatering of saturated clayey and sandy soils may initiate consolidation of load bearing soils beneath foundations. Depending on the magnitude of dewatering, staged dewatering zones may be needed to reduce settlements of local structures. The dewatering methods selected and utilized for construction should be designed and monitored by a qualified professional.

4.3 TRENCH WALL STABILITY

Soils along the alignment are granular and non-granular and generally range from medium stiff to very stiff in consistency and dense to very dense in relative density. In addition, groundwater will reduce the stability of soil excavations. All temporary excavations must be in conformance with the Montana Public Works (MPW) Standard Specifications (MPWSS, 2010) Section 02221,
and OSHA regulations 1926.652, Appendix B to Subpart P.

Because of space constraints trench boxes will most likely be utilized for all construction areas. Trench boxes must conform and be utilized according to OSHA regulations.

Based upon the soil types encountered in the test pits at the time of this investigation, soils within the trench excavations likely could be classified as Type C soil, dependent upon ground moisture conditions, according to OSHA regulations. However, subsurface variations between borings may not become evident until construction. Therefore, soil and moisture conditions should be continually evaluated at the time of construction to ensure compliance with OSHA requirements. The contractor should have a designated safety officer familiar with soils to monitor trench wall conditions during construction. Trench wall stability and compliance with OSHA requirements is the Contractor’s responsibility.

4.4 TRENCH FLOOR STABILITY

The field investigation did not indicate any areas with potential trench bottom instability. It is anticipated that native lean clay with variable amounts of sand or poorly graded gravel with clay and sand along the entire sewer main alignment but conditions may vary. Unstable trench floor conditions may occur at other areas during construction of the project. It is beyond the scope of this report to try and identify all areas where instability could occur. Particularly considering that construction means and methods are a significant factor in regard to trench floor stability problems. Over excavation and placement of MPW Type 2 Pipe Bedding to stabilize the trench bottom is recommended if unstable trench bottom conditions are encountered. Proper dewatering is also critical to maintain trench bottom stability during pipe placement.

Trench floor instability could occur from differential hydrostatic pressure and resulting heave of the clay trench bottom soils. Upon excavation, a thin layer of clay will exist between the pipe invert and underlying native gravels. This condition will occur along the alignment between South 3rd Avenue and South Wilson Avenue. The clay soils exhibit low permeability while the underlying gravels exhibit high permeability. If groundwater is elevated much above the trench bottom during excavation and dewatering is conducted from within the trench excavation there is a potential for differential hydrostatic pressure to heave the clay bottom thus moving the pipe invert prior to backfilling.

4.5 PIPE BEDDING AND PIPE ZONE BACKFILL

Competent pipe bedding material serves to support the pipe and the overlying trench backfill material and it provides protection to the pipe from large rocks or sharp objects during backfilling of the trench. As such, the pipe bedding material should have the following characteristics:
- High strength and low compressibility - to minimize pipe deflections from loading by the backfill materials; and
- Easily placed and compacted - to facilitate placement of the material under the haunches of the pipe where access with compacting equipment is difficult.

In addition, the bedding material should have no large stones that could damage the pipe during placement, and it should be non-moisture sensitive so that moisture that may be present in the bottom of the trench will not affect the compatibility of the bedding. Pipe bedding should conform to manufacturer’s recommendations for specific pipe materials. Bedding placement should conform to manufactures guidelines and the contract special provisions. The bedding material should be workable enough to allow precise setting of the pipe grade and position. Pipe joints should be held secure during the initial backfilling to help maintain the desired alignment and integrity of the system.

Bedding requirements that generally follow Montana Public Works Standard Specifications (MPW April, 2010, Sixth Edition, Section 02221) are recommended. Soils within the pipe zone location will consist of gravel with cobbles and boulders. To provide adequate protection to the PVC pipe, it is recommended that the pipe be fully enveloped with ¾-inch minus granular bedding material. The envelope should extend a minimum distance of one foot beyond the pipe in all directions. It may be feasible to utilize onsite gravel at the facility site if processed properly. However, the gradation specification should be approved by the Engineer prior to full scale production. The bedding material should be workable enough to allow precise setting of the pipe grade and position. Pipe joints should be held secure during the initial backfilling to help maintain the desired alignment and integrity of the system.

4.6 TRENCH BACKFILL

Trench backfill will consist of material excavated from the trenches. This material is discussed in section 3.2. This material consists of lean clay with variable amounts of sand or poorly graded gravel with clay and sand. The lean clay is typically above optimum moisture and drying may be required in order to allow proper compaction of this material. Cobbles and boulders may be encountered in the poorly graded gravel. This material will generally be suitable as backfill with appropriate processing to meet the required specifications. Zones of fill materials existed throughout the proposed construction site. All fill material will have to be considered during construction to determine if suitable for backfill.

Trench backfill materials should, comply with MPW Section 02221 Article 3.6.C.

Trench backfill should be placed and compacted in accordance with MPW Specifications for:
Type A Trench Backfill. This includes placement in 8-inch compacted lifts throughout the full trench depth to a minimum of 95 percent of maximum dry density within 3 percent of optimum moisture content as determined by ASTM D 698 Materials which do not exhibit typical well defined moisture density curve, should be compacted to 70 percent relative density according to ASTM D 4253 and D 4254. Cohesive soils (clay) when used as backfill, should be compacted utilizing a tamping foot-type compactor. Cohesionless soils (sand and gravel) should be compacted utilizing vibratory rolling equipment. Backfill should be approved by the geotechnical engineer. Type A trench backfill is recommended in all streets, parking lots and paved areas.

Type B Trench Backfill. This includes placement in 8-inch compacted lifts throughout the full trench depth to a minimum of 90 percent of maximum dry density within 3 percent of optimum moisture content as determined by ASTM D 698 Materials which do not exhibit typical well defined moisture density curve, should be compacted to 68 percent relative density according to ASTM D 4253 and D 4254. Cohesive soils (clay) when used as backfill, should be compacted with a tamping foot-type compactor. Cohesionless soils (sand and gravel) should be compacted utilizing vibratory rolling equipment. Backfill should be approved by the geotechnical engineer. Type B trench backfill is recommended for unpaved alleys, unimproved streets, other unsurfaced areas, and other areas where compaction is less critical.

Hand tampers may be utilized for compaction adjacent to the pipe; however, soil lifts should not exceed 4 inches when utilizing hand tamping compaction equipment. The following considerations should be recognized as pertinent to the construction of the project.

4.7 COMPAC TION CONSIDERATIONS

All fill and backfill should be moisture conditioned and placed in appropriate loose lift thickness to allow proper compaction throughout the entire lift. The fill and backfill should be compacted with an appropriately sized compactor to the following minimum dry densities at plus or minus 2 percent of optimum moisture content as determined by ASTM D698.

- Below Foundations = 98 percent
- Around Structures = 95 percent
- Under Pavements = 95 percent
- Landscaped areas = 90 percent

4.8 OTHER CONSIDERATIONS

The following considerations should be recognized as pertinent to the construction of the project.

- Subsurface conditions may vary from those shown on logs of borings;
- Damage to adjacent structures could result from trench excavations and dewatering; and
• Condition of structures adjacent to sewer extension excavation areas should be documented prior to construction.

Subsurface conditions identified in this report are based on information gained from a limited number of exploration borings and may vary between boring locations. Because the soils are primarily alluvial, the material characteristics may vary significantly within the project alignment. Additionally, past fill areas that are encountered by the excavation may create exceptions to the soil conditions identified herein.

Adequate clearance between the trench excavation and any adjacent structures must be maintained to avoid undermining adjacent foundations and causing damage due to settlement. When necessary, excavation walls should be shored and braced. Care should be taken when utilizing heavy vibratory compaction equipment directly adjacent to building foundations.

Before any construction work is started, we recommend a survey of all structures along the sewer extension route. Cracks in the existing foundation walls and settlements should be documented. Features such as poor drainage, street cracks and leaning fences should be noted. Thorough documentation of existing site conditions should allow monitoring of potential problems before irreversible damage results.

5 LIMITATIONS

The conclusions and recommendations presented in this report assume that site conditions are not substantially different than those exposed by the explorations. If during construction, subsurface conditions are observed or appear to be present that are different from those encountered in the explorations, DOWL should be advised promptly so that those conditions can be reviewed and recommendations reevaluated, where necessary.

If there is a substantial lapse of time between submission of this report and the start of work, and if conditions have changed due to natural causes or construction operations, DOWL should be contacted review this report to determine the applicability of the conclusions and recommendations considering the changed conditions.

This report was prepared for the use by Owner and their representatives for this project. It should be made available to prospective contractors for information on factual data only and not as a warranty of subsurface conditions.

These services have been performed in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in this area under similar conditions. No warranty is made or implied.
Any conclusions by a construction contractor or bidder relating to construction means, methods, techniques, sequences, or costs based upon the information provided in this report are not the responsibility of the Owner or DOWL.
APPENDIX A

OFF-SITE SANITARY SEWER
LOGS OF EXPLORATION BOREHOLES
SOIL CLASSIFICATION/LEGEND

Unified Soil Classification System

<table>
<thead>
<tr>
<th>Criteria for Assigning Group Symbols and Names</th>
<th>Soil Classification Generalized Group Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve</td>
<td>CLEAN GRAVELS Less than 5% fines</td>
</tr>
<tr>
<td>SANDS 50% or more of coarse fraction passes No. 4 sieve</td>
<td>CLEAN SANDS Less than 5% fines</td>
</tr>
<tr>
<td>FINE-GRAINED SOILS 50% or more passes the No. 200 sieve</td>
<td>INORGANIC Liquid limit less than 50</td>
</tr>
<tr>
<td>HIGHLY ORGANIC SOILS</td>
<td>Primarily organic matter, dark in color and has an organic odor</td>
</tr>
</tbody>
</table>

Component Definitions By Gradation

<table>
<thead>
<tr>
<th>Component</th>
<th>Size Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boulders</td>
<td>Greater than 12-in.</td>
</tr>
<tr>
<td>Cobble</td>
<td>3-in. to 12-in.</td>
</tr>
<tr>
<td>Gravel</td>
<td>3-in. to No. 4 (4.75 mm)</td>
</tr>
<tr>
<td>Coarse gravel</td>
<td>3-in. to ¾-in.</td>
</tr>
<tr>
<td>Fine gravel</td>
<td>¾-in. to No. 4 (4.75 mm)</td>
</tr>
<tr>
<td>Sand</td>
<td>No. 4 (4.75 mm) to No. 200 (0.075 mm)</td>
</tr>
<tr>
<td>Coarse sand</td>
<td>No. 4 (4.75 mm) to No. 10 (2.0 mm)</td>
</tr>
<tr>
<td>Medium sand</td>
<td>No. 10 (2.0 mm) to No. 40 (0.425 mm)</td>
</tr>
<tr>
<td>Fine sand</td>
<td>No. 40 (0.425 mm) to No. 200 (0.074 mm)</td>
</tr>
<tr>
<td>Silt and Clay</td>
<td>Smaller than No. 200 (0.075 mm)</td>
</tr>
</tbody>
</table>

Silt and Clay Descriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Typical Unified Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silt</td>
<td>CL-ML (low plasticity)</td>
</tr>
<tr>
<td>Clayey Silt</td>
<td>CL</td>
</tr>
<tr>
<td>Silty Clay, Lean Clay</td>
<td>CH</td>
</tr>
<tr>
<td>Clay, Fat Clay</td>
<td>MH</td>
</tr>
<tr>
<td>Plastic Silt</td>
<td>OL</td>
</tr>
<tr>
<td>Organic Clays</td>
<td>Pt</td>
</tr>
</tbody>
</table>

Descriptive Terminology Denoting Components Proportions

<table>
<thead>
<tr>
<th>Descriptive Terms</th>
<th>Range of Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace or Scattered</td>
<td>0 - 5%</td>
</tr>
<tr>
<td>Few</td>
<td>5 - 10%</td>
</tr>
<tr>
<td>Some or Adjective</td>
<td>15 - 30%</td>
</tr>
<tr>
<td>And</td>
<td>30 - 50%</td>
</tr>
</tbody>
</table>

(a) Use gravelly, sandy or silty as appropriate.

Groundwater Elevation

- Water Elevation Noted During Drilling
- Water Elevation Recorded After Drilling Complete

Soil Moisture

- Dry: No sign of water dry to the touch
- Slightly Moist: Dry of the optimum moisture content
- Moist: Approximately at optimum moisture
- Very Moist: Moisture content above optimum but below saturated
- Wet: Wet of optimum to saturated

Samples

- Split Spoon Sampler (2.0" OD)
- Ring Sampler (3.0" OD) *
- Shelby Tube Sampler (3.0" OD)
- Bulk Sample (auger cuttings)
- Core Barrel

*Indicates increased blow counts due to sampler size.

Unless otherwise noted, drive samples advanced with 140-lb. hammer and 30-in. drop.

3/2/2015
<table>
<thead>
<tr>
<th>DEPTH (FT.)</th>
<th>MATERIAL DESCRIPTION</th>
<th>GRAPHIC LOG</th>
<th>ELEVATION (FT.)</th>
<th>BULK BLOWS PER 6&quot;</th>
<th>N BLOWS/FT</th>
<th>NUMBER</th>
<th>IN. RECOVERED</th>
<th>IN. DRIVEN</th>
<th>POCKET PENTETER TSF</th>
<th>N VALUE</th>
<th>BLOWS/FT</th>
<th>PL</th>
<th>LL</th>
<th>M.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>7&quot; Asphalt Pavement, black</td>
<td>4923.52</td>
<td></td>
<td>15</td>
<td>9</td>
<td>4</td>
<td>10/18</td>
<td>56%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>6&quot; Road Base, Well Graded Gravel with Sand, GW; moist, brown, sub angular gravel, fine to coarse grained sand, 3/4&quot; minus</td>
<td>4923.02</td>
<td></td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>8/18</td>
<td>44%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0</td>
<td>Sandy Lean Clay, CL; moist to very moist, very stiff, brown, fine to medium grained sand</td>
<td>4910.12</td>
<td></td>
<td>6</td>
<td>8</td>
<td>18</td>
<td>19/18</td>
<td>106%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.0</td>
<td>Poorly Graded Gravel with Clay and Sand, GP-GC; moist, very dense, brown, sub rounded gravel, fine to coarse grained sand</td>
<td>4907.12</td>
<td></td>
<td>50/10</td>
<td>5</td>
<td>4</td>
<td>2/4</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Surface Elevation: 4924.12

Brown at 10.0 feet

Lab #8364
Nat. Moisture=20.0%

Lab #8365
Nat. Moisture=19.4%

Lab #8366
Nat. Moisture=19.0%

Boring terminated at 20.3 feet

No groundwater observed
6.5" Asphalt Pavement, black
1.5" Road Base, Well Graded Sand with Gravel, SW; moist, dark brown, sub angular gravel, fine to coarse grained sand, 1/2" minus

Lean Clay, CL; moist to very moist, medium stiff, brown

Lean Clay with Sand, CL; moist to very moist, medium stiff, brown, fine grained sand

Poorly Graded Gravel with Clay and Sand, GP-GC; moist to wet, very dense, brown to dark brown, sub rounded gravel, fine to coarse grained sand

Groundwater observed at 19.3 feet
dense at 20.0 feet

Boring terminated at 21.5 feet

Groundwater observed at 19.3 feet
LOG OF BOREHOLE B-3

MATERIAL DESCRIPTION

Surface Elevation: 4916.60

0.0
6.5" Asphalt Pavement, black

2.5" Road Base, Well Graded Gravel with Sand, GW; moist, dark brown to brown, sub angular gravel, fine to coarse grained sand, 1/2" minus

0.8
Lean Clay with Sand, CL; moist to very moist, stiff, dark gray to brown, fine grained sand brown at 2.1 feet

medium stiff at 5.0 feet

3.5

12.5
Poorly Graded Gravel with Clay and Sand, GP-GC; very moist to wet, very dense, dark brown, sub rounded gravel, fine to coarse grained sand

Groundwater observed at 14.7 feet

14.0

16.5
Boring terminated at 16.5 feet

Groundwater observed at 14.7 feet

17.5

21.0

24.5

MONTANA DEPARTMENT OF ADMINISTRATION

PROJECT

MSU Norm Asbjornson Innovation Center - Sewer Line

LOG OF BOREHOLE B-3

CLINT

PROJECT

CLIENT

Montana Department of Administration

PROJECT

MSU Norm Asbjornson Innovation Center - Sewer Line

BORING LOCATION

South 5th Avenue

SITE

Montana State University

DOWL

2090 Stadium Drive
Bozeman, Montana 59715
Telephone: (406) 586-8834
www.dowl.com

STARTED 12/17/2015
FINISHED 12/17/2015

DOWL

2090 Stadium Drive
Bozeman, Montana 59715
Telephone: (406) 586-8834
www.dowl.com

DRILL CO.
HazTech

DRILL RIG Longyear BK-81

DRILLER
Paul Bray

HAMMER Auto

LOGGED BY D. Barrick

APPROVED BY G. Underhill

Lab #3869

Nat. Moisture=22.3%

Lab #3870

Nat. Moisture=23.1%
### MATERIAL DESCRIPTION

<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>ELEVATION (FT)</th>
<th>GRAPHIC LOG</th>
<th>MATERIAL DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4909.38</td>
<td>6&quot;</td>
<td>Asphalt Pavement, black</td>
</tr>
<tr>
<td>0.5</td>
<td>4909.38</td>
<td>5&quot;</td>
<td>Road Base, Well Graded Gravel with Sand, GW; moist, brown, sub rounded to sub angular gravel, fine to coarse grained sand, 1&quot; minus</td>
</tr>
<tr>
<td>0.5</td>
<td>4908.98</td>
<td>5&quot;</td>
<td>Road Base, Well Graded Gravel with Sand, GW; moist, brown, sub rounded to sub angular gravel, fine to coarse grained sand, 1&quot; minus</td>
</tr>
<tr>
<td>3.5</td>
<td>4907.98</td>
<td>1&quot;</td>
<td>Lean Clay with Sand, CL; moist to very moist, stiff, gray to brown, sub rounded gravel, fine to coarse grained sand, frozen</td>
</tr>
<tr>
<td>3.5</td>
<td>4907.98</td>
<td>1&quot;</td>
<td>Lean Clay with Sand, CL; moist to very moist, stiff, gray to brown, sub rounded gravel, fine to coarse grained sand, frozen</td>
</tr>
<tr>
<td>10.5</td>
<td>4898.78</td>
<td>10</td>
<td>Poorly Graded Gravel with Clay and Sand, GP-GC; moist to wet, medium dense to dense, brown to multi-colored, sub rounded gravel, fine to coarse grained sand</td>
</tr>
<tr>
<td>10.5</td>
<td>4898.78</td>
<td>10</td>
<td>Poorly Graded Gravel with Clay and Sand, GP-GC; moist to wet, medium dense to dense, brown to multi-colored, sub rounded gravel, fine to coarse grained sand</td>
</tr>
<tr>
<td>16.5</td>
<td>4893.38</td>
<td>16</td>
<td>Boring terminated at 16.5 feet</td>
</tr>
<tr>
<td>17.5</td>
<td>4892.53</td>
<td>17</td>
<td>Groundwater observed at 11.8 feet</td>
</tr>
</tbody>
</table>

### ADDITIONAL DATA / REMARKS

- Lab #8371
  - USCS=CL
  - Gravel=3%
  - Sand=14%
  - Fines=83%
  - Liquid Limit=33
  - Plasticity Index=12
  - Max Dry Unit Weight= 110.3 pcf
  - Opt. Moisture=15.7%
  - Nat. Moisture=22.1%
  - Gravel stuck in split-spoon opening

- Lab #8372
  - Nat. Moisture=17.8%

- Lab #8373
  - Nat. Moisture=32.7%
<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>MATERIAL DESCRIPTION</th>
<th>GRAPHIC LOG</th>
<th>ELEVATION (FT)</th>
<th>BULK SAMPLES</th>
<th>SAMPLES</th>
<th>PL</th>
<th>LL</th>
<th>PL</th>
<th>LL</th>
<th>M.C.</th>
<th>ADDITIONAL DATA/REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1&quot; Asphalt Pavement, black</td>
<td></td>
<td>4894.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lab #8374 Nat. Moisture=24.4%</td>
</tr>
<tr>
<td>0.1</td>
<td>Fill, Lean Clay, CL; very moist, very stiff, black, high organic content, frozen</td>
<td></td>
<td>4894.3</td>
<td>9</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.6</td>
<td>Fill, Gravelly Lean Clay, CL; moist to very moist, very stiff, dark brown, sub rounded gravel, frozen</td>
<td></td>
<td>4893</td>
<td>10</td>
<td>18</td>
<td>11/18</td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Fill, Poorly Graded Gravel with Clay and Sand, GP-GC; moist, medium dense, dark brown to black, sub rounded gravel, fine to coarse grained sand</td>
<td></td>
<td>4893.9</td>
<td>2</td>
<td>12</td>
<td>11/18</td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>Lean Clay, CL; very moist, stiff, brown, minor sub angular gravel</td>
<td></td>
<td>4891.9</td>
<td>6</td>
<td>6</td>
<td>11/18</td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td>Poorly Graded Gravel with Clay and Sand, GP-GC; very moist to wet, dense, dark brown rounded to sub rounded gravel, fine to coarse grained sand</td>
<td></td>
<td>4886</td>
<td>2</td>
<td>12</td>
<td>11/18</td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.0</td>
<td>Groundwater observed at 9.2 feet</td>
<td></td>
<td>4886</td>
<td>13</td>
<td>35</td>
<td>13/18</td>
<td>72%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td>Groundwater observed at 9.2 feet</td>
<td></td>
<td>4882.5</td>
<td>18</td>
<td>35</td>
<td>13/18</td>
<td>72%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.0</td>
<td>Silty Sand, SM; very moist to wet, medium dense, reddish brown, fine to medium grained sand, clayey in part</td>
<td></td>
<td>4881.9</td>
<td>18</td>
<td>35</td>
<td>13/18</td>
<td>72%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td>Boring terminated at 16.5 feet</td>
<td></td>
<td>4879</td>
<td>7</td>
<td>22</td>
<td>18/18</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.5</td>
<td>Groundwater observed at 9.2 feet</td>
<td></td>
<td>4879</td>
<td>10</td>
<td>12</td>
<td>18/18</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Surface Elevation: 4894.90
APPENDIX B

OFF-SITE SANITARY SEWER
LABORATORY TEST RESULTS
## OFF-SITE SEWER MAIN NAIC

| LAB NUMBER | LOCATION | SAMPLE TYPE | DEPTH RANGE | CLASSIFICATION SYMBOL | FINES SMALLER THAN #200 (0.075 mm) | SAND #200 to #4 (0.075 - 4.76 mm) | GRAVEL #4 to 3" (4.76 - 76.2 mm) | COBBLES 3" TO 5" (76.2 - 127 mm) | OVERSIZE LARGER THAN 5" (127 mm) | LIQUID LIMIT - % | PLASTICITY INDEX - % | MAXIMUM DRY UNIT WEIGHT (ASTM D698) -pcf | OPTIMUM MOISTURE CONTENT % | SPECIFIC GRAVITY (BULK) | ABSORPTION | LA Abrasion-Grading A % Loss | HVEEM "R" VALUE | NATURAL RESISTIVITY (Ohm-Cm) Natural Moisture | Resistivity (Ohm-Cm) Saturated | pH | WATER SOLUBLE SO4 - % |
|------------|----------|-------------|-------------|------------------------|-----------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------|----------------|---------------------------------|----------------|----------------|-------------|---------------------------------|------------------------------|----------------|------------------------|
| 8364       | B-1      | SPT         | 5'-6.5'     |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8365       | B-1      | SPT         | 9.5'-11'    |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8366       | B-1      | SPT         | 14.5'-16'   |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8367       | B-2      | SPT         | 5'-6.5'     |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8368       | B-2      | SPT         | 9.5'-11'    |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8369       | B-3      | SPT         | 5'-6.5'     |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8370       | B-3      | SPT         | 10'-11.5'   |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8371       | B-4      | Bulk        | 1'-5' CL     | 83 14 3 - - 33 12 110.3 15.7 |                                  |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8372       | B-4      | SPT         | 5'-6.5'     |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8373       | B-4      | SPT         | 10'-11.5'   |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
| 8374       | B-5      | SPT         | 5'-6.5'     |                        |                                   |                                  |                                 |                                 |                                 |                |                |                                  |                |                |              |                                  |                              |                |                        |
### LIQUID AND PLASTIC LIMITS TEST REPORT

Dashed line indicates the approximate upper limit boundary for natural soils.

### SOIL DATA

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>SOURCE</th>
<th>SAMPLE NO.</th>
<th>DEPTH</th>
<th>NATURAL WATER CONTENT (%)</th>
<th>PLASTIC LIMIT (%)</th>
<th>LIQUID LIMIT (%)</th>
<th>PLASTICITY INDEX (%)</th>
<th>USCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td></td>
<td>8371</td>
<td>1'-5'</td>
<td>21</td>
<td>33</td>
<td>12</td>
<td>CL</td>
<td></td>
</tr>
</tbody>
</table>

Client: MT Dept of A & E  
Project: Off Site Sewer Main  
NAIC  
Project No.: 4522.11447  
LAB #: 8371B
### Particle Size Distribution Report

#### Test Results (ASTM C136 & ASTM C117)

<table>
<thead>
<tr>
<th>Opening Size</th>
<th>Percent Finer</th>
<th>Spec.* Pass? (Percent)</th>
<th>Pass? (X=Fail)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#10</td>
<td>95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#20</td>
<td>94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#40</td>
<td>93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#80</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#100</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#200</td>
<td>83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Material Description

Bulk Sample

lean clay with sand

#### Atterberg Limits (ASTM D 4318)

- **PL** = 21
- **LL** = 33
- **Pl** = 12

#### Classification

- **USCS (D 2487)** = CL
- **AASHTO (M 145)** = A-6(9)

#### Coefficients

- **D90** = 0.1723
- **D85** = 0.0921
- **D60** =
- **D50** =
- **D30** =
- **D15** =
- **D10** =
- **C_u** =
- **C_c** =

#### Remarks

(no specification provided)

---

#### Location

- **B-4**
- **Sample Number**: 8371
- **Depth**: 1'-5'

---

#### Client

- **MT Dept of A & E**

#### Project

- **Off Site Sewer Main**

#### NAIC

- **Project No**: 4522.11447
- **LAB #**: 8371

#### Date Sampled

- **12/17/15**
Test specification: ASTM D 698-12 Method A Standard

<table>
<thead>
<tr>
<th>Elev/Depth</th>
<th>Classification</th>
<th>USCS</th>
<th>AASHTO</th>
<th>Nat. Moist.</th>
<th>Sp.G.</th>
<th>LL</th>
<th>PI</th>
<th>% &gt; #4</th>
<th>% &lt; No.200</th>
</tr>
</thead>
<tbody>
<tr>
<td>1'-5'</td>
<td>CL</td>
<td>A-6(9)</td>
<td></td>
<td>2.65</td>
<td>33</td>
<td>12</td>
<td>3</td>
<td>83</td>
<td></td>
</tr>
</tbody>
</table>

**TEST RESULTS**

Maximum dry density = 110.3 pcf
Optimum moisture = 15.7%

**MATERIAL DESCRIPTION**

Bulk Sample
lean clay with sand

**Project No.** 4522.11447 **Client:** MT Dept of A & E
**Project:** Off Site Sewer Main
**NAIC**
**Location:** B-4 **Sample Number:** 8371

**Remarks:**

**Date:** 1/6-7/16

Tested By: **GS**
Checked By: **CEP**
APPENDIX C

OFF-SITE SANITARY SEWER

PHOTOGRAPHIC LOG
View Northwest – Drilling Boring B-1 on South 7th Avenue

View Northeast – Drilling Boring B-1 on South 7th Avenue
View East – Drilling Boring B-2 in MSU Maintenance Yard

View Southeast – Drilling Boring B-2 in MSU Maintenance Yard
View South – Drilling Boring B-3 on South 5th Avenue

View Northwest – Drilling Boring B-3 on South 5th Avenue
View Northwest – Drilling Boring B-5 at South Willson Avenue and West Lincoln Intersection

View Southwest – Drilling Boring B-5 at South Willson Avenue and West Lincoln Intersection
STORMWATER MANAGEMENT PERMIT
March 17, 2016

DOWL
Attn: Mr. Brandon Duffy
2090 Stadium Dr.
Bozeman, MT 59715

Subject: MSU NAIC Offsite Sewer – City of Bozeman Stormwater Management Permit Approval

Dear Mr. Brandon Duffy,

Thank you for submitting a Stormwater Management Permit Application for the MSU NAIC offsite sewer project. I have reviewed the document and am recommending the permit for approval.

A few things to note:

1) Please install all erosion and sediment control measures before ground disturbance activities are initiated.

2) Please ensure all parties involved with this project are aware of the contents, responsibilities, and scope of this permit. Often times good permits are submitted, but they are not adequately followed through with in the field. This often results in a discharge of pollutants to local waterways. Strong communication is your number one tool to ensure this does not occur.

3) A City stormwater inspection may take place during this project. Inspections will include a document review and a site tour examining installed erosion and sediment control measures. It is critical that documents are continually updated, stored onsite, and the content is implemented to avoid violations being issued by the City.

Please let me know if you have any questions.

Sincerely,

[Signature]

Frank Greenhill, Stormwater Program Technician

Cc: Kyle Mehrens, Stormwater Program Coordinator
Project File
Montana State University
NAIC Offsite Sewer: Erosion Control

STORMWATER MANAGEMENT PLAN

Phase 2 – NAIC Building & Offsite Improvements

PPA # 13-0200

A/E # 2014-02-07

Prepared for:

State of Montana
Montana State University
Bozeman, Montana
406.994.4134

Prepared by:

DOWL
2090 Stadium Drive
Bozeman, MT 59715

March 2016
NAIC Offsite Sewer
Stormwater Management Plan

Stormwater Management Narrative

NAIC Offsite Sewer Improvements

Construction Activity Narrative:
The proposed NAIC offsite sewer improvements project will consist of installing 2,085 lf of PVC sewer main that stretches from Willson Avenue to 7th Avenue. Standard construction practices will be used to install the main (open trench), and work will proceed from Willson Avenue west (upstream) to a manhole that sits just east of 7th Avenue. This project has a requirement that the maximum open trench at one time shall not exceed 300 lineal feet, and all work is to be backfilled up to the immediate work site at the end of each day. The spoils from trench excavation will be stock piled on the uphill side of the trench so that the trench acts as a sediment trap for any potential runoff. Construction disturbance will be limited to the sewer alignment (10’ each side). Entrance and exit points will occur at existing streets, and construction equipment will be staged on top of the alignment with in this 20’.

Disturbance Area: 2,085LF x 20 ft = 0.96 Acres

Pollutant Sources: BMP’s to treat (1st, 2nd, ect. Refers to line of defense)

- Sediment:
  - 1st - General Housekeeping: stock piles will be placed on uphill side of trench so that trench acts as sediment trap for any runoff. Construction fencing will be installed to distinguish construction limits and help minimize disturbance area. Street sweeping will be used to remove sediment from the streets caused by tracking and other activities.
  - 2nd – In the landscaped corridor between Grand and S 3rd avenues, Straw wattles will be installed across the disturbed area at 75’ intervals to slow runoff and minimize erosion.
  - 2nd – In other vegetated areas, the existing grass and landscaping with be used as a vegetative buffer to filter any runoff.
  - 3rd – Inlet protection. Flexstorm temporary inlet protection devices (or approved equal) will be installed on adjacent inlets to the construction activity. See attached information on inlet protection.

- Oil/Grease/Fuel from equipment:
  - 1st – General House Keeping: care will be taken when fueling and greasing to prevent spills. Waste from greasing will be disposed of offsite in a lawful manner. Leaking equipment will be fixed immediately or removed from the job site. If leak is observed, place a drip pan under the leak to collect and dispose of offsite.
  - 2nd – Contractor shall have a spill response plan and the appropriate equipment on the work truck located at the job site for immediate action if necessary.

- Noise:
  - 1st – General Housekeeping: work will be conducted during normal hours to minimize noise disturbance

- Trash and Construction Debris
  - 1st – Trash shall be collected and disposed of at a receptacle located on the work truck that will be hauled off site every day. Greater care needs to be taken on windy days to
prevent trash from blowing off the job site. When cutting materials (ie, PVC pipe) cuts shall be made within a contained area within the sewer main alignment. Debris from cutting material shall not be allowed in the existing streets and absolutely no cutting within 20’ of a storm drain inlet. Debris from the cuts shall be swept into the trench after each cut.

- **Concrete & Asphalt dust from saw cuts:**
  - 1st – Contractor shall provide a means of collecting saw cut dust and disposing of offsite, such as wet vac.
  - 2nd – Inlet protection as described above

- **Concrete Washout:**
  - 1st – Concrete washout and waste shall be collected in an impermeable container (ie: plastic tub), allowed to dry and then hauled off site and disposed of in a lawful manner.
  - 2nd – Inlet protection as described above.

- **Trench Dewatering:**
  - 1st – If dewatering the trench is required, the water discharged from the pumping shall either be collected in a water truck and hauled off site to a settling pond that will allow the water to infiltrate into the ground, or discharge through a dewatering bag. See attached information on dewatering bags. To dispose of used dewatering bags, contractor can cut open on a disturbed landscape area and spread out material before seeding.
  - 2nd – Inlet protection described above.

**Section 1:**

**Good housekeeping** will be the primary means of preventing sediment from leaving the site. Construction fence will be installed in landscape areas to define the work corridor and help limit the disturbance area. Stock piles from trench excavation will be stored on the upslope side of the trench, so that the trench will act as a barrier/sediment trap. Work progression will be limited to a maximum open trench of 300 feet, and work is to be backfilled by the end of each work day up to the immediate work site. Backfilled soil will be compacted/tracked to help lower the erodibility of the disturbed soil.

**Street Sweeping** will be required for any sediment that is tracked into city streets.

**Vegetative Buffer and straw wattles** will be used in the disturbed landscaping areas until the seeded disturbed area is at 70% cover.

**Inlet Protection** will be installed on inlets adjacent to work as a last line of defense for sediment removal. Inlet protection will be an inserted filter bag type similar to the attached spec sheet. This is required so that it minimizes the potential for vandalism and being hit and needing repair.

**Section 2:**

**Good Housekeeping:** This BMP shall be implemented at all times. The efforts taken to minimize elicit discharge from the construction site shall be modified on a daily basis as construction site conditions warrant.

**Vegetative buffer:** This BMP will be implemented at all time. The construction fences will help to maintain this BMP and limit disturbance area.
Straw Wattles: This BMP is to be installed across the disturbed landscape area between S. 3rd Avenue and Grand Avenue. The BMP is to be installed within 1 day after trench is backfilled and work has progressed upstream. This BMP is to remain in place until the seeded disturbed area has reached 70% coverage as approved by the Engineer. Sediment build up shall be removed when it has built up to 1” below the top of the wattle. Removed sediment can be re-graded out on the site. This BMP should be inspected after all rain events.

Inlet Protection: This BMP shall be installed before work is occurring upstream of the inlet, and shall remain in place until all work upstream of the inlet has been backfilled and compacted/tracked. Installation, inspection, and maintenance shall be performed per the manufactures recommendations as outlined in the attached documents.

Street Sweeping: This BMP shall be implemented once the trench is backfilled off of asphalt surfaces, and when tracking onto streets occurs. Street sweeping may be accomplished by manual sweeping with a broom, or mechanically with larger street sweeping equipment. Large deposits of sediment from tracking shall be removed at the end of each day.

Trash Receptacle: Trash shall be collected and disposed of in an appropriate receptacle located on the work truck on site. This trash is to be hauled off site each day and disposed of in a lawful manner.

Concrete Washout: A mobile concrete washout facility such as a large plastic tub shall be provided on site when concrete is being poured. Waste shall be allowed to dry, and then disposed of offsite in a lawful manner.

Dewatering Bag: This BMP shall be used at any time dewatering of the trench is required. Install, inspect, and maintain per manufacturers recommendations. See attached documents for more information.

Section 3:

Stockpiles and spoils will be placed on the uphill side of the trench so that the trench acts as a sediment trap. Excess material shall be loaded on a truck and hauled off site.

Only two-three pieces of equipment will be allowed on site after work hours. This equipment will be located on the alignment within the immediate work site that was backfilled to that day.

Section 4:

Permanent Erosion Control:

- All disturbed areas will be covered by either hard surface improvements (concrete sidewalks and asphalt) or landscaped (seeded) per sheet C3.04 & C3.05. Vegetative buffer and straw wattles will remain in place until seeded areas have reached 70% cover.

Section 5:

All proposed BMP’s are listed above in Pollutant Source: BMP section and Section 1. Locations of the physical BMP’s are shown on sheets C3.04 and C3.05
Section 8:
Soil stockpiles will be placed on the uphill side of the trench. The excavated trench will be backfilled up to the immediate work site at the end of each day. The stockpile located at the immediate work site will utilize the trench as a sediment trap for any potential runoff.

Section 9:
Utilize a water truck to saturate dry soils to prevent dust during excavation/construction activity, and during windy conditions.

Section 10:
The only major slope on the project is located between Grand Avenue and S. 3rd Avenue. Upstream runoff is diverted by the existing curb and gutter of S. 3rd Avenue. Straw wattles will be installed at 75’ intervals on this slope to help mitigate erosion during rain events.

Section 11:
Perimeter Controls
- Construction fence will be installed in the landscaped areas to limit the disturbance area
- The trench will act as a sediment trap for the stockpiles.
- Inlet Protection will collect any sediment laden runoff before it enters the storm system.

Section 12:
Construction fence shall be installed in landscaped areas to minimize total amount of disturbed area at any one time, and maintain existing vegetative buffers.

Section 19:
A temporary concrete washout facility such as a large plastic tub shall be provided on site when concrete is being poured. Waste shall be allowed to dry, and then disposed of offsite in a lawful manner.
Storm Water Management Regulations
For Land Disturbance Sites
LESS Than One Acre

Storm Water Management is increasingly important for the purpose of maintaining clean water and preserving waterbodies such as streams, rivers, and lakes. The City of Bozeman’s Storm Water Management Ordinance #1763 went into effect April 22, 2010, as mandated under the Federal Clean Water Act (CWA) and the Montana Pollution Discharge Elimination (MPDES) regulation. These regulations are designed to improve water quality in waterbodies by reducing the amount of pollutants that storm water collects and carries into storm conveyance systems.

Permit and Fee
Owners/operators of construction sites considered a Sketch Plan or higher are required to apply for a City of Bozeman Storm Water Management Permit (SMP). The SMP requires submittals of an application form and a Storm Water Management Plan in compliance with the City of Bozeman’s Storm Water Management Ordinance #1763.

The Storm Water Management Plan shall contain the following items:
1. A completed Storm Water Management Plan checklist which outlines the project site’s Best Management Practices (BMPs);
2. A short narrative explaining how the permittee(s) will implement BMPs described on the checklist; and
3. A map of the construction site showing the locations of the BMPs.

Inspection and Review
Site plan review and inspection programs aid in compliance and enforcement and provide an opportunity for guidance and education. The City will perform a site plan review of potential water quality impacts at the time the SMP is submitted and will conduct regular inspections of the construction site.

The permittee(s) will be required to perform site inspections every 14 days and after major storm events to ensure all BMPs have been constructed and are functioning properly. The purpose of such inspections will be to determine the overall effectiveness of the control plan and the possible need for BMPs. All inspections shall be documented in written form, kept on the project site, and made available for review by the City.

Violation and Enforcement
If any violation is found, a notice will be issued to the Responsible Party. The notice will state the nature of the alleged violation(s), the action required to fix the violation(s), and a time limit to remedy the violation(s). Any person, firm, or corporation violating any of the provisions or terms of Ordinance #1763 of the City of Bozeman may be subject to penalties as a municipal infraction pursuant to Title 14 of the Bozeman Municipal Code. If you have any questions contact the City Engineering Office at 406-528-2280.
City of Bozeman, Montana

Storm Water Management Permit Application

Engineering Department
P.O. Box 1230
Bozeman, Montana 59771
406-528-2280

Note: This permit is separate from any permits required by the Montana Department of Environmental Quality. A State Storm water Construction Permit is required for all land disturbance activities equal to or greater than one (1) acre or for land disturbance less than one (1) acre that is part of a larger common plan of development or sale that would disturb one (1) acre or more.

(1) Contact Information:

**Project Owner**

- **Contact Person:** EJ Hook
- **Company:** MSU
- **Mailing Address:** PO Box 172760
- **State:** Bozeman, MT
- **Zip:** 59717-2760
- **Phone:** 406-994-7840
- **Email:** edward.hook1@montana.edu
- **Fax:**
- **Cell Phone:**

**Contractor**

- **Contact Person:** Unknown
- **Company:**
- **Mailing Address:**
- **State:**
- **Zip:**
- **Phone:**
- **Email:**
- **Fax:**
- **Cell Phone:**

**Engineer**

- **Contact Person:** Brandon Duffey
- **Company:** DOWL
- **Mailing Address:** 2090 Stadium Dr.
- **State:** MT
- **Zip:** 59715
- **Phone:** 406-586-8834
- **Email:** bduffey@dowl.com
- **Fax:**
- **Cell Phone:**

(2) Project Information

- **Project Address:** MSU Prop & Lincoln Street R.O.W. between 5th Avenue and Willson Avenue
- **Lot Number:**
- **Subdivision (if applicable):** NA
- **Project Size:** (Land Disturbance) 0.96 Ac.
- **Project type:** (Planning Application) Sewer Main Extension

(3) Project Information

Check the appropriate box(es) or provide a brief description that indicates the general nature of the construction activities:
- Single Family Residential
- Multi-Family Residential
- Utility
- Commercial/Industrial
- Highway/Road
- Other (describe):

Description of proposed work:

Work will consist of installing approx 2085 ft of sewer main improvements through MSU Facilities Yard and down Lincoln ROW to Willson Avenue. Work will consist of standard trench excavation work on a linear project. See attached narrative for more information.
City of Bozeman, Montana

Storm Water Management Permit Application

(4) Project Schedule

Start Date: Late April 2016  Completion Date: July 2016  Final Stabilization Date: Spring 2017

(5) Waterbodies and Storm Conveyance Systems

List Waterbodies within 200' of project

Streams: Bozeman Creek ~ 280' away  Lakes: -
Wetlands: -  Rivers: -
Sloughs: -  Other: -

List Storm Conveyance Systems within 100' of project

Ditches: -  Swales: -
Detention Facilities: See attached plan  Storm Drain Inlets: See attached plan
Pipe Inlets/Outlets: see attached plan  Gutter: see attached plan

(6) Acknowledgement Certificate:

I certify that I am the Owner or Owner’s authorized agent. If acting as an authorized agent, I further certify that I am authorized to act as the Owner’s agent regarding the property at the above-referenced address for the purpose of filing applications for decisions, permits or review under the City of Bozeman Ordinance ---- and have full power and authority to perform on behalf of the Owner all acts required to enable the City to process and review such applications.

I certify that the information on this application is true and correct and understand that I shall not start this project until this application is approved. I shall comply with the laws of the State of Montana and the ordinances of the City of Bozeman.

Signature of Legally Responsible Person  Date signed

Printed Name  Title

** For Official Use Only**

<table>
<thead>
<tr>
<th>LESS than one acre</th>
<th>Received</th>
<th>City</th>
<th>By</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMP Checklist</td>
<td>Yes</td>
<td>No</td>
<td>Field Visit</td>
<td></td>
</tr>
<tr>
<td>SMP Plan</td>
<td>Yes</td>
<td>No</td>
<td>Approval</td>
<td></td>
</tr>
<tr>
<td>SMP Map</td>
<td>Yes</td>
<td>No</td>
<td>Comments:</td>
<td></td>
</tr>
<tr>
<td>Payment - $</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Greater or equal to one acre</th>
<th>Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT Stormwater Discharge Permit (NOI)</td>
<td>Yes  No</td>
</tr>
<tr>
<td>SWPPP</td>
<td>Yes</td>
</tr>
<tr>
<td>Site showing BMPs</td>
<td>Yes</td>
</tr>
<tr>
<td>MT Stormwater Discharge Permit (NOT)</td>
<td>Yes  No</td>
</tr>
<tr>
<td>SMP Checklist</td>
<td>Yes</td>
</tr>
<tr>
<td>SMP Plan</td>
<td>Yes</td>
</tr>
<tr>
<td>SMP Map</td>
<td>Yes</td>
</tr>
<tr>
<td>Payment - $</td>
<td>Yes</td>
</tr>
<tr>
<td>Required Best Management Practice (BMPs)</td>
<td>Stormwater Management Plan Descriptive Narrative</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Prevent silt, dirt, topsoil, etc. from washing into the streets, alleys, drainage easements, drainage conveyance systems, and storm drains.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Implement and maintain erosion control BMPs to prevent the erosion and transport of sediment by water/rain runoff.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Include spoil areas and staging areas as part of the project/construction site.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Establish permanent erosion control for all disturbed land areas related to the project activity before final occupancy of structures located thereon.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Identify all erosion and sediment control BMPs to be installed and maintained throughout the duration of the project.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Use clearing techniques that retain natural vegetation and retain natural drainage patterns (where feasible).</td>
<td>See note 6, sheet C3.05</td>
</tr>
<tr>
<td>Stabilize soil within 14 days of clearing or inactivity in construction.</td>
<td>See note 7, sheet C3.05</td>
</tr>
<tr>
<td>Stabilize or cover soil stockpiles at the end of EACH workday.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Employ wind erosion techniques to prevent the blowing of dust or sediment from the site.</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Employ techniques that divert upland runoff past disturbed slopes (where necessary).</td>
<td>See Narrative</td>
</tr>
<tr>
<td>Provide sediment controls in the form of settling basins, sediment traps or tanks, and perimeter controls (where necessary).</td>
<td>See Narrative and sheet C3.04 &amp; C3.05</td>
</tr>
<tr>
<td>Part</td>
<td>Required Best Management Practice (BMPs)</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>Protect adjacent properties by the use of a vegetated buffer strip, silt fence, fiber rolls, or other BMP perimeter controls.</td>
</tr>
<tr>
<td>13</td>
<td>Keep solid waste materials in a container or an enclosed waste collection area on site.</td>
</tr>
<tr>
<td>14</td>
<td>Store chemicals, paint, petroleum, fertilizer and pesticides in a covered enclosure.</td>
</tr>
<tr>
<td>15</td>
<td>Dispose of empty/unused chemical and hazardous waste containers in accordance with label instruction.</td>
</tr>
<tr>
<td>16</td>
<td>Segregate potentially hazardous waste from non-hazardous waste.</td>
</tr>
<tr>
<td>17</td>
<td>Perform daily cleanup of construction site to ensure that all litter is contained in an appropriate enclosure or container.</td>
</tr>
<tr>
<td>18</td>
<td>Recycle waste materials where feasible.</td>
</tr>
<tr>
<td>19</td>
<td>Contain concrete truck washout water on site in a designated washout pit. Remove and properly dispose of concrete residue at conclusion of construction.</td>
</tr>
<tr>
<td>20</td>
<td>Ensure exposed aggregate waste wash water does not leave the construction site and or get into the curb and gutters, catch basins or any other storm conveyance systems.</td>
</tr>
<tr>
<td>21</td>
<td>Locate sanitary waste facilities a minimum of 15 feet from storm drain inlets and receiving waterbodies.</td>
</tr>
<tr>
<td>22</td>
<td>Delineate and stake the Flood Plain and install perimeter BMPs.</td>
</tr>
<tr>
<td>23</td>
<td>List waterbodies within 200’ of project (stream, lake, river, wetland, slough, other).</td>
</tr>
<tr>
<td>24</td>
<td>List stormwater conveyance systems within 100’ of project (ditch, swale, detention facility, storm drain inlet, drywell, gutter, pipe inlet/outlet).</td>
</tr>
</tbody>
</table>
Montana State University
NAIC Offsite Sewer
Stormwater Management Plan

Appendix A: Plans
Montana State University

NAIC Offsite Sewer

Stormwater Management Plan

Appendix B: Erosion Control Specification Section
PART 1 - GENERAL

1.1 SUMMARY

A. Contractor shall be fully responsible for the Storm Water Discharge Permit and fully comply with the Montana Department of Environmental Quality (DEQ) and City of Bozeman (COB) regulations in regards to Storm Water Discharges associated with Construction Activity including, but not limited to, any and all submittals, inspections, fees, reporting, training, and installation of Best Management Practices (BMP’s). CONTRACTOR shall sign all permits and forms and assumes all responsibility of management of the Storm Water Erosion Control Plan and any associated records or fines.

B. The CONTRACTOR is required to implement and adjust as required, the Storm Water Pollution Prevention Plan (SWPPP) approved by the City of Bozeman. The SWPPP must clearly address the effluent limitations and the selected BMP’s to be used to manage pollutant sources and ensure appropriate protection of state surface waters as outlined in DEQ’s General Permit for Storm Water Discharges Associated with Construction Activity (called “General Permit”). In case of conflict between this specification and the General Permit, the General permit shall prevail.

C. The site is required to reach “final stabilization” before permit coverage may be terminated. In Montana’s semi-arid climate, the time necessary to achieve this “final stabilization” often requires maintenance and permit coverage well beyond the Substantial Completion phase to ensure vegetation or other site stabilization measures are in-place.

1.2 RELATED REQUIREMENTS:

A. Section 31 1000 - Site Clearing.

B. Section 31 2000 - Earth Moving.
1.3 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Standard Specifications:


2. Except as specifically noted otherwise in the contract documents, all work shall be performed in accordance with the Standard Specifications.

3. The information in these project specifications shall take precedence in the event of any discrepancies. Any discrepancies discovered by the Contractor shall be brought to the attention of the Engineer before performing the associated work.

1.4 DEFINITIONS

A. Best Management Practices (BMPs)

1. Schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of state surface waters. BMP’s also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

B. Final stabilization

1. The time at which all soil-disturbing activities at the site have been completed, and a vegetative cover has been established with a density of at least 70% of the pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed. Final stabilization using vegetation must be accomplished using seeding mixtures or forbs, grasses, and shrubs that are adapted to the conditions of the site. Establishment of a vegetative cover capable of providing erosion control equivalent to pre-existing conditions at the site will be considered final stabilization.

1.5 SUBMITTALS

A. Prior to receiving a Notice to Proceed, contractor shall submit to the ENGINEER the following documentation:
1. a signed copy of the completed City of Bozeman Stormwater Management Permit; included at the end of this section.

B. In addition, the ENGINEER shall be copied on all documentation submitted to or received from the City of Bozeman or MSU including but not limited to notices of noncompliance, if necessary and the Notice of Termination, when submitted.

1.6 APPLICABLE LAWS AND REGULATIONS

1.7 CONTRACTOR shall fill in contractor information and sign the City of Bozeman Stormwater Management Permit for Storm Water Discharges Associated with Construction Activity (COB Permit, less than 1 acre). An approved copy of this permit is included at the end of this section.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 GENERAL

A. Permit coverage can be obtained by signing the enclosed permit and returning to the ENGINEER who will forward to the City of Bozeman

B. The CONTRACTOR will be responsible for annual renewals of the permit until “final stabilization” has occurred and the Notice of Termination (NOT) can be submitted. The CONTRACTOR must submit a NOT form when the construction activity is complete and the site has achieved “final stabilization.” ENGINEER shall be notified of any inspection made for the purpose of determining if the site has achieved final stabilization.

3.2 Inspections

A. Inspections must be performed by the CONTRACTOR. Site inspections are to be conducted after all rain events, and shall note any deficiencies and measures taken to correct. Site inspections are to be conducted during the construction project's normal working hours and the inspection schedule must be documented in the SWPPP.

3.3 Maintenance

A. All BMPs identified in the SWPPP must be maintained in effective operating condition. If site inspections identify BMPs which are not in effective operating condition, maintenance must be performed before the next storm event. If existing BMPs need to be modified, or if additional BMPs are necessary for any
reason, implementation of these additional measures must be completed before the next storm event. All changes in the design, implementation, or installation of erosion and sediment control or other BMPs must be documented where applicable in the SWPPP. SWPPP changes must also be summarized in a SWPPP Revision/Update Log maintained by the CONTRACTOR. Prior to submitting a Notice of Termination, all temporary BMP's should be removed.

3.4 Recordkeeping

A. The CONTRACTOR shall maintain a record of installed BMP's with dates of installation/removal, inspections, and maintenance.

3.5 END OF SECTION 312500
Appendix C: BMP Data
Straw Wattle Installation

Proper installation of the straw wattle is essential in order to insure the success of the product. Straw wattles are designed for low surface flows, not to exceed 1 cfs for small areas. While they work well on stream banks, they should not be placed in the path of high water flow. On slopes, wattles should be installed on contour with a slight downward angle at the end of the row in order to prevent ponding at the mid-section. No overall slope preparation is needed prior to installation; however, straw wattles should always be installed in shallow trenches according to the guidelines given below. Running lengths of wattles should be abutted firmly to ensure no leakage at the abutments. Guidelines regarding vertical spacing are given below. The wattles should be pinned securely to the ground according to instructions in order to insure their stability and the success of the installation.

**SPACING - DOWNSLOPE**

Vertical spacing for slope installations should be determined by site conditions: slope gradient and soil type are the main factors.

A good rule-of-thumb is:

- 1:1 slopes = 10 feet apart
- 2:1 slopes = 20 feet apart
- 3:1 slopes = 30 feet apart
- 4:1 slopes = 40 feet apart, etc.

However, adjustments may have to be made for the soil type:

- For soft, loamy soils - adjust the rows closer together.
- For hard, rocky soils - adjust the rows further apart.

**TRENCHING**

Use a hand tool such as a maddox or pick to score the ground. Using a shovel, dig the trench to the needed depth. Soil from excavating the trenches can be placed on the uphill, or flow side, of the trench to be used during installation.

- For soft, loamy soils: dig a 3-5 inch trench.
- For hard, rocky soils: dig a 2-3 inch trench.

**INSTALLING**

Lay the first straw wattle snugly in the trench. **No daylight should be seen under the wattle.** Pack soil from trenching against the wattle on the uphill side. When installing running lengths of straw wattles, you must butt the second wattle tightly against the first wattle. **DO NOT overlap the ends on top of each other.** Overlapping behind each other has been done with some success. Stake the straw wattles at each end and four foot on center.

For example:

- 25 foot wattle uses 6 stakes
- 20 foot wattle uses 5 stakes
- 12 foot wattle uses 4 stakes

Stakes should be driven through the middle of the wattle, leaving 2-3 inches of the stake protruding above the wattle. A heavy sediment load will tend to pick the wattle up and could pull it off the stakes if they are driven down too low. It may be necessary to make a hole in the wattle with the pick end of your maddox in order to get the stake through the straw. When straw wattles are used for flat ground applications, drive the stakes straight down; when installing wattles on slopes, drive the stakes perpendicular to the slope.

Drive the first end stake of the second wattle at an angle toward the first wattle in order to help abut them tightly together. If you have difficulty driving the stake into extremely hard or rocky slopes, a pilot bar may be needed to begin the stake hole.
FLAT GROUND APPLICATIONS
For installations along sidewalks or behind curbs it may not be necessary to stake the wattles, however, trenches must still be dug. If you have not yet back-filled behind the sidewalk or curb, lay the wattle snugly against it first, then backfill behind the wattle. Your trench is done! For installations around storm drains and inlets, trenches and staking will be needed.

Fit wattle in trench snugly up against the sidewalk or curb. Around storm drains or inlets, the wattle should be back 1–1½ ft. and should direct water flow toward the angle of drainage. If all drainage angles into the inlet, snake the wattle all the way around the inlet, using more than one wattle if needed.

STAKING
We recommend using wood stakes or willow cuttings, rather than metal pins, to secure the straw wattles. Wood stakes will eventually bio-degrade, and willow cuttings will grow and provide extra stabilization. Be sure to use a stake that is long enough to protrude several inches above the wattle: 18” is a good length for hard, rocky soil. For soft, loamy soil use a 24” stake for greater security. The diameter of the stake should be approximately 1” for ease of driving through the wattle.

1. Straw roll installation requires the placement and secure staking of the roll in a trench, 3”-5” (75-125mm) deep, dug on contour. Runoff must not be allowed to run under or around roll.
FLEXSTORM P/Ns 62SCBFX
SQCB INLET TYPE: RAISED CAST IRON FRAME AND GRATE WITH CURB HOOOD

A: GRATE WIDTH (LEFT TO RIGHT)
B: FRAME CLEAR OPENING WIDTH (LEFT TO RIGHT)
C: GRATE DEPTH (FRONT TO BACK)
D: FRAME CLEAR OPENING DEPTH (FRONT TO BACK)
E: CURB BACK OVERALL WIDTH
F: CURB BACK OPENING SIZE
G: CURB BACK WIDTH
H: CURB BACK MAXIMUM HEIGHT

Catch-IT Frame with FX Bag

<table>
<thead>
<tr>
<th>ADS PIN</th>
<th>Flexstorm Item Code</th>
<th>Flexstorm Framing Dims</th>
<th>Flexstorm Ratings (Flow at 50% max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grate Size (A x C)</td>
<td>Clear Opening (B x D)</td>
<td>B1</td>
<td>D1</td>
</tr>
<tr>
<td>62SCBFX</td>
<td>C-SQCB-200-109-176-85-FX</td>
<td>20 x 10.875</td>
<td>17.6 x 8.5</td>
</tr>
<tr>
<td>62SCBFX</td>
<td>C-SQCB-200-109-185-90-FX</td>
<td>20 x 10.9</td>
<td>18.5 x 9.0</td>
</tr>
</tbody>
</table>

NOTES:
1. RATINGs SHOWN ARE FOR STANDARD 22" BAG DEPTH; "SHORT" 12" DEPTH BAGS ARE AVAILABLE WITH -S SUFFIX; RATINGS REDUCED BY ~50%.
2. THE FOLLOWING REQUIRES ADDITIONAL REVIEW
   - GRATES WITH EXTENDED BOTTOMS
   - ANY OBSTRUCTED INLET OPENINGS
NOTES:
1. RATINGS SHOWN ARE FOR STANDARD 22" BAG DEPTH; "SHORT" 12" DEPTH BAGS ARE AVAILABLE WITH -S SUFFIX; RATINGS REDUCED BY ~50%.
2. THE FOLLOWING REQUIRES ADDITIONAL REVIEW
   - GRATES WITH EXTENDED BOTTOMS
   - ANY OBSTRUCTED INLET OPENINGS
NOTES:

1. RATINGS SHOWN ARE FOR STANDARD 22" BAG DEPTH; "SHORT" 12" DEPTH BAGS ARE AVAILABLE WITH ~S SUFFIX; RATINGS REDUCED BY ~50%.

2. THE FOLLOWING REQUIRES ADDITIONAL REVIEW

-GRATES WITH EXTENDED BOTTOMS

-ANY OBSTRUCTED INLET OPENINGS
# Flexstorm P/Ns 62LCBFX

**SQCB Inlet Type: Raised Cast Iron Frame and Grate with Curb Hood**

---

<table>
<thead>
<tr>
<th>Field Inlet Dimensions</th>
<th>Flexstorm Framing Dims</th>
<th>Flexstorm Ratings (Flow at 50% max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grate Size (A x C)</td>
<td>Clear Opening (B x D)</td>
<td>B1</td>
</tr>
<tr>
<td>29.75 x 21.75</td>
<td>27.375 x 19.5</td>
<td>27.0</td>
</tr>
<tr>
<td>35.25 x 17.75</td>
<td>33.15</td>
<td>32.5</td>
</tr>
<tr>
<td>35.5 x 17.75</td>
<td>33.5 x 15</td>
<td>33.0</td>
</tr>
<tr>
<td>31.75 x 21.4</td>
<td>29.6 x 19</td>
<td>29.0</td>
</tr>
<tr>
<td>35.5 x 17.5</td>
<td>33.5 x 16</td>
<td>32.5</td>
</tr>
<tr>
<td>35.5 x 17.5</td>
<td>33.5 x 16</td>
<td>33.0</td>
</tr>
<tr>
<td>31.5 x 21.4</td>
<td>30.1 x 19.6</td>
<td>29.5</td>
</tr>
<tr>
<td>33.75 x 21.75</td>
<td>31.375 x 19.375</td>
<td>31.0</td>
</tr>
<tr>
<td>36.1 x 18</td>
<td>36.5 x 15.5</td>
<td>35.0</td>
</tr>
<tr>
<td>27.5 x 24.5</td>
<td>28.1 x 22</td>
<td>27.5</td>
</tr>
<tr>
<td>34 x 21.25</td>
<td>32.125 x 19.375</td>
<td>31.5</td>
</tr>
<tr>
<td>38 x 16.87</td>
<td>36.175 x 15.125</td>
<td>36.0</td>
</tr>
<tr>
<td>34 x 21.25</td>
<td>32.125 x 19.375</td>
<td>32.0</td>
</tr>
<tr>
<td>35.8 x 23.8</td>
<td>33.4 x 21</td>
<td>33.0</td>
</tr>
<tr>
<td>36.25 x 21.75</td>
<td>34 x 20.5</td>
<td>33.5</td>
</tr>
<tr>
<td>35.75 x 23.8</td>
<td>33.75 x 21.75</td>
<td>33.0</td>
</tr>
<tr>
<td>39.26 x 22.87</td>
<td>37.87 x (22)</td>
<td>37.5</td>
</tr>
<tr>
<td>39.5 x 22.87</td>
<td>37.87 x 21</td>
<td>37.5</td>
</tr>
<tr>
<td>37.5 x 24.5</td>
<td>37.75 x 23</td>
<td>37.5</td>
</tr>
<tr>
<td>47.5 x 24.5</td>
<td>37.75 x 23</td>
<td>37.5</td>
</tr>
<tr>
<td>35.75 x 23.75</td>
<td>36.5 x 27.25</td>
<td>35.0</td>
</tr>
<tr>
<td>48 x 24</td>
<td>44 x 20</td>
<td>43.5</td>
</tr>
<tr>
<td>36.5 x 24.375</td>
<td>35 x 29.0625</td>
<td>34.5</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Ratings shown are for standard 22" bag depth; "short" 12" depth bags are available with -S suffix; ratings reduced by -50%.

2. The following requires additional review:
   - Grates with extended bottoms
   - Any obstructed inlet openings

---

[Diagram of Flexstorm P/Ns 62LCBFX]

---

*All products manufactured by Inlet & Pipe Protection, Inc. - A Division of ADS, Inc.*

[Inletfilters.com] 866-287-8655 PH (630) 355-3477 FX info@inletfilters.com

---

**Sheet 1 of 1**
**FLEXSTORM OPERATION AND MAINTENANCE PLAN**

**Installation Instructions:**

1. Remove grate from the drainage structure
2. Clean stone and dirt from ledge (lip) of drainage structure
3. Drop the FLEXSTORM inlet filter through the clear opening such that the hangers rest firmly on the lip of the structure.
4. Replace the grate and confirm it is not elevated more than 1/8", the thickness of the steel hangers.

**Frequency of Inspections:**

1. Inspection should occur following any rain event >½”.
2. Post construction inspections should occur 4 times per year. In snowfall affected regions additional inspections should take place before and after snowfall season.
3. Industrial application site inspections (loading ramps, wash racks, maintenance facilities) should occur on a regularly scheduled basis no less than 3 times/year.

**Maintenance Guidelines:**

1. Empty the sediment bag if more than half filled with sediment and debris, or as directed.
2. Remove the grate, engage the lifting bars with the FLEXSTORM Removal Tool, and lift from drainage structure.
3. Dispose of sediment or debris as directed by the Engineer or Maintenance contract.
4. An industrial vacuum can be used to collect sediment.
5. Remove caked on silt from sediment bag and flush with Medium spray with optimal filtration.
6. Replace bag if torn or punctured to >½” diameter on lower half of bag.

**Post Construction PC Bag Maintenance:**

1. At 50% saturation the average 2’x2’ Adsorb-it lined PC filter will retain approximately 75 oz (4.2 lbs) of oil and should be serviced. To recover the oils the filter can be centrifuged or passed through a wringer.
2. Oil skimmer pouches start to turn black when saturated, indicating time for replacement. Each ClearTec Rubberizer pouch will absorb ~62oz (4 lbs) of oil before needing replacement.
3. Dispose of all oil contaminated products in accordance with EPA guidelines. ClearTec Rubberizer, since a solidifier, will not leach under pressure and can be disposed of in most landfills, recycled for industrial applications, or burned as fuel.

**Sediment Bag Replacement:**

1. Remove the bag by loosening or cutting off clamping bag.
2. Take new sediment bag and secure worm drive clamping band to the frame channel.
3. Ensure Bag is secure and there is no slack around perimeter.
### Ultra-Dewatering Bag®
**Oil, Sediment & Flow Capacity**

- **Dewatering Bag**
  - **Size** | **Part #** | **Fabric Qty.** | **Max Flow Rate** | **Sediment Capacity** | **Sediment Capacity** | **Sediment Capacity** | **Oil Capacity**
  - Oil & Sediment 3' x 4' | 9729-O/S | 24 | 500 | 6 | 0.3 | 720 | 1.2
  - Oil & Sediment 6' x 6' | 9724-O/S | 74 | 500 | 18 | 1.3 | 4320 | 3.7
  - Oil & Sediment 10' x 15' | 9725-O/S | 302 | 1500 | 150 | 5.6 | 18000 | 15.1
  - Oil & Sediment 15' x 15' | 9727-O/S | 452 | 1500 | 225 | 8.3 | 27000 | 22.6

- **Reusable Dewatering Bag**
  - 3' x 5' Bag with Locking Rods | 9730 | 30 | 500 | 8 | 0.3 | 960 | NA
  - 5' x 7' Bag with Locking Rods | 9732 | 70 | 500 | 18 | 0.7 | 2160 | NA

**Notes:**
- Flow/dewatering rates will vary dramatically according to soil type.
- Sand will typically flow/dewater at the fastest rate with clay flowing the slowest.
- Clay can also blind over the fabric in some instances blocking flow entirely.
- Clean fabric will flow @ 90 gpm per sq ft (50 gpm per sq ft for Reusable model)
- Dewatering Bags are normally allowed to dry in place then cut open and spread/removed with heavy equipment.
- Reusable Bags can be used repetetively after emptying/cleaning.
- Sediment capacity is calculated using wet sand weighing approx 120 lbs per Cu/Ft, bag Ht at 6" and 12"
- Oil capacity estimated at low flow conditions with 0.5 gal absorbed per Sq Yd max capacity
# Material Specifications

<table>
<thead>
<tr>
<th>Properties</th>
<th>ASTM Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material: Non-woven, Polypropylene Geotextile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grab Tensile</td>
<td>D 4632</td>
<td>220 lbs</td>
</tr>
<tr>
<td>Elongation</td>
<td>D 4632</td>
<td>50%</td>
</tr>
<tr>
<td>Trapezoid Tear</td>
<td>D 4533</td>
<td>95 lbs</td>
</tr>
<tr>
<td>Puncture</td>
<td>D 4833</td>
<td>135 lbs</td>
</tr>
<tr>
<td>Mullen Burst</td>
<td>D 3786</td>
<td>420 psi</td>
</tr>
<tr>
<td>Permittivity</td>
<td>D 4491</td>
<td>1.5 sec⁻¹</td>
</tr>
<tr>
<td>A.O.S. (U.S. sieve no.) / Microns</td>
<td>D 4751</td>
<td>80 / 180</td>
</tr>
<tr>
<td>UV Stability (strength retained %) 500 hrs</td>
<td>D 4355</td>
<td>70%</td>
</tr>
<tr>
<td>Fabric Weight (oz/yd²) (typical)</td>
<td>D 5261</td>
<td>8 oz/yd²</td>
</tr>
<tr>
<td>Flow (through material)</td>
<td>D 4491</td>
<td>90 gpm/ft²</td>
</tr>
<tr>
<td>Flow (bypass ports gpm) *</td>
<td></td>
<td>770 gpm</td>
</tr>
<tr>
<td>Flow (bypass ports cfs) *</td>
<td></td>
<td>1.7 cfs</td>
</tr>
</tbody>
</table>

* Larger bypass flow rate designs are available
Ultra-Dewatering Bag® Specifications

Material Specifications

<table>
<thead>
<tr>
<th>Properties</th>
<th>ASTM Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material: Non-Woven, Polypropylene Geotextile</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Grab Tensile</td>
<td>D 4632</td>
<td>205 lbs.</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>D 4632</td>
<td>50%</td>
</tr>
<tr>
<td>Trapezoid Tear</td>
<td>D 4533</td>
<td>80 lbs.</td>
</tr>
<tr>
<td>Puncture</td>
<td>D 4833</td>
<td>525 lbs.</td>
</tr>
<tr>
<td>Mullen Burst</td>
<td>D 3786</td>
<td>420 psi</td>
</tr>
<tr>
<td>Permittivity</td>
<td>D 4491</td>
<td>1.5 sec-1</td>
</tr>
<tr>
<td>A.O.S. (U.S. sieve no./mm)</td>
<td>D 4751</td>
<td>80/0.18</td>
</tr>
<tr>
<td>UV Stability (strength retained %) 500 Hours</td>
<td>D 4355</td>
<td>70%</td>
</tr>
<tr>
<td>Fabric Weight (oz./yd²)(typical)</td>
<td>D 5261</td>
<td>8 oz/ yd²</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>D 4491</td>
<td>90 gpm/ft²</td>
</tr>
</tbody>
</table>

Install the Ultra-Dewatering Bag® on a slope so incoming water flows downhill through the Ultra-Dewatering Bag® without creating more erosion. Strap the neck of the Ultra-Dewatering Bag® tightly to the discharge hose. To increase the efficiency of filtration, place the bag on an aggregate or hay bale bed to maximize water flow through the surface area of the bag.

The Ultra-Dewatering Bag® is full when it no longer can efficiently filter sediment or pass water at a reasonable rate. Flow rates will vary depending on the size of the Ultra-Dewatering Bag®, the type and amount of sediment discharged into the Ultra-Dewatering Bag®, the type of ground, rock or other substance under the bag and the degree of the slope on which the bag lies. Under most circumstances Ultra-Dewatering Bag® will accommodate flow rates of 1500 gallons per minute. Use of excessive flow rates or overfilling Ultra-Dewatering Bag® with sediment will cause ruptures of the bags or failure of the hose attachment straps.

Dispose of the Ultra-Dewatering Bag® as directed by the site engineer. If allowed, the Ultra-Dewatering Bag® may be cut open and the contents seeded after removing visible fabric.

The facts stated and the recommendations made herein are offered free of charge and are accurate to the best of our knowledge. UltraTech International, Inc. assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. UltraTech disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, material, or information furnished herewith. Final determination of the use of any information or material, or how it is useful, and whether the use infringes any patents is the sole responsibility of the user.

Unit Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Fabric QTY</th>
<th>Max Flow Rate (GPM)</th>
<th>Sediment Capacity (Cu Ft)</th>
<th>Sediment Capacity (lbs.)</th>
<th>Oil Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil &amp; Sediment 3’x4’</td>
<td>24 sq ft</td>
<td>500</td>
<td>6</td>
<td>720</td>
<td>1.2 gal</td>
</tr>
<tr>
<td>Part # 9729-O/S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Sediment 6’x6’</td>
<td>74 sq ft</td>
<td>500</td>
<td>36</td>
<td>4320</td>
<td>3.7 gal</td>
</tr>
<tr>
<td>Part # 9724-O/S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Sediment 10’x15’</td>
<td>302 sq ft</td>
<td>500</td>
<td>150</td>
<td>18000</td>
<td>15.1 gal</td>
</tr>
<tr>
<td>Part # 9725-O/S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Sediment 15’x15’</td>
<td>452 sq ft</td>
<td>500</td>
<td>225</td>
<td>27000</td>
<td>22.6 gal</td>
</tr>
<tr>
<td>Part # 9727-O/S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

08/25/2014