

CITY OF SISTERS

BID DOCUMENTS

FOR

HOOD AVENUE

IRRIGATION AND LIGHTING

PROJECT

**PLANS PREPARED FOR:
THE CITY OF SISTERS**



**PLANS PREPARED BY:
THE CITY OF SISTERS
520 E. Cascade Avenue
P.O. Box 39
Sisters, Oregon 97759**

And

**BECON CIVIL ENGINEERING AND LAND SURVEYING
549 SW Mill View Way, Suite 105
Bend, OR 97702**

BIDDER'S REQUIRED SUBMITTAL LISTING

The required submittal listing for the “**Hood Avenue Irrigation and Lighting Project**” is as follows:

#	ITEM	# OF PAGES	√
1	BID SCHEDULE	2	
2	CONTRACTOR EXPERIENCE FORM	2	
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TOTAL BID PROPOSAL WILL CONTAIN A MINIMUM OF:

14 PAGES

INVITATION TO BID

Sealed bids for the construction of the City of Sisters, **Hood Avenue Irrigation and Lighting Project**, addressed to the City Recorder, City of Sisters, Oregon will be received until 2:00 PM local time at City Hall, 520 E. Cascade Avenue, P.O. Box 39, Sisters, Oregon, on **October 28, 2015** and then publicly opened and read at 2:00 PM at City Hall, in Sisters, Oregon. Bids shall be clearly labeled: **Hood Avenue Irrigation and Lighting Project**.

Scope of Work:

The scope of work for the project generally includes a lighting and irrigation system installation, and other related incidental work. This project will require trenching and asphalt patch repair mainly along Hood Avenue with minor improvements at Ash Street and Cedar Street.

The City estimates the cost of base bid improvements at \$200,000.

Construction plans titled, **Hood Avenue Irrigation and Lighting Project** dated **October 2015**, consisting of **12** sheets and project specifications are herein incorporated into the bid documents for detail of the overall scope of the project including the scope of services for this portion of the project. **All workmanship, materials, and conditions shall conform to the 2008 Oregon Standard Specifications for Construction and the Public Works Construction Standards for the City of Sisters Oregon.**

This is a Public Works Contract and subject to Oregon Bureau of Labor and Industries (BOLI) Prevailing Wage Rates Effective July 1, 2015 for Region 10.

Completion:

It is the intent of the City of Sisters to have construction complete by January 8, 2015.

Project Timeline:

Advertisement	October 14, 2015
Bid Opening	October 28, 2015
Bid Review	October 28, 2015
Intent to Award	October 28, 2015
Council Contract Award	November 5, 2015
Work to Begin by	November 9, 2015
Work Completed by	January 8, 2016 (60 Calendar Days)

Liquidated Damages

Liquidated damages will be assessed at \$500 per work day should the Contractor fail to complete the work within the time allowed.

Contract Documents

Contract Documents may be examined at the following locations:

- City of Sisters, City Hall
- Premier Builders Exchange
- BECON Civil Engineering

Addendums issued during the advertisement phase of the project will be posted on the City of Sisters website and the Central Oregon Builder's Exchange website only. Bidders shall submit their proposal on the proposal forms contained within the contract documents or on alternate forms as prescribed by the bid documents. The City of Sisters will not accept any bid that is not submitted as prescribed in the Bid Documents package.

All requests for plans and bid documents shall be made to Kathy Nelson, City Recorder, City of Sisters at 541.323.5213.

Requirements of Bidders

Each proposal must be submitted on the prescribed forms and accompanied by a certified check or Bid Bond executed on the prescribed form, payable to the City of Sisters, Oregon, in an amount not less than 10% (10 percent) of the amount bid. The successful Bidder will be required to furnish the necessary additional bond(s) for the faithful performance of the Contract, as prescribed in the Contract Documents.

The attention of bidders is directed to the State government requirements and conditions of employment to be observed and minimum wage rates to be paid under the Contract.

The City of Sisters will closely review the Contractor's Experience form to ensure a Contractor with acceptable experience is awarded the Contract for the **Hood Avenue Irrigation and Lighting Project**.

Bidder must be registered with the Construction Contractors Board (ORS 701.055) or the bid will not be received or considered.

Pre-Bid Meeting

There will be no pre-bid meeting for the Hood Avenue Irrigation and Lighting Project.

All requests for clarification shall be made in writing and a Clarification Addenda will be issued prior to bid opening.

Proposals

The City reserves the right to reject all proposals or any proposal not conforming to the requirements of the Contract Documents, and postpone the awarding of the contract for a period of not more than 30 days from the bid opening date.

Notification

The notification of Intent to Award will be made to all responsible bidders within seven (7) calendar days of the bid opening. Protest of bid results and Intent to Award must be in writing, must be by a bidder in good legal standing, must be specific, and must be received within seven (7) calendar days of the date of issuance of the Intent to Award. The protest envelope must give bid title reference and must be addressed to Kathy Nelson, City Recorder, City of Sisters, 520 E. Cascade Avenue, P.O. Box 39, Sisters, Oregon 97759.

INSTRUCTION TO BIDDERS

PROJECT TITLE: Hood Avenue Irrigation and Lighting Project

LOCATION: Along Hood Avenue starting at the Pine Street intersection and ending at the Cedar Street intersection.

OWNER: City of Sisters
520 E. Cascade Avenue
P.O. Box 39
Sisters, Oregon 97759

PROPOSAL: To be entitled to consideration, please include:

Bid Schedule

1. Use bid schedule(s) provided. Fill in all blank spaces.
2. Bid shall be typed or prepared in blue ink, and signed in blue ink.
3. Complete without alterations or erasures.
4. Shall not contain any recapitulation of work to be done.
5. No oral, telephonic or telegraphic proposal or modifications will be considered.
6. Contractor must certify that it is or is not an Oregon business as per ORS 279A.120. ORS 279A.120 requires public contracting agencies, in determining the lowest responsible bidder, to add a percent increase to each out-of-state bidder's bid price which is equal to the percent of preference given to local bidders in the bidder's home state. The bidder shall certify that it is or is not an Oregon contractor as defined under ORS 279A.120, Preferences; Foreign Contractor, i.e., a foreign contractor is one who is not domiciled in or registered to do business in the State of Oregon.
7. All subcontractors are to be approved in writing by the Owner and carry the same insurance requirements as the prime contractor. Subcontractors shall submit Contractor's Board license number, Federal Identification Number, State Unemployment Number, and Certification of ORS 279A.120 as stated in the First Tier Subcontractor Disclosure Form.

Bid Bond

Enclose a bidder's bond, certified check (or cashier's) check with made payable to the Owner in an amount equal to 10% of the total bid.

First Tier Subcontractor Disclosure Form

The First Tier Subcontractor Disclosure Form may be completed and returned within 2 hours of the bid submittal time. The first tier subcontractor list may also be submitted with the sealed bid at contractor’s preference. The submittal of the First Tier Subcontractor Disclosure Form is optional, not mandatory, for the Hood Avenue Irrigation and Lighting Project.

Proposal

Enclose a completed Proposal form provided in the bid documents.

Prevailing Wage Rate Statement

The Prevailing Wage Rate Statement shall be completed and returned with the Bid Submittal per ORS 279C.800 – 279C.870.

Drug Testing Policy Statement

The Drug Testing Policy Statement shall be completed and returned with the Bid Submittal per ORS 279C.505 (2003 Chapter 794.138).

Non-Collusion Affidavit

The Non-Collusion Affidavit shall be completed and returned with the Bid Submittal.

Bid Submittal

Address and Deliver:

1. Address: City of Sisters
520 E. Cascade Avenue
P.O. Box 39
Sisters, OR 97759

2. Deliver: To CITY RECORDER, in an opaque sealed envelope marked **Hood Avenue Irrigation and Lighting Project**, with the name of the bidder, on or before **October 28, 2015 (2:00 pm)**.

AWARD OF CONTRACT:

Will in general be made to lowest responsible bidder, if within funds allotted, the city may choose to do only a portion of the project, within funds allotted. Additive alternate bid items, if listed in the bid documents, will be considered for inclusion in the award if the total bids are within the funds allotted for the project.

The competency and responsibility of bidders and of their proposed subcontractors will be considered in making the award. Owner reserves the right to reject bid of any bidder who has previously failed to perform properly and to complete on time contracts of a similar nature, who is not in a position to perform the Contract, who has habitually and without cause neglected the payment of bills or otherwise disregarded their obligation to subcontractors, material men or employees.

Bidder should notify Owner prior to bid opening date, should omissions or errors be found in Contract Documents. Owner will clarify by sending written instructions to all bidders in the form of Addenda which will become a part of the Contract.

Owner will not be responsible for any oral instructions or interpretations.

EXAMINATIONS:

Bidder is responsible for verifying dimensions and bid quantities prior to bidding.

Before submitting a proposal, the bidder shall carefully examine all Contract Documents, visit the site of the work, and fully inform themselves of all existing conditions and limitations. Bidders shall include in the Bid, sum or sums sufficient to cover the cost of all items in this Contract.

Bidder should notify Owner prior to bid opening date, should omissions or errors be found in Contract Documents. Owner will clarify by issuing instructions in the form of Addenda which will become a part of the Contract.

Owner will not be responsible for any oral instructions or interpretations.

Bidder is responsible to review all documents he/she will submit in the Proposal as complete. All pages listed on the Bidder's Required Submittal Listing are required to be included in the Proposal.

ANY ADDENDA:

Any addenda issued during the time of bidding are to be covered in the Proposal, and in closing a Contract they will become part thereof. Signed copy of the addenda is to be included with the bid submittal. All addenda will be made in PDF format, available on the City of Sisters website at www.ci.sisters.or.us and the Premier Builders Exchange. The City of Sisters will not mail or fax notice of Addenda, but will publish notice of any addenda on the City of Sisters' website and the Premier Builders Exchange. Addenda may be downloaded off the City's website. Bidders should frequently check the website at least once weekly until the week of bid opening. The City will issue the last addenda at least three business days prior to bid opening. Any addenda issued during the time of bidding are to be covered in the Proposal, and in closing a Contract they will become part thereof.

SUBSTITUTIONS:

In order to obtain approval of material, products, methods, as equal to those specified, submit to Owner substitution request at least five (5) days before bid opening.

CONTRACT DOCUMENTS:

The contractor and subcontractors shall comply with all Conditions of the Contract Documents.

PAYMENT ON CONTRACT:

Payment will be made as provided in the Contract. The contractor and subcontractors must pay not less than the minimum hourly rate of wage as determined by the Commissioner of Bureau of Labor for the City of Sisters, and which is not less than prevailing wage. They or their sureties must execute a statement under oath in a form prescribed by the State Labor Commissioner, certifying the hourly rate of wage paid and that no workman was paid less than prevailing rate of wage or less than the minimum hourly rate of wage and file with the Clerk of the District prior to any disbursement under the Contract and in accordance with ORS 279C.800 thru 279C.870. Contractors shall make payments in accordance with the Contract, ORS 279C.840 to 279C.870 and the laws of the State of Oregon. Contractor is required to have a \$30,000 Public Works Bond filed with CCB before starting work on the project, unless exempt.(SB 477, Sections 2-5) Contractor is required to verify their subcontractors have filed bond.

PECUNIARY INTEREST:

No director or employee of Owner shall have any pecuniary interest in the project.

LOCAL LABOR:

Contractor and subcontractors are encouraged to use local labor when available.

QUALIFICATIONS AS A CONDITION PRECEDENT TO BIDDING:

All Contractors submitting a bid must be registered with the Construction Contractors Board, or the bid will not be received or considered. A bid from an unregistered contractor will be rejected as unresponsive.

COMPLETION:

The Project shall be completed by January 8, 2016.

Project Contact

All design questions and clarification inquiries shall be made to Erik Huffman, Owner's Representative, BECON Civil Engineering, 541.633.3140.

All questions will be responded to in a written Addendum issued 3 days prior to bid opening. It will be available on the City of Sisters website. All questions received after this date will not receive response.

Bidder Name _____

Bid Schedule**HOOD AVENUE IRRIGATION AND LIGHTING PROJECT**

Item #	Description of Item	QTY	Unit	Unit Price Bid	Total Price Bid
1	Mobilization	1	Lump Sum		
2	Temporary Work Zone Traffic Control	1	Lump Sum		
3	Clearing and Grubbing	1	Lump Sum		
4	Erosion Control	1	Lump Sum		
5	Construction Survey Work	1	Lump Sum		
6	Saw Cutting	6042	Foot		
7	Removal of Surfacing	670	Square Yard		
8	Trench in Pavement	2750	Foot		
9	Trench in Un-paved Area	180	Foot		
10	AC Overlay 1.5-inch Level 2	4705	Square Yard		
11	Concrete Walks	150	Square Foot		
12	Irrigation Control Wire	3250	Foot		
13	Irrigation Piping	3250	Foot		
14	Irrigation Drip System	1	Lump Sum		
15	Restore Landscaping	1	Lump Sum		
16	Water Services (1" Meter)	2	Each		

Item #	Description of Item	QTY	Unit	Unit Price Bid	Total Price Bid
17	Concrete Light Pole Base	24	Each		
18	Electrical Junction Box	24	Each		
19	#4 XHHW Copper Wire	11385	Foot		
20	#10 XHHW Copper Wire	2260	Foot		
21	Schedule 40 Electrical Conduit (2-inch)	4580	Foot		
22	200-amp Meter Base	1	Each		

Total Amount of Bid \$ _____

Total Bid price written out in words: _____

All Unit Price Bids should be considered as “Furnished and Installed” unless otherwise noted in these bid documents.

Please invoice referencing the above exact line item numbers and line items. All quantities must be approved by the Project Engineer before invoicing. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items shall be based on actual quantities, determined as provided in the Contract documents.

To Be Considered Responsive, the following must be signed and completed by your firm:

We hereby certify to do the work as specified and at the price as quoted in conformance to all the City, State and Federal Regulations that are applicable and will indemnify the City of Sisters against all claims arising out of any actions caused by our company during the performance of this contract.

Bidders Official Company Name _____

Address _____

By _____ Date _____
(Signature of Authorized Official and Title)

By _____ Phone _____
(Type or Print Name)

Federal I.D.# _____ FAX # _____ Email: _____

CONTRACTOR'S EXPERIENCE

Please list at least five similar projects to the Hood Avenue Irrigation and Lighting Project that have been completed in the last five years.

#1

PROJECT OWNER: _____

DESCRIPTION OF PROJECT: _____

PROJECT ENGINEER: _____

TOTAL COST OF PROJECT: _____

CONTACT NAME: _____

CONTACT NAME TELEPHONE #: _____

#2

PROJECT OWNER: _____

DESCRIPTION OF PROJECT: _____

PROJECT ENGINEER: _____

TOTAL COST OF PROJECT: _____

CONTACT NAME: _____

CONTACT NAME TELEPHONE #: _____

#3

PROJECT OWNER: _____

DESCRIPTION OF PROJECT: _____

PROJECT ENGINEER: _____

TOTAL COST OF PROJECT: _____

CONTACT NAME: _____

CONTACT NAME TELEPHONE #: _____

#4

PROJECT OWNER: _____

DESCRIPTION OF PROJECT: _____

PROJECT ENGINEER: _____

TOTAL COST OF PROJECT: _____

CONTACT NAME: _____

CONTACT NAME TELEPHONE #: _____

#5

PROJECT OWNER: _____

DESCRIPTION OF PROJECT: _____

PROJECT ENGINEER: _____

TOTAL COST OF PROJECT: _____

CONTACT NAME: _____

CONTACT NAME TELEPHONE #: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That _____
 hereinafter called the PRINCIPAL, and _____
 a corporation duly organized under the laws of the State of _____, having its
 principal place of business at _____, in the State of
 _____, and authorized to do business in the State of Oregon, as SURETY, are
 held and firmly bound unto the City of Sisters, Oregon, as obligee, hereinafter called the
 CITY, in the penal sum of _____ dollars
 (\$ _____) for the payment of which, well and truly to be made, we bind
 ourselves, our heirs, executors, administrators, successors and assigns, jointly and
 severally, firmly by these presents.

THE CONDITIONS OF THIS BOND ARE SUCH That, whereas the PRINCIPAL herein
 is herewith submitting his or its bid proposal for the **Hood Avenue Irrigation and
 Lighting Project**, said bid proposal, by reference thereto, being hereby made a part
 hereof.

NOW, THEREFORE, if the said bid proposal submitted by the said PRINCIPAL be
 accepted, and the contract be awarded to said PRINCIPAL, and if the said PRINCIPAL
 shall execute the proposed Agreement and shall furnish such performance and
 payment bonds as required by the bidding and Contract Documents within the time
 fixed by said documents, then this obligation shall be void; if the PRINCIPAL shall fail to
 execute the proposed Agreement and furnish said bond, the SURETY hereby agrees to

pay to the CITY the penal sum as liquidated damages.

Signed and sealed this _____ day of _____, 2015.

By

Principal

Surety

By Attorney-in-fact

(A certified copy of the agent's power-of-attorney must be attached hereto.)

FIRST TIER SUBCONTRACTOR DISCLOSURE FORM

(OAR 137-040-0017)

PROJECT NAME: Hood Avenue Irrigation and Lighting Project

BID SUBMITTAL:

DATE: _____

TIME: _____

DISCLOSURE DEADLINE:

DATE: _____

TIME: _____

List below the Name, Address, Contact Name and Telephone Number of each subcontractor that will be furnishing labor or labor and materials that are required to be disclosed. Enter "NONE" if there are no subcontractors that need to be disclosed. (Attach additional sheets if needed).

Name/Address	Nature of Work Performed	Contact Phone #	Contract Amount
1.			
2.			
3.			
4.			
5.			

The above listed First-Tier Subcontractor(s) are providing labor or labor and materials with a dollar value equal to or greater than:

5% of the total Contract Price, but at least \$15,000 (including all alternates). If the dollar value is less than \$15,000 do not list the subcontractor above; or, \$350,000 regardless of the percentage of the total Contract Price.

FORM SUBMITTED BY (BIDDER NAME): _____

CONTACT NAME _____ PHONE #: _____

DELIVER FORM TO AGENCY: City of Sisters _____

PERSON DESIGNATED TO RECEIVE FORM: City Recorder
PHONE #: 541.549.6022 _____

AGENCY ADDRESS: 520 E. Cascade Avenue, P.O. Box 39, Sisters, OR 97759 _____

UNLESS OTHERWISE STATED IN THE ORIGINAL SOLICITATION, THIS DOCUMENT SHALL NOT BE FAXED. IT IS THE RESPONSIBILITY OF THE BIDDERS TO SUBMIT THIS DISCLOSURE FORM AND ANY ADDITIONAL SHEETS, WITH THE PROJECT NAME CLEARLY MARKED, AT THE LOCATION INDICATED BY THE SPECIFIED DISCLOSURE DEADLINE. SEE INSTRUCTIONS TO BIDDERS.

Rev: 03-09-2000 Agency will insert "N/A" above if the Contract amount value is anticipated to be less than \$100,000. Otherwise this form must be submitted within two working hours of the advertised bid closing date and time; no later than the DISCLOSURE DEADLINE stated above. Bids which are submitted by Bid Closing, but for which the separate disclosure submittal has not been made by the specified deadline, are Not Responsive and shall not be considered for Contract award.

PROPOSAL
Hood Avenue Irrigation and Lighting Project

BIDDER'S DECLARATION:

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this proposal are those named herein, that this proposal is, in all respects, fair and without fraud, that it is made without collusion with any official of the City, and that the proposal is made without any connection or collusion with any person making another proposal on this Agreement.

The Bidder further declares that he has carefully examined the Contract Documents for the construction of the project, that he has personally inspected the site, that he has satisfied himself as to the quantities involved, and that this proposal is made according to the provisions and under the terms of the Contract Documents, which documents are hereby made a part of this proposal.

The Bidder further declares that the provisions required by ORS 279C.800 to 279C.870 relating to prevailing wage rates shall be complied with.

The Bidder further agrees that he has exercised his own judgment regarding subsurface condition and has utilized all data which he believes pertinent from the City and other sources in arriving at his conclusions.

CONTRACT EXECUTION:

The Bidder agrees that if this proposal is accepted, he will, within ten (7) days, not including Sundays and legal holidays, after notice of award, sign the Agreement in the form annexed hereto, and will at that time, deliver to the City of Sisters the PERFORMANCE BOND and the PAYMENT BOND required herein, and will to the extent of his proposal, furnish all machinery, tools, apparatus, and other means of construction and do the work and furnish all the materials necessary to complete the work in the manner, in the time, and according to the methods specified in the Contract Documents and required by the City thereunder.

In the event that the Bidder shall fail to enter into a contract within such time, the bid security in the amount stated in the INVITATION TO BID and deposited herewith, shall be retained by the City and it is agreed that said sum is a fair measure of the amount of damage that the City will sustain because of such failure to enter into a contract.

CERTIFICATES OF INSURANCE:

The bidder further agrees to furnish the City, before commencing the work under the Contract, the certificates of insurance as specified in these documents.

CONSTRUCTION TIME LIMITS:

The Bidder agrees to begin work within ten (7) calendar days after the date of the City's written notice to proceed, and to complete all work to be done under the contract in the time frames noted in the INVITATION TO BID after the date of the City's written notice to proceed.

LIQUIDATED DAMAGES:

In the event the Bidder is awarded the Agreement and shall fail to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Bid Documents, liquidated damages shall be paid to the City per the Bid Documents.

SUBCONTRACTORS:

The Bidder will list all proposed subcontractors by their proper corporate name and the portion of the work the subcontractor intends to perform in the spaces provided below. Contractor is also required to comply with the regulations regarding First Tier Subcontractors and applicable submittals.

Subcontractor	Work item to be performed
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____

The City reserves the right to reject any subcontractor that the City deems unfit for the scope of the work proposed.

LUMP SUM OR UNIT PRICES:

The Bidder further proposes to accept as full payment for the work proposed herein the amounts computed under the provisions of the Contract Documents and based on the following lump sum or unit price amounts. The Bidder agrees that the lump sum prices and the unit prices represent a true measure of the labor and materials required to perform the work, including all allowances for overhead and profit for each type and unit of work called for in these Contract Documents.

The City reserves the right to reject any and all bids, to waive any informalities and to accept the bid of the lowest responsible Bidder.

ADDENDA:

The Bidder acknowledges that addenda numbers _____
(Bidder insert number of each addendum received)
have been received and examined as part of these Contract Documents.

SURETY:

If the bidder is awarded the construction contract on this proposal, the surety who provides the "Performance Bond" and "Payment Bond" will be:

Name: Address:

BIDDER:

The name of the bidder submitting this proposal:

Name: Address:

The above stated address is the address to which all communications concerned with this proposal and with the contract are to be sent. The names of the principal officers of the corporation, or partnership, or of all persons interested in this proposal as principals are as follows:

If sole proprietor or partnership:

In witness hereto the undersigned has set his (its) hand this
_____ day of _____, 2015.

Signature of Bidder

Title

If corporation:

In witness whereof the undersigned corporation has caused this instrument to be executed by its duly authorized officers this

_____ day of _____, 2015 _____
Name of Corporation

By _____
President

Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

Sworn to and subscribed before me this _____ day of _____, 2015.

(SEAL)

NOTARY PUBLIC OF OREGON

My commission expires: _____

PREVAILING WAGE RATE COMPLIANCE STATEMENT

The bidder states that provisions of ORS 279C.800 – 279C.870 (Oregon Prevailing Wage Rates) will be complied with on the **Hood Avenue Irrigation and Lighting Project.**

COMPANY NAME _____

SIGNATURE _____

TITLE _____

DATE _____

- Applicable prevailing wage rates are those in effect at the time the initial specifications are first advertised for bid solicitation. ORS 279C.830(1)(c); OAR 839-025-0020(4) and (5) The workers must be paid not less than the applicable state prevailing wage rate. ORS 279C.830; OAR 839-020-0115(3)
- The contractor and every subcontractor must have a public works bond filed with the Construction Contractors Board before starting work on the project. ORS 279C.830(2)(a) Every subcontractor is required to have a public works bond filed with the Construction Contractors Board before starting work on the project. ORS 279C.830(2)(b)
- If the contractor fails to pay for labor and services, the City can pay for them and withhold these amounts from payments to the contractor. ORS 279C.515; OAR 839.025.0020(2)(a)
- The contractor must pay daily, weekly, weekend and holiday overtime as required. ORS 279C.520; OAR 839-025-020(2)(c)
- The contractor must make prompt payment for all medical services for which the contractor has agreed to pay, and for all amounts for which the contractor collects or deducts from the worker’s wages. ORS 279C.530; OAR 839-025-0020(2)(d)
- The employer must give written notice to the workers of the number of hours per day and days per week they may be required to work. OAR 839-025-0020(2)(c)

BOLI Contact:

Bureau of Labor and Industries
 Wage and Hour Division
 Prevailing Wage Unit
 800 N.E. Oregon Street, #32
 Portland, OR 97232
www.oregon.gov/BOLI

DRUG TESTING POLICY STATEMENT

The bidder states that provisions of ORS 279C.505 [Chapter 794.138] requiring an employee drug-testing program will be complied with the **Hood Avenue Irrigation and Lighting Project.**

COMPANY NAME:

SIGNATURE:

TITLE:

DATE:



PERFORMANCE BOND

(NOTE: CONTRACTOR MUST USE THIS FORM, NOT A SURETY COMPANY FORM. MUST BE ACCOMPANIED BY A POWER OF ATTORNEY FOR THE SURETY'S OFFICER AUTHORIZED TO SIGN)

We the undersigned _____
 as PRINCIPAL (hereinafter called CONTRACTOR), and _____
 _____ a corporation organized and existing under and by virtue of the laws of
 the state of _____ duly authorized to do surety business in the
 state of Oregon and named on the current list of approved surety companies acceptable
 on federal bonds and conforming with the underwriting limitations as published in the
 Authorized Insurance List in the State of Oregon published by the Office of the
 Insurance Commissioner and which carries an "A" rating and is of the appropriate class
 for the bond amount as determined by Best's Rating System, as SURETY, hereby hold
 and firmly bind ourselves, our heirs, executors, administrators, successors and assigns,
 jointly and severally, to pay to CITY OF SISTERS as OBLIGEE (hereinafter called CITY
 OF SISTERS), the amount of _____
 (equal to 100% of the total bid amount) in lawful money of the United States of America.

WHEREAS, the CONTRACTOR entered into a contract with CITY OF SISTERS
 dated _____ which Contract is hereunto annexed and made a part hereof,
 for accomplishment of the all contract terms for the project described as follows: **Hood
 Avenue Irrigation and Lighting Project.**

NOW, THEREFORE, the condition of this obligation is such that if the
 CONTRACTOR shall promptly, truly and faithfully perform all the undertakings,
 covenants, terms, conditions, and agreements of the aforesaid contract and having
 performed its obligations thereunder, then this obligation shall be null and void;
 otherwise it shall remain in full force and effect.

Whenever CONTRACTOR shall be declared by CITY OF SISTERS to be in
 default under the Contract Documents for the project described herein, the SURETY
 may promptly remedy the default by completing the project in accordance with the
 Contract Documents and the project Specifications with a contractor approved by the
 CITY OF SISTERS. SURETY, for value received, further stipulates and agrees that all
 changes, extensions of time, alterations, or additions to the terms of the Contract or
 Specifications for the above described contract are within the scope of the SURETY's

undertaking on this bond, and SURETY hereby waives notice of any such change, extension of time, alteration or addition to the terms of the ___contract or to the Work or to the Specifications. Any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications shall automatically increase the obligation of the Surety hereunder in a like amount, provided that such increase shall not exceed twenty-five percent (25%) of the original amount of the obligation without the consent of the Surety.

This obligation shall continue to bind the PRINCIPAL and SURETY, notwithstanding successive payments made hereunder, until the full amount of the obligation is exhausted.

SURETY shall indemnify, defend, and protect the CITY OF SISTERS against any claim of direct or indirect loss resulting from the failure of the CONTRACTOR (or any of the employees, subcontractors, or lower tier subcontractors of the CONTRACTOR) to faithfully perform the terms of the contract.

No right of action shall accrue on this bond to or for the use of any person or corporation other than CITY OF SISTERS or its heirs, executors, administrators, successors or assigns.

If more than one SURETY is on this bond, each SURETY hereby agrees that it is jointly and severally liable for obligations on this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 2015.

SURETY

CONTRACTOR

By:_____

By*:_____

Title:_____

Title:_____

Street Address

Street Address

City State ZIP

City State ZIP

Phone Number

Phone Number

* Must be signed by president or vice-president of Contractor.



PAYMENT BOND

(NOTE: CONTRACTOR MUST USE THIS FORM, NOT A SURETY COMPANY FORM. MUST BE ACCOMPANIED BY A POWER OF ATTORNEY FOR THE SURETY'S OFFICER AUTHORIZED TO SIGN)

KNOW BY ALL MEN BY THESE PRESENTS:

We the undersigned _____
 as PRINCIPAL (hereinafter called CONTRACTOR), and _____
 _____ a corporation organized and existing under and by virtue of the laws of
 the state of _____ duly authorized to do surety business in the
 state of Oregon and named on the current list of approved surety companies acceptable
 on federal bonds and conforming with the underwriting limitations as published in the
 Authorized Insurance List in the State of Oregon published by the Office of the
 Insurance Commissioner and which carries an "A" rating and is of the appropriate class
 for the bond amount as determined by Best's Rating System, as SURETY, hereby hold
 and firmly bind ourselves, our heirs, executors, administrators, successors and assigns,
 jointly and severally, to pay to CITY OF SISTERS as OBLIGEE (hereinafter called CITY
 OF SISTERS), the amount of _____ in lawful
 money of the United States of America.

WHEREAS, the CONTRACTOR entered into a contract with CITY OF SISTERS
 dated _____, which Contract is hereunto annexed and made a part
 hereof, for accomplishment of the all contract terms for the project described as follows:
Hood Avenue Irrigation and Lighting Project.

NOW, THEREFORE, the condition of this obligation is such that if the
 CONTRACTOR shall promptly, truly and faithfully perform all the undertakings,
 covenants, terms, conditions, and agreements of the aforesaid contract and having
 performed its obligations thereunder and promptly make payments to all persons, firms,
 subcontractors, corporations and/or others furnishing materials for or performing labor in
 the prosecution of the Work provided for in the aforesaid contract, then this obligation
 shall be null and void; otherwise it shall remain in full force and effect.

Whenever CONTRACTOR shall be declared by CITY OF SISTERS to be in
 default under the Contract Documents for the project described herein, the SURETY
 shall promptly remedy the default by completing the project in accordance with the
 Contract Documents and the project Specifications with a contractor approved by the
 CITY OF SISTERS. SURETY, for value received, further stipulates and agrees that all

changes, extensions of time, alterations, or additions to the terms of the Contract or Specifications for the above described contract are within the scope of the SURETY's undertaking on this bond, and SURETY hereby waives notice of any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications. Any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications shall automatically increase the obligation of the Surety hereunder in a like amount, provided that such increase shall not exceed twenty-five percent (25%) of the original amount of the obligation without the consent of the Surety.

This obligation shall continue to bind the PRINCIPAL and SURETY, notwithstanding successive payments made hereunder, until the full amount of the obligation is exhausted.

SURETY shall indemnify, defend, and protect the CITY OF SISTERS against any claim of direct or indirect loss resulting from the failure of the CONTRACTOR (or any of the employees, subcontractors, or lower tier subcontractors of the CONTRACTOR) to faithfully perform the terms of the contract.

No right of action shall accrue on this bond to or for the use of any person or corporation other than CITY OF SISTERS or its heirs, executors, administrators, successors or assigns.

If more than one SURETY is on this bond, each SURETY hereby agrees that it is jointly and severally liable for obligations on this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 2015.

SURETY

CONTRACTOR

By:_____

By*:_____

Title:_____

Title:_____

Street Address

Street Address

City State ZIP

City State ZIP

Phone Number

Phone Number

* Must be signed by president or vice-president of Contractor.

AFFIDAVIT #1

TO: CITY OF SISTERS, OREGON

RE: **Hood Avenue Irrigation and Lighting Project**

GENTLEMEN:

COMES NOW _____,

doing business as _____,

who being first duly sworn, deposes and says:

That all sums due to suppliers, materialmen, subcontractors, sub-subcontractors, employees and government agencies for wages, goods, services, products, or equipment furnished in connection with the above project have been paid in full. Except as hereinafter stated, this includes, but not limited to all State and Federal withholding taxes, worker's compensation insurance, Oregon unemployment insurance, FUTA unemployment insurance, and social security taxes.

The only obligations which have not been paid and which are known to us are as follows:

- 1. _____ \$ _____
- 2. _____ \$ _____
- 3. _____ \$ _____
- 4. _____ \$ _____
- 5. _____ \$ _____

If extra space is needed, please attach an extra sheet, date and sign.

WE HEREBY authorize you to pay from the remaining funds, the foregoing obligations by making a check payable to us and to the unpaid creditor/s jointly.

DATED this _____ day of _____, 2015.

By: _____

Title: _____

STATE OF OREGON)
)ss.
County of _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 2015, by _____, the authorized representative for said business, and that (s)he was authorized to sign this affidavit.

NOTARY PUBLIC FOR OREGON

My Commission Expires: _____

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20____, by and between _____, hereinafter called "OWNER"
(Name or Owner)

and _____ doing business as (an individual,) or (a partnership, or (a corporation) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of the **Hood Avenue Irrigation and Lighting Project.**

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within _____ calendar days after the date of the NOTICE TO PROCEED and will complete the same within _____ calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ _____, or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

- A Invitation to Bid
- B Bid Schedule
- C Contractor's Experience Form
- D Bid Bond
- E First Tier Contractor Disclosure Form

- F Proposal
 - G Non-Collusion Affidavit
 - H Prevailing Wage Rate Compliance Statement
 - I Drug Testing Policy Statement
 - J Performance Bond
 - K Payment Bond
 - L Affidavit #1
 - M Agreement
 - N City of Sisters General Conditions
 - O Exhibit "A" Public Contracting Code
 - P City of Sisters Specifications
 - Q Drawings prepared by BECON Engineering dated October, 2015
 - R Special Provisions dated October, 2015
 - S ADDENDA:
-

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in _____ number of copies, each of which shall be deemed an original on the date first above written.

OWNER

By _____

Name _____

Title _____

(Seal)

ATTEST:

Name _____

Title _____

CONTRACTOR:

By _____

Name _____

Address _____

(Seal)

ATTEST:

Name _____

Title _____



GENERAL CONDITIONS

101 DEFINITION AND ABBREVIATIONS

101.1.00 DEFINITIONS

Whenever the following terms are used in these Standard Specifications, the Agreement, the Supplemental Specifications, Special Provisions, on the Plans, and in any other Contract Documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows, applicable to both the singular and plural thereof.

Addendum - A written or graphic modification to any of the Contract Documents issued before the opening of bids, which revises, adds to, or deletes information in the Solicitation Documents or previously issued Addenda.

Additional Work – Increased quantities of any Pay Item, within the scope of the Contract, for which a unit price has been established.

Advertisement – The public announcement inviting bids or quotes for work to be performed and materials to be furnished.

Agency – The city, county, state, special district, or political subdivision, as applicable, which has entered into an Agreement with the Contractor.

Aggregate – Rock product of a specified quality and gradation.

Agreement - The written contract between Owner and Contractor, signed and executed by both parties, describing the work to be performed and compensation to be paid and other Contract Documents that are attached to the Agreement.

Attorney in Fact – An Entity, or person, appointed by another to act in its place, either for some particular purpose, or for the transaction of business in general.

As Approved – A phrase understood to mean reviewed and accepted by the City Engineer or his authorized representative.

Base – A course or layer of specified aggregate material of specified thickness placed below the pavement course.

Bid – A competitive offer submitted in response to an Invitation to Bid or solicitation of a price to supply materials or services.

Bid Bond – The Surety bond for a Bid guarantee.

Bid Closing – The date and time, specified in the advertisement or Addenda, after which Bids, Bid modifications, and Bid withdrawals will no longer be accepted.

Bidder – An Entity, person, firm, partnership, or corporation submitting a formal proposal on a project.

Bid Security - A certified check, cashier's check, or surety bond, required to be submitted with the Proposal, to guarantee execution of the Agreement.

Bid Schedule – The list of Pay Items, their units of measurement, and estimated quantities in the Proposal Documents.

Boulders – Particles of rock too large to pass a 12-inch square opening.

Calendar Day – Any day shown on the calendar, beginning and ending at midnight.

Change Order - A written order issued by the Engineer or Owner to the Contractor, and signed by an authorized agent of the City of Sisters, modifying Work required by the

Contract and, if applicable, establishing the basis of payment for the modified work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

City - The City of Sisters, including its duly authorized representatives.

City Council - The duly elected City Council of the City of Sisters.

City Engineer - See Engineer.

Contract - See Agreement.

Contract Amount (Contract Price)– Total sum of the Contract Pay Items calculated by multiplying the Pay Item quantities by the unit prices in the Schedule of Items, and including all Extra Work authorized by Change Orders.

Contract Documents – Solicitation Documents, Proposal, Agreement, General Conditions, Supplemental Conditions, Specifications, and Drawings, including all modifications thereof incorporated into the Documents before their execution, and including all Change Orders, written orders and authorizations issued by the Agency, Permits, orders, and authorizations obtained by the Contractor applicable to the Project, and all other documents and requirements incorporated by specific reference thereto.

Contract Item (Pay Item) - A specific unit of work for which a price is provided in the proposal.

Contractor - The entity, person or persons, partnership, corporation, or joint venture, who has entered into an agreement with the City as party or parties of the second part, or her/his or their legal representatives. The word "Contractor" shall be taken to mean the Contractor, her/his agents, employees, officials, subcontractors, or anyone connected with the work herein set forth on behalf of the Contractor.

Contract Time - The amount of time allowed to complete the Work under the Contract, counted as the number of calendar or work days stated in the Contract Documents, and including authorized time extensions, starting from the date of the Notice to Proceed. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar days, the contract shall be completed by that date.

Developer - A private entity, person, partnership or corporation, who has expressed the intention of providing, or who has undertaken to provide, a facility, structure, or like public improvement project to be accepted for maintenance and ownership by the City.

Design Engineer - A private engineering firm retained by the City, Developer, or Owner to provide design, construction management, or some other service necessary for the construction of the proposed public facility.

Drawings - See Plans.

Engineer – The term "Engineer" shall signify the "City Engineer or his/her authorized representative".

Entity – A natural person capable of being legally bound, sole proprietorship, limited liability company, corporation, partnership, limited liability partnership, limited partnership, profit or nonprofit unincorporated association, business trust, two or more persons having a joint or common economic interest, or any other person with legal capacity to contract, or a government or governmental subdivision.

Equipment - All machinery, tools, manufactured products, and fabricated items, together with the necessary supplies for upkeep and maintenance, and all apparatus necessary for the proper construction and acceptable completion of the work, or specified for incorporation into the Work.

Establishment Period – The time specified to assure satisfactory establishment and growth of planted materials.

Extra Work – Work not included in the Contract, but deemed by the Engineer to be necessary to complete the Project.

Final Acceptance – Written confirmation by the City that the Project has been completed in accordance with the Contract, with the exception of latent defects and Warranty obligations, if any, and has been accepted for maintenance by the City.

Final Inspection – The inspection conducted by the Engineer to determine that the Project has been completed in accordance with the Contract.

Incidental – A term identifying those acts, services, transactions, property, or other items for which the City will make no separate or additional payment.

Inspector – The representative of the City Engineer authorized to inspect and report on Contract performance, and assigned to witness and verify tests of the work and the materials furnished or being furnished by the City of Sisters.

Intention of Terms - Whenever, in these specifications or on the plans, the words "require", "permitted", "ordered", "designated", "prescribed" or words of like import are used, it shall be understood that the requirements, permission, order, designation, or prescription of the City Engineer is intended; and similarly, the words "approved", "acceptable", "satisfactory", or words of like import shall mean approved by, or acceptable to, or satisfactory to the City Engineer, subject in each case to the final determination of the City.

Laboratory - The official testing laboratories of the City or such other laboratories as may be designated by the City Engineer.

Legal Holiday - The following are legal holidays for the City, subject to subsequent change by law: Sundays, New Year's Day, M.L. King's Birthday, President's day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving and the Friday after Thanksgiving, Christmas, and other days declared as holidays by public proclamation. When a legal holiday, other than Sunday falls on a Sunday, the Monday immediately following is a legal holiday.

Materials - Any natural or manmade substance specified for use in the construction of the Project or for incorporation into the Work.

Modification -

- (a) A written amendment of the Contract Documents signed by both parties.
- (b) A Contract Change Order issued by the City or Owner.
- (c) Written clarification or interpretation issued by the City Engineer.
- (d) A written order for a minor change or alteration in the work issued by the City Engineer.
- (e) A modification may only be issued after execution of the Agreement.

Notice of Award - The written notice by City to the apparent successful Bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, the City will execute and deliver the Agreement to him.

Notice to Proceed - A written notice authorizing the Contractor to begin performance of contract work. If applicable, the Notice to Proceed shall state the date on which the Contract Time will commence to run.

Or Equal - The term "or equal" shall be understood to mean that an "equal" product is the same or better than the product named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the project design requirements will be made by the City Engineer. Such "equal" products shall not be purchased or installed by the Contractor without the City Engineer's written approval.

Owner - The legal entity or contracting agency for which the work is being performed. Where applicable the Developer is the owner until such time as the improvements are accepted by the City for maintenance.

Pavement – Asphalt Concrete or Portland cement concrete placed for the use of motor vehicles, bicycles, or pedestrians on streets, roadways, shoulders, Multi-use paths and parking areas.

Pay Item – A specific unit of Work for which a price is provided in the Contract.

Payment Bond - The approved form of security furnished by the Contractor and Contractor's surety as a guaranty of the Contractor's performance of its obligation to pay promptly in full all sums due for materials, equipment, and labor furnished to complete construction of the work.

Performance Bond - The approved form of security furnished by the Contractor and Contractor's surety as a guaranty that the Contractor will complete the work in accordance with the terms of the Agreement.

Plans – Standard and Supplemental Drawings, profiles, cross sections, elevations, details and other working drawings and supplementary drawings, or reproductions thereof, signed by the City Engineer, which show the location, character, dimensions, and details of the work to be performed. Plans may either be bound in the same book as the balance of the Contract Documents or bound in separate sets, and are a part of the Contract Documents regardless of the method of binding.

Project – The sum of all Work to be performed under the Contract.

Proposal - The written offer of a bidder submitted on the approved proposal form(s) agreeing to enter into a Contract with the City to perform the Work described in the Contract Documents and stating the unit prices or lump sum amounts for the items of Work.

Proposal Guaranty - See Bid Security.

Reference Specifications - Bulletins, standards, rules, methods of analysis or test, codes and specifications included by reference in the Contract Documents.

Special Provisions - See SPECIAL SPECIFICATIONS.

Special Specifications - Requirements peculiar to the project; and modifications to the Standards and Specifications. Special Specifications are used interchangeably with Special Provisions.

Specifications - The terms, provisions and requirements contained herein as supplemented by such special conditions as may be necessary, pertaining to either the materials and/or work to be furnished under the Agreement.

Standard Specifications - Codes, rules and regulations referred to in these specifications by basic name or designation only, shall be considered to be of the latest issue with all amendments as of the date of these specifications. Applicable portions of such shall become a part of these Contract Documents.

Structures - Facilities such as bridges, culverts, catch basins, inlets, retaining walls, cribbing, storm and sanitary sewer lines, water lines, utility cables and pipelines, underdrains, electrical ducts, manholes, lighting fixtures and bases, transformers, flexible and rigid pavements; buildings, vaults, and other man-made features that may be encountered in the work and not otherwise classified herein.

Subcontractor - An individual, firm, or corporation having a direct contract with the Contractor or any other subcontractor for the performance of a portion of the work on the project, or those who furnish material for the project.

Subbase – A course of specified material of specified thickness between the Subgrade and a Base.

Subgrade – The top surface of completed earthwork on which Subbase, Base, Surfacing, Pavement, or a course of other material is to be placed.

Superintendent - The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the City Engineer, and who shall supervise and direct the construction.

Surety - A corporation, licensed to conduct the business of surety in the State of Oregon, and named in the current list of approved sureties published by the U. S. Treasury Circular 570. All bonds signed on behalf of the Surety must be accompanied by a certified copy of

the authority to act.

If the Surety on any bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in the State of Oregon, or it ceases to meet the requirements outlined above, Contractor shall within five (5) days thereafter, substitute another Bond and Surety, both of which shall be acceptable to City of Sisters.

Topsoil – Soil ready for use in a planting bed.

Traveled Way – That part of a street or highway for moving vehicles, exclusive of auxiliary lanes, berms, curbs, and shoulders.

Typical Section – The Cross Section established by the Plans which represents in general the lines to which the Contractor shall work in the performance of the Contract.

Unsuitable Material – Frozen material, or material that contains organic matter, muck, humus, peat, sticks, wood chips, debris, chemicals, toxic matter, or other deleterious materials not normally suitable for use in earthwork.

Utility – A line, facility, or system for producing, transmitting, or distributing communications, power, electricity, heat, gas, oil, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity which directly or indirectly serves the public.

Work - the term shall signify all materials, labor, tools and all appliances, machinery and appurtenances necessary to perform and complete the construction of all facilities specified in the Contract Documents or shown on the Plans, and such additional items of labor, material, and equipment not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure. As used herein, "provide" shall be understood to mean "furnish and install".

Working Day - Any and every calendar day excluding Saturdays, Sundays, and legal holidays. Unless otherwise permitted a working day occurs between the hours of 7:00 am and 5:00 pm.

Written Notice - A written communication delivered to the individual, or to a member of the firm, or to an officer of the corporation for whom it is intended, or, if delivered or sent by registered mail, to the last business address known to him who gives the notice.

101.2.00 ABBREVIATIONS

Meanings of abbreviations used in the Standard Specifications, Supplemental Specifications, Special Provisions, on the Plans, and in other Contract Documents are as follows:

AASHTO	American Association of State Highway and Transportation Officials
AC	Asphalt Concrete
ACI	American Concrete Institute
AGC	Associated General Contractors of America
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
APA	American Plywood Association
APWA	American Public Works Association
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWG	American Wire Gage
CRSI	Concrete Reinforcing Steel Institute
DEQ	Department of Environmental Quality, State of Oregon
FHWA	Federal Highway Administration, U.S. Department of Transportation
HMAC	Hot Mixed Asphalt Concrete
MFTP	(ODOT) Manual of Field Test Procedures
MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways, FHWA, U.S. Department of Transportation
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA:	National Fire Protection Association
NIST	National Institute of Standards and Technology
NPDES	National Pollutant Discharge Elimination System
NPS	Nominal Pipe Size (dimensionless)
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
ORS	Oregon Revised Statutes
OR-OSHA	Oregon Occupational Safety and Health Division of the Department of Consumer and Business Services.
OSHA	Occupational Safety and Health Administration, U.S. Department of Labor
PCA	Portland Cement Association
PCP	Pollution Control Plan
RAP	Reclaimed Asphalt Concrete Pavement
SRCM	Soil and Rock Classification Manual (ODOT)
UBC	Uniform Building Code (as adopted by the City of Redmond and State)
UL	Underwriters Laboratories, Inc
UPC	Uniform Plumbing Code (as adopted by the City of Redmond and State)
WWPA	Western Wood Products Association

102 CONTRACT DOCUMENTS

102.1.00 INTENT OF CONTRACT DOCUMENTS

The intent of the Contract Documents is to describe a complete project to be constructed in accordance with the Agreement, Standard and Supplemental Specifications, Special Provisions, Plans and Details. The Contract Documents are complimentary, and what is called for by any one shall be as binding as if called for by all. Any work that can be reasonably inferred from the Contract Documents as being required to produce the intended results shall be supplied whether or not it is specifically called for. Materials or work described in words which so applied have a well known technical and trade meaning shall be held to refer to such recognized standards.

102.2.00 INCONSISTENCIES AND OMISSIONS

Any inconsistency, conflict, error or omission found in the Contract Documents shall be reported to the City Engineer in writing immediately and before proceeding with the work affected thereby; however, Contractor shall not be liable to City of Sisters or City Engineer for failure to discover any conflict error or inconsistency in the Contract Documents. The City Engineer will clarify inconsistencies or omissions, in writing, within a reasonable time. The decision of the City Engineer shall be final.

In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

1. Modifications, the last in time being the first in precedence, including all Addenda and Change Orders.
2. Agreements
3. Supplemental Specifications
4. Special Provisions or Specifications
5. Standard Specifications
6. Instructions to Bidders
7. General Conditions
8. Reference Specifications
9. Plans

Figure dimensions on plans shall take precedence over scale dimensions. Detailed Drawings and Approved Shop Drawings shall take precedence over general plans.

102.3.00 ALTERATIONS AND CHANGE ORDERS

The City of Sisters, without invalidating the Agreement, may at any time or from time to time, order extra work or make changes by modifying, adding to, or deducting from the work. All such work shall be authorized by Change Order and executed under the conditions of the original Agreement, except that claim by either party for time and payment increase or decrease caused thereby shall be adjusted at the time of ordering such change.

The City Engineer may authorize minor changes in the work not involving extra cost, and not inconsistent with the overall intent of the Contract Documents.

Additional work performed by Contractor, without authorization of a Change Order, will not entitle the Contractor to an increase in the Contract Price except for an emergency endangering life or property.

If the work is reduced by modifications directed by the Engineer, such action shall not

constitute a claim for damages based on loss of anticipated profits.

102.4.00 VERIFICATION OF DATA

It is understood and agreed that the Contractor has, by careful examination, satisfied him/herself as to the nature and location of the work; the conformation of the grounds; the character, quality, and quantities needed preliminary to and during the prosecution of the work; the general and local conditions; and all other matters which may in any way affect the work under this Agreement. No verbal agreement or conversation with any officer, agent, or employee of the City of Sisters, either before or after the execution of this Agreement, shall affect or modify any of the terms or obligations contained in the Agreement.

102.5.00 DOCUMENTS TO BE FURNISHED

The City Engineer will furnish to the Contractor, on request, three copies of the Contract Documents and three sets of full scale Plans. Additional copies of Contract Documents or Plans may be obtained on request by paying the actual cost of reproducing the Contract Documents or Plans.

102.6.00 DOCUMENTS TO BE KEPT AT THE WORK SITE

The Contractor shall keep one copy of the Contract Documents at the work site, in good condition, available to the City Engineer and to the City Engineers' representatives.

The Contractor shall maintain on the job site, and make available to the City Engineer upon request, one current marked-up set of the Design Drawings, which accurately indicate all approved variations in the completed work that differ from the design information shown on the Drawings.

102.7.00 OWNERSHIP OF DOCUMENTS AND DRAWINGS

All Plans, Drawings, Specifications and copies thereof furnished by the City Engineer are the property of the City of Sisters and are not to be used on other work; and are to be returned upon request at the completion of the work, with the exception of the signed contract set. Any reuse of these materials without specific written authorization by the City Engineer will be at the sole risk of the user and without any liability or legal expense to the City. All models used in the Work are the property of the City of Sisters.

102.8.00 RECORD DOCUMENTS

The Contractor shall maintain copies of all Drawings, Specifications, Addenda, Change Orders, Contract Modifications, and written interpretations and clarifications in good order and annotated to show changes made during construction. Upon completion of the Work, these record documents, samples and shop drawings will be delivered to the City Engineer for Owner.

103 THE CITY ENGINEER

103.1.00 AUTHORITY OF THE CITY ENGINEER

The City Engineer shall be the City of Sisters representative during the construction and shall observe the work in progress on behalf of the City. The general inspection of the construction will not, however, relieve the Contractor(s) from their obligation to conduct comprehensive inspections and to maintain full responsibility for the methods and sequence of construction, the safety precautions incidental thereto, and for performing the

construction work in accordance with the Contract Documents. The City Engineer shall also have the authority to reject all work and materials which do not conform to the Plans or Specifications, or other Contract Documents. The City Engineer will render decisions, in writing, on all claims of the City or the Contractor, and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents. The City Engineer's estimates and decisions shall be the condition precedent to the right of the Contractor to any action on the Agreement and to any right to receive additional money under the Agreement. The City Engineer shall have the authority to order changes in the work or extra work, as provided in the paragraph "Alterations and Change Orders" of the Section CONTRACT DOCUMENTS.

The City Engineer will not be responsible and has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences, or procedures required for the Contractor to perform work.

103.2.00 CITY ENGINEER'S REPRESENTATIVES (INSPECTORS)

Assistants may be assigned to various portions of the work by the City Engineer. It is understood that such assistants shall have the power, in the absence of the City Engineer, to issue clarifications and make decisions within the limitations of the authority of the City Engineer.

103.2.01 AUTHORITY AND DUTIES OF THE ENGINEER'S REPRESENTATIVE

The City Engineer may appoint assistants to inspect all materials used and all work done. Such inspection may extend to any or all parts of the work and to the preparation or manufacture of the materials to be used. The Inspectors will be authorized to revoke, alter, enlarge, or relax the provision on the work, to check the necessary lines and grades, and to keep the Engineer informed as to the progress of the work and the manner in which it is being done; also to call the attention of the Contractor to any discrepancies from approved plans and specifications. Failure of the Inspector or the Engineer to call the attention of the Contractor to faulty work or discrepancies from the plans or specifications shall not constitute acceptance of said work.

The Inspector will not be authorized to approve or accept any portion of the work, nor to issue instructions contrary to the approved plans and specifications. The Inspector will have authority to reject defective material and to suspend any work that is being improperly done, subject to the final decision of the Engineer. The Inspector will exercise such additional authority as may, from time to time, be delegated to the Inspector by the Engineer. The authority of such Engineer's, representatives, assistants, and inspectors shall, however, be limited to the particular portion or phase of the work to which they are assigned, and by the particular duties assigned to them. Upon request, the assignment and duties of the Inspector(s) will be provided in writing.

103.3.00 INSPECTION

The City Engineer and/or Inspector will make periodic visits to the site to observe the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the Contract Documents. The City Engineer and/or Inspector will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the work. His/her efforts will be directed toward providing assurance for the City of Sisters that the completed project will conform to the requirements

of the Contract Documents. On the basis of his/her on-site observations as an experienced and qualified professional, the Inspector will keep City of Sisters staff informed in the progress of the work and will endeavor to guard City of Sisters against defects and deficiencies in the work of Contractors.

103.4.00 REJECTED MATERIAL

Any material condemned or rejected by the City Engineer, or authorized Inspector, because of non-conformity with the Contract Documents shall be removed at once from the vicinity of the work by the Contractor, at Contractors' own expense, and shall not be used on the work.

103.5.00 UNNOTICED DEFECTS

The City Engineer will not be responsible for the acts or omissions of Contractor, or any subcontractor, or other persons at the site performing any of the Work. Any defective work or material that may be discovered by the City Engineer before the final acceptance of work, or before final payment has been made, or during the guarantee period, shall be removed and replaced by work and materials which shall conform to the provisions of the Contract Documents. Failure on the part of the Engineer to condemn or reject bad or inferior work or materials shall not be construed to imply acceptance of such work or materials.

103.6.00 RIGHT TO RETAIN IMPERFECT WORK

If any part or portion of the work done or material furnished under this Agreement shall prove defective and not in accordance with the Plans and Specifications, and if the imperfection in the work shall not be of sufficient magnitude or importance as to make the work dangerous or undesirable, or if the removal of such work will create conditions which are dangerous or undesirable, the City shall have the right and authority to retain such work. In such case, an appropriate amount shall be deducted from amounts due the Contractor for that portion of the Work, or if acceptance occurs after approval of final payment, an appropriate amount shall be paid by Contractor to City of Sisters.

103.7.00 LINES AND GRADES

The Design Engineer after consultation with the City Engineer will provide survey monuments or reference points for use in determining lines and grades. The Contractor is responsible for determining the lines and grades to be used for the construction as shown on the plans and in these Contract Documents.

All monuments, stakes, marks, and other information shall be carefully preserved by the Contractor, and in case of their careless or unnecessary destruction or removal by the Contractor or Contractors' employees, such stakes, marks and other information will be replaced at the Contractor's expense.

103.8.00 DETAIL DRAWINGS AND INSTRUCTIONS

The City Engineer will furnish, with reasonable promptness, additional instructions by means of drawings or otherwise, as are necessary for the proper execution of the work. All such drawings and instructions will be consistent with the Contract Documents.

103.9.00 SHOP DRAWINGS AND SAMPLE SUBMITTAL

The Contractor shall submit in quadruplicate to the Engineer for this review such shop drawings, electrical diagrams, and catalog cuts for fabricated and manufactured items

(including mechanical and electrical equipment) as required by the Contract Documents. Drawings shall be submitted in sufficient time to allow the City Engineer not less than ten (10) regular working days for examining the drawings.

The drawings shall be accurate, distinct, and complete, and shall contain all required information, including satisfactory identification of items, units, and assemblies in relation to the contract drawings and specifications.

Unless otherwise approved by the City Engineer, shop drawings shall be submitted only by the General Contractor, who shall indicate by a signed stamp on the drawings, or other approved means, that the Contractor has checked the shop drawings for dimensions and relationship with work of all other trades involved, and that the work shown is in accordance with contract requirements. The practice of submitting incomplete or unchecked shop drawings for the City Engineer to correct or finish will not be acceptable. Shop drawings which in the opinion of the City Engineer clearly indicate that they have not been checked by the General Contractor will be considered not complying with the intent of the Contract Documents, and will be returned without review to the Contractor for resubmission in the proper form.

When the shop drawings have been reviewed by the City Engineer, two sets of submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the drawing may be rejected and one set will be returned to the Contractor with such changes or corrections indicated. The Contractor shall have the drawings corrected, and resubmit the corrected drawings in quadruplicate, unless otherwise directed by the City Engineer. No changes shall be made by the Contractor to resubmitted shop drawings other than those changes indicated by the City Engineer.

The review of such drawings and catalog cuts by the City Engineer shall not relieve the Contractor from the responsibility for correctness of dimensions, fabrication details, and space requirements, or for deviations from the contract drawings or specifications, unless the Contractor has called attention to such deviations in writing by a letter accompanying the drawings, and the City Engineer approves the change or deviations in writing at the time of submission. Nor shall review by the City Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the City Engineer, the Contractor shall state in the letter whether or not such deviations involve any deduction in the Contract Price or extra cost adjustments. The approval of a separate item as such will not indicate approval of the assembly in which the item functions.

The Contractor shall also submit to the City Engineer for approval with such promptness as to cause no delay in the Work all samples required by the Contract Documents. All samples shall be clearly identified as to material, manufacturer, and any pertinent catalog number if applicable, and the use in the Work for which it is intended.

Where a shop drawing or sample submittal is required by the Contract Documents, no related work shall be commenced until the submittal has been approved by the City Engineer.

104 THE CONTRACTOR AND EMPLOYEES

104.1.00 CONTRACTOR AS AN INDEPENDENT AGENT

The Contractor shall perform all work under this Agreement as an Independent Agent and shall not be considered as an agent of the City, nor shall the Contractor's subcontractors or employees be considered as sub-agents of the City.

104.2.00 SUBCONTRACTING

The Contractor shall include, in the space provided in the Letter for Employment of Subcontractors, the legal corporate names of all proposed subcontractors and the portion of the work that these proposed subcontractors or other persons or organizations shall perform.

The Contractor agrees that she/he is as fully responsible to the City for the acts and omissions of subcontractors and of persons either directly or indirectly employed by them as he/she is for the acts and omissions of persons directly employed by Contractor. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the City of Sisters.

Subcontractors shall be in accordance with, and the Contractor shall be bound by, the following provisions:

1. All subcontractors shall be subject to the approval of the City Engineer.
2. All subcontracts shall be in writing and shall provide that all work to be performed thereunder shall be performed in accordance with the terms of these Contract Documents.
3. If requested, true copies of any and all subcontracts shall be furnished to the City Engineer; however, prices may be omitted.
4. Subcontractors shall conform to the regulations governing employment of labor and payment of wages.
5. The subcontracting of any part of the work will in no way relieve the Contractor of his/her responsibility or liability or obligations under these Contract Documents.

104.3.00 INSURANCE AND LIABILITY

The Contractor shall at all times maintain in force, at Contractor's expense, each insurance policy noted below. Insurance coverage must apply on a primary and non-contributory basis. All insurance policies, except Professional Liability, shall be written on an occurrence basis and be in effect for the term of this contract. Policies written on a "claims made" basis must be approved and authorized by the City of Sisters. Formats of insurance certificates and endorsement(s) must be acceptable and approved by the City.

All contractors shall obtain Workers Compensation insurance in compliance with ORS 656.017, requiring Contractor and all subcontractors to provide workers' compensation coverage for all subject workers, or provide certification of exempt status. Employers' Liability Insurance with coverage limits of not less than \$500,000 must be included.

Contractors who provide specific professional advice which the City relies on (e.g. - engineers, attorneys, architects, insurance agents) are required to obtain Professional Liability insurance with a combined single limit of not less than \$1,000,000 per occurrence/\$2,000,000 aggregate. Professional Liability insurance covers damages caused by error, omission, or negligent acts related to professional services provided under this Contract. The policy must provide extended reporting period coverage, sometimes referred to as "tail

coverage” for claims made within two years after this contract is completed. The City will determine the contractor's need to obtain Professional Liability insurance.

All contractors shall obtain Commercial General Liability insurance with a combined single limit of not less than:

Projects with value up to two million dollars: \$1,000,000 per occurrence/ \$2,000,000 aggregate.

Projects with value from two million dollars to five million dollars: \$2,000,000 per occurrence/ \$5,000,000 aggregate.

Projects with value over five million: Insurance amount to be determined by the City of Sisters on individual contract basis.

Commercial General Liability insurance shall include coverage for personal injury, bodily injury, advertising injury, property damage, premises, operations, products, contractual liability, and completed products/operations. *By separate endorsement*, the policy shall name The City of Sisters, its officers, directors, agents, employees and volunteers as an additional insured. The additional insured endorsement shall not include declarations that reduce any per occurrence or aggregate insurance limit and shall be primary and non-contributing endorsements. The contractor shall provide additional coverage based on any outstanding claim(s) made against policy limits to ensure that minimum insurance limits required by the City are maintained. Construction contracts may include aggregate limits that apply on a “per location” or “per project” basis.

Automobile Liability insurance with a combined single limit of not less than \$1,000,000 coverage for bodily injury and property damage resulting from operation of a motor vehicle driven by or on behalf of Contractor during the course of providing services under this contract. Commercial Automobile Liability Insurance shall provide coverage for *any* motor vehicle (symbol 1 on some insurance certificates).

Additional Requirements: Contractor shall pay all deductibles and retentions. A cross liability clause or separation of insured's condition must be included in all commercial general liability policies required by this Contract. Contractor's coverage will be primary in the event of loss.

Certificate of Insurance Required: Contractor shall furnish a current Certificate of Insurance to the City with the signed Contract. The Certificate shall provide that there shall be no cancellation, termination, material change, or reduction of limits of the insurance coverage without at least 30 days written notice from the Contractor's insurer to the City. The Certificate shall also state the deductible or, if applicable, the self-insured retention level. For commercial general liability coverage, the Certificate shall also provide, by policy endorsement, that The City of Sisters, its agents, directors, officers, employees and volunteers are additional insureds with respect to Contractor's services provided under this Contract. The endorsement must be in a format acceptable to The City of Sisters. If requested, complete copies of all insurance policies shall be provided to the City.

The Contractor's liability and property insurance with a Completed Products/Operations Endorsement shall be maintained after the completion of the project for the full warranty period. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from

operations under this Agreement.

When the construction is to be accomplished within a public or private right-of-way requiring special insurance coverage, the Contractor shall conform to the particular requirements and provide the required insurance. The Contractor shall include in liability policy all endorsements that the said authority may require for the protection of the authority, its officers, agents, and employees. Insurance coverage for special conditions, when required shall be provided as set forth in the SUPPLEMENTARY CONDITIONS.

In case of the breach of any provision of this article, the City, at its option, may take out and maintain at the expense of the Contractor such insurance as the City may deem proper and may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Agreement.

104.4.00 CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

The Contractor shall not commence work under this Agreement until Contractor has obtained all the insurance required hereunder and such insurance has been reviewed by the City of Sisters, nor shall the Contractor allow any subcontractor to commence work on subcontract until all similar insurance required for that portion of the work has been so obtained. Review of the insurance by the City shall not relieve or decrease the liability of the Contractor hereunder.

104.5.00 NO PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the provisions hereof in or exercising any authority granted by the Agreement, there will be no personal liability upon any public official.

104.6.00 SUPERVISION

The Contractor shall keep on the project, during its progress, competent supervisory personnel. The Contractor shall designate, in writing, before starting work, an authorized representative who shall have complete authority to represent and to act for the Contractor. The Contractor shall give efficient supervision to the work, using his/her best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, and procedures, and for providing adequate safety precautions and coordinating all portions of the work under the Agreement. The Contractor shall be responsible to see that the finished work complies accurately with the Contract Documents.

104.7.00 NONRESPONSIBILITY OF THE CITY OF SISTERS

Indebtedness incurred for any cause in connection with this work must be paid by the Contractor, and the City is hereby relieved at all times from any indebtedness or claim other than payments due under terms of the Agreement.

104.8.00 PROPERTY RIGHTS IN MATERIAL

Nothing in the Agreement shall be construed as vesting in the Contractor any right to the property or in the material used after they have been attached or affixed to the work or the soil and accepted by the City. All such materials shall become the property of the City upon being so attached or affixed and accepted.

104.9.00 RECEPTION OF CITY ENGINEER'S DIRECTION

The superintendent, or other duly authorized representative of the Contractor, shall represent the Contractor in his/her absence; and all directions given to him/her shall be as

binding as if given to the Contractor.

104.10.00 FACILITIES AND SANITATION

Necessary sanitary conveniences, properly secluded from public observation, shall be erected and maintained by the Contractor at all times while persons are employed on the work; and the use of such sanitary conveniences shall be strictly enforced. The location of such conveniences shall be approved by the City Engineer.

104.11.00 EMPLOYEES

The Contractor shall employ only competent skillful labor to perform the work. The Contractor shall at all times enforce strict discipline and good order among employees. The Contractor shall comply with all applicable labor rules, wage scales, and regulations, including nondiscriminatory laws, of the Government of the United States, the State, County, and City or Town in which the work is to be done.

105 OREGON LAW FOR PUBLIC CONTRACTS

105.1.00 DESCRIPTION

When the Contract Documents concern Public Works for the state or any county, municipality, or political subdivision created by its laws, the applicable statutes of the State of Oregon shall apply. For this reason, Sections 279C.800 through 279C.870 of the Oregon Revised Statutes, as amended or superseded, including the latest additions and revisions, are incorporated by reference as part of these Contract Documents.

105.2.00 REQUIREMENTS

ORS Sections 279C.800 *et seq.* provide for the prevailing wage requirements of Oregon law for Public Contracts.

1. Concerning payments for laborers and material, contributions to Workmen's Compensation Board, prevention of liens, payment of withholding taxes.
2. Concerning the maximum hours of labor, payment of medical care and attention to employees, liability to workers for violation of minimum wage rate requirements.
3. Concerning written notice to all employees of the number of hours per day and days per week that they may be required to work.
3. Concerning payment of claims by public officers, termination of Agreement because of a national emergency, conditions concerning the forfeiture of the Agreement.
4. Concerning payment of not less than prevailing wage rates, the Contractor shall pay not less than the prevailing rate of wages in conformance with ORS 279C.825. Certification of wage payments by the Contractor shall be submitted to the City of Redmond in conformance with ORS 279C.845. Wage certification forms shall be provided by the Contractor.
5. The schedule of minimum hourly wage rates, as determined by the Commissioner of the Bureau of Labor and Industries (BOLI) of the State of Oregon is included by reference within these Contract Documents. Any revisions will be delivered to all bidders in the form of Addendum to the Agreement.
6. The City does not guarantee that labor can be procured for the minimum wages in the wage scale. The rates of wages listed are minimums only, below which the Contractor cannot pay. The Contractor shall ascertain the wages above the minimum set forth that the Contractor may have to pay.
7. It is understood and agreed that all parties to this Agreement shall determine the

contents of these applicable statutes and comply with their provisions throughout the performance of the Agreement.

106 SAFETY

The City Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform work.

The Contractor will be solely and completely responsible for conditions of the work site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. Safety provisions shall conform to all applicable State, County, and local laws, ordinances and codes, and to the current safety regulations as set forth in the Oregon Safety Codes adopted and published by the Workmen's Compensation Board, Salem, Oregon.

The Contractor shall also comply with "U.S. Department of Labor Occupational Safety and Health Act," the "Construction Safety Act" administered by the U.S. Department of Labor, the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, and the "Manual on Uniform Traffic Control Devices", except where these are in conflict with state laws, in which case the more stringent requirements shall be followed.

The Contractor shall maintain at office or other well known place at the work site, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of all persons (including employees) who may be injured on the work site.

The duty of the City Engineer or Designee to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the construction site.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the City Engineer and the City of Sisters. In addition, the Contractor must promptly report in writing to the City Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the City Engineer, giving full details of the claim.

107 PROTECTION OF PROPERTY

The Contractor shall adopt every practical means and comply with all laws, ordinances, and regulations in order to minimize interferences to traffic and inconveniences, discomfort, and damage to the public, including the provision of adequate dust control measures. All obstructions to traffic shall be guarded in accordance with the "Manual on Uniform Traffic Control Devices".

The Contractor shall not trespass upon private property and shall be responsible for all injury or damage to persons or property, directly or indirectly, resulting from Contractors operations in completing this work. The Contractor shall comply with the laws and regulations of the City of Redmond, county, and state, relating to the safety of persons and property, and will be held responsible and required to make good any injury or damage to persons or property caused by carelessness or neglect on the part of the Contractor or subcontractor(s), or any agent or employee of either during the progress of the work and until its final acceptance.

The Contractor shall protect against injury any pipes, conduits, utilities, lawns, gardens, shrubbery, trees, fences, or other structures or property, public and/or private, encountered in this work except as stipulated elsewhere herein. The Contractor shall be responsible and liable for any damage to such pipe, structures, and property.

The Contractor shall protect this work and materials from damage due to the nature of the work, the elements, carelessness of other contractors, or from any cause until the completion and acceptance of the work. All loss or damages arising out of the nature of the work to be done under the terms of these Contract Documents, or from any unforeseen obstruction or defects which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the Contractor.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the City Engineer, is hereby obligated to act, at her/his discretion, to prevent such threatened loss or injury; and he shall so act, without appeal, if so instructed or authorized. Any compensation claimed by the Contractor on account of emergency work shall be determined by agreement or as covered under the section 'Change Orders'.

107.1.00 SITE RESTORATION AND CLEANUP

At all times during the work, the premises are to be kept clean and orderly, and upon completion of the work, the project shall be free of rubbish or excess materials of any kind. During construction, stockpile the excavated trench materials so as to do the least damage to adjacent lawns, grassed areas, gardens, shrubbery or fences, regardless of whether these are on private property, City, State or County rights-of-way. Remove all excavated materials from grassed and planted areas; and leave these surfaces in a condition equivalent to their original condition and free from all rocks, gravel, boulders or other foreign material. Replace topsoiled areas as specified in SURFACE RESTORATION, raked and graded to conform to their original contours. All existing drainage ditches and culverts shall be reopened and graded and natural drainage restored. Restore culverts broken or damaged to their original condition and location. Upon completion of pipe laying and backfilling operations in any section, hand rake and drag all former grassed and/or planted areas leaving all disturbed areas free from rocks, gravel, clay or any other foreign material. The finished surface shall conform to the original surface and shall be free draining, free from holes, rough spots or other surface features detrimental to a seeded area.

107.2.00 STREET CLEANING

Clean all spilled dirt, gravel or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation.

108 MATERIALS AND APPLIANCES

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new, of U.S. Domestic manufacture or as allowed by the North American Free Trade Agreement, and both workmanship and materials shall be of good quality as determined by the City Engineer or designee. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract Documents.

If the specifications, law, ordinance or applicable rules or regulations permit Contractor to furnish or use a substitute that is equal to any material or equipment specified and if Contractor wishes to furnish to use a proposed substitute, Contractor shall make written application to City Engineer for approval of such a substitute certifying in writing that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function as that specified; stating whether or not its incorporation in or use in connection with the project is subject to the payment of any license fee or royalty; and identifying all variations of the proposed substitute from that specified and indicating available maintenance service. No substitute shall be ordered or installed without the written approval of City Engineer who will be the judge of equality and may require Contractor to furnish such other data about the proposed substitute as he/she considers pertinent. No substitute shall be ordered or installed without such performance guarantee and bonds as City of Sisters may require which shall be furnished at Contractor's expense.

In selecting and/or approving equipment for installation in the project, the City of Sisters and City Engineer assume no responsibility for injury or claims resulting from failure of the equipment to comply with applicable national, state, and local safety codes or requirements, or the safety requirements of a recognized agency, or failure due to faulty design concepts, or defective workmanship and materials.

108.1.00 MATERIALS FURNISHED BY THE CITY OF SISTERS

All materials and/or services furnished by the City shall be obtained by the Contractor as indicated in these Contract Documents. The cost of handling and placing City furnished materials shall be included in the price paid for the Agreement item involving such material.

108.2.00 SAMPLES, TESTING AND INSPECTION

All materials to be incorporated in the work shall be subject to sampling, testing, and approval. The City Engineer may select samples in the presence of the Contractor to be delivered and tested as required by the Specifications at a laboratory approved by the City,

at no additional cost to the City of Sisters. Testing shall conform to City of Sisters Standards and Specifications and be performed by a certified/independent testing laboratory as approved by City Engineer.

All sampling and testing of materials shall be done in accordance with the latest designated standard methods of AASHTO, ASTM, etc., or in accordance with special methods designated in the Specifications.

The Contractor shall furnish, without extra charge, the necessary test pieces and samples, including facilities and labor for obtaining the same, as requested by the City Engineer. When required, the Contractor shall furnish certificates of tests of materials and equipment made at the point of manufacture by a independent, certified testing laboratory.

The City Engineer may require additional testing of any portion of the work. When additional testing is required by City Engineer, the City shall pay cost of any passing test. The Contractor shall pay the cost of any non-passing test.

The City Engineer and representatives, and authorized representatives of public agencies shall at all times have access to the work wherever it is in preparation or progress, and the Contractor shall provide facilities for such access and for inspection, including maintenance of temporary and permanent access routes.

If the Specifications, laws, ordinances, or any authorized representative require any work to be specially tested or approved, the Contractor shall give the City Engineer timely notice of its readiness for inspection. If the inspection is by authority other than the City Engineer's, the City Engineer shall be given timely notice of the date fixed for such inspection. Inspections by the City Engineer will be promptly made, and where practicable, at the source of supply. If any work should be covered without approval or consent of the City Engineer, it shall, if required by the City Engineer, be uncovered for examination at the Contractor's expense.

Re-examination of questioned work may be ordered by the Engineer; and, if so ordered, the work shall be uncovered by the Contractor. If such work be found not in accordance with the Contract Documents, the Contractor shall correct the defective work at no additional cost to the City of Sisters.

Neither observations by City Engineer nor inspections, tests, or approvals by persons other than Contractor shall relieve Contractor from obligations to perform work in accordance with requirements of the Contract Documents.

108.3.00 CONTRACTOR'S RESPONSIBILITY FOR MATERIALS

108.3.01 RESPONSIBILITY FOR MATERIAL FURNISHED BY CONTRACTOR

The Contractor shall be responsible for all material furnished by Contractor. All such material shall be examined by a City Representative and any material not meeting specifications, or that is defective in manufacture, or that has been damaged after delivery, shall be replaced or corrected by the Contractor at Contractor's expense.

108.3.02 RESPONSIBILITY FOR MATERIAL FURNISHED BY CITY

The Contractor's responsibility for material furnished by the City shall begin upon

Contractor's acceptance at the point of delivery to Contractor. All such material shall be immediately examined, and material defective in manufacture and/or otherwise damaged shall be rejected by the Contractor at the time and place of delivery to Contractor, to be replaced by the City. Once accepted by the Contractor, defective and/or damaged material discovered prior to final acceptance of the work shall be removed by the Contractor and shall be replaced, at Contractors own expense, the defective material. In such case the Contractor shall furnish all labor, equipment and material incidental to replacement and necessary for the completion of the work to the satisfaction of the Engineer.

108.4.00 CONSTRUCTION STAKING

108.4.01 SCOPE

The purpose of this section is to define the responsibilities for surveying. All survey work shall be conducted under the supervision of a Registered Professional Land Surveyor, licensed in the State of Oregon. The Contractor will be responsible for providing all construction staking as required to complete the work. The Design Engineer will provide bench marks, control points, and reference points as shown on the plans or as required by the Contractor to the City Engineer for review and approval prior to establishing control for construction staking. The Contractor will be responsible for establishing centerline location and elevations.

108.4.02 STAKES

Construction stakes and stakes which are reference points for construction work will be conspicuously marked. It shall be the responsibility of the Contractor to inform his/her employees and her/his subcontractors of their importance and the necessity for their preservation.

The Contractor will provide vertical and horizontal construction staking in the proximity of the work. Construction staking will be provided at 50' intervals on tangent and 25' intervals on curve. The grade stakes at a minimum should contain the following information:

Engineer's station
Offset from line
Cut or fill to grade

108.4.03 FLAGGING CODE

A color code may be established during the course of the project indicating specific colors for the various kinds of stakes to be set.

108.4.04 SEWER

Both gravity and pressure sewer lines will be construction staked by means of an offset line with pipe invert cut information provided. Grades for pressure sewer will be provided by the subgrade stakes for streets. Finish grades will be provided as required.

Manholes will have two reference points (swing-ties) indicating the center of the manhole and, flow invert elevation. Ends of services will be staked.

108.4.05 WATER

Water lines will be staked every 50ft. by means of an offset line after the street subgrade has been constructed. No cut stakes will be provided in existing streets where 36" of cover is all that is required. However, cut stakes will be required if deeper cuts are needed to go

under or over utilities, etc. Appurtenances will be staked as required. Fire hydrants will have two reference points (swing ties) indicating the hydrant cap nut with elevations. Finish grades will be provided as required.

108.4.06 STREET

Prior to commencing construction, clearing limits shall be established.

Where a significant (greater than 5') cut or fill is required for subgrade, slope stakes and construction staking for subgrade will be provided.

Curb line shall be staked by means of an offset line no more than 6' offset from the top face of curb, showing the cut or fill to the finish work. Said stakes shall be protected and saved for a period of five (5) working days after construction of curbs to enable the Inspector to approve the alignment and grade.

Base rock shall be staked by painting an appropriate target on the curb and providing construction stakes (blue tops) on centerline. Blue tops will also be provided at the gutter line for the centerline and gutter lines of any intersecting street.

108.4.07 STRUCTURES

All structures shall be staked to the line and grade as shown on the plans or as directed by the Engineer.

109 CONTRACT LEGALITIES

109.1.00 PERMITS AND LICENSES

The Contractor shall keep fully informed of all local ordinances, State and Federal laws, ordinances and regulations, in any manner affecting the work herein specified. Contractor shall at all times comply with said ordinances, laws, and regulations, and protect and indemnify the City of Sisters and officers and agents against any claim or liability arising from or based on the violation of such laws, ordinances, or regulations. Permits and licenses of a temporary or construction nature including government charges and inspection fees necessary for the prosecution of the work shall be secured and paid for by the Contractor. Easements and rights-of-way shall be secured by the City of Sisters, unless otherwise specified in the Supplementary Conditions.

109.2.00 ROYALTIES AND PATENTS

The Contractor shall pay all royalty and license fees. Contractor shall defend all suits or claims for infringement of any patent rights and shall save the City of Sisters harmless from loss on account thereof, except that the City of Sisters shall be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified; but if the Contractor has information that the process or article specified is an infringement of a patent, contractor shall be responsible for such loss unless contractor promptly gives such information to the City Engineer or City of Sisters.

109.3.00 TAXES AND CHARGES

The Contractor agrees to withhold and pay any and all withholding taxes, whether State or Federal, sales tax, and to pay all Social Security charges and also all State Unemployment Compensation charges, and to pay or cause to be withheld, as the case may be, any and all taxes, charges, or fees or sums whatsoever which are now or may hereafter be required

to be paid or withheld under any laws.

109.4.00 INDEMNITY

The Contractor shall hold harmless, indemnify and defend the City of Sisters, the City Engineer and its consultants, and such of their officers and employees and agents, from any and all liability claims, losses, or damages arising or alleged to arise from or during the performance of the work described herein, by reason of any negligent, reckless, or intentional act or omission of the Contractor, any subcontractor or suppliers, or any agent, employee, or representative of any of them.

The obligation of Contractor shall not extend to the liability of City Engineer, his/her agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications.

109.5.00 UNFORESEEN DIFFICULTIES

The Contractor shall protect work and materials from damage due to the nature of the work, the elements, carelessness of other contractors, or from any cause whatever until the completion and acceptance of the work. All loss or damage arising out of a nature of the work to be done under these Contract Documents, or from any unseen obstruction or defects which may be encountered in the prosecution of the work, or from the action of the elements shall be sustained by the Contractor.

109.6.00 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work should be stopped under an order of any court or other public authority for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by Contractor; or if the City Engineer should fail to issue any estimate for payment within thirty (30) days after it is due; or if the City of Sisters should fail to pay the Contractor within thirty (30) days after the time specified in the paragraph "Partial Payment" of the section "Payment" any sum certified by the City Engineer, then the Contractor may, upon fifteen (15) days written notice to the City of Sisters and the City Engineer, stop work or terminate this Agreement and recover from the City of Sisters payment for all work executed and any loss sustained upon any plant or material and reasonable profit and damages, unless said default has been remedied within said time.

109.7.00 CORRECTION OF DEFECTIVE WORK AFTER FINAL ACCEPTANCE (WARRANTY)

All work shall be guaranteed for a period of one (1) year against defects in materials and workmanship. The Contractor hereby agrees to make, at own expense, all repairs or replacements necessitated by defects in materials or workmanship supplied by Contractor or subcontractors that become evident within one (1) year after the date of written notice from the City Engineer recommending final acceptance of the entire project, or entire schedule, by the City of Sisters. The Contractor also agrees to hold the City of Sisters harmless from claims of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written orders for same from the City of Sisters. If the Contractor fails to make the repairs and replacements promptly, the City of Sisters may do the work, and the Contractor and Contractors' surety shall be liable for the cost thereof.

109.07.01 WARRANTY

Upon acceptance of the construction by the City Engineer, a minimum one year warranty

agreement on materials and workmanship shall be initiated between the City of Sisters and the Developer.

The warranty shall be comprised of a bond or other approved security in a minimum value of 10% of the original improvement construction costs.

109.8.00 RELEASE OF LIENS OR CLAIMS

On public projects, neither the final payment nor any part of the retained percentage shall become due until the Contractor submits to the City a signed affidavit, satisfactory to the City Engineer, stating that so far as the Contractor has knowledge or information, all accounts for materials, labor, and incidentals in connection with the work have been paid in full. The form of affidavit shall be satisfactory to the City of Sisters.

If any lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the City all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

109.9.00 CONTRACTOR'S AND MANUFACTURER'S COMPLIANCE WITH STATE, OSHA, AND OTHER CODE REQUIREMENTS

The completed work shall include all necessary permanent safety devices such as machinery guards and similar ordinary safety items required by the State and federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the work (including City selected equipment) subject to such safety regulations shall be fabricated, furnished, and installed in compliance with these requirements. Contractors and manufacturers of equipment shall be held responsible for compliance with the requirements included herein.

110 PROGRESS OF THE WORK

110.1.00 BEGINNING OF THE WORK

Before work shall be started and materials ordered, the Contractor shall meet and consult with the City Engineer or designee relative to materials, equipment, and all arrangements for prosecuting the work. The Contractor shall provide and comply with work schedule, as agreed upon in the preconstruction conference. The Contractor shall commence the work contemplated under these Contract Documents within three (3) days after the City of Sisters written notice to proceed unless otherwise notified by the City Engineer, and shall complete the work within the time specified in the Agreement, it being expressly understood and agreed that the time of beginning, rate of progress, and time of completion of the work are of the essence of this Agreement. Prior to beginning construction, the Contractor shall submit to the City Engineer a preliminary progress schedule; indicating the times (number of days or dates) for starting and completing the various stages of the work, including any milestones specified in the Contract Documents.

110.2.00 PROSECUTION OF THE WORK

The work shall be prosecuted at such time, and in or on such part or parts of the project as may be required, to complete the project as contemplated in the Contract Documents. Time is essence of this contract. Upon starting construction, the Contractor shall diligently and continuously pursue completion of the work with adequate crew and equipment. Should the Contractor, without the express approval of the City Engineer, reduce this effort,

it shall be considered a failure of the Contractor to complete the work in the time agreed upon. As such it shall fall under the provisions of 110.9.00 LIQUIDATED DAMAGES and liquidated damages may be assessed for each day of reduced operations. It is expressly understood and mutually agreed between all parties to the Agreement that the City Engineer shall not determine or be responsible for construction methods.

The Contractor shall perform the work and take such precautions as contractor may deem necessary to complete the project so all work will be in conformance with the Contract Documents within the Contract time.

If the Contractor desires to carry on work at night or outside the regular hours, contractor may submit application to the City of Sisters; but Contractor shall allow ample time to enable satisfactory arrangements to be made for inspecting the work in progress. The Contractor shall notify all business and Property owners within 500' of the construction limits at least 48 hrs prior to commencing night work and shall maintain a public relations log of all communications with effected parties for review by the City. If granted permission, Contractor shall light the different parts of the work in a manner satisfactory to the City Engineer and shall comply with all regulations of the City or State or other public body having jurisdiction.

The Contractor shall complete the work called for under the contract in all parts and requirements within the number of workdays, or before the completion date, as set forth in the contract

Where such case applies, a notice to proceed may be issued to the Paving Contractor when individual streets have been constructed and approved for base rock by the Engineer. Once the base rock has been delivered and spread, it shall be the Paving Contractor's responsibility to maintain the surface, including blading and watering as may be required. It is the intent of these specifications that paving commence immediately following the placement of base rock.

110.3.00 COOPERATION WITH UTILITIES

The Contractor is responsible for coordinating with utility owners. Before the Contractor performs any excavation she/he is to contact the Utilities Notification Center at 1-800-332-2344 at least forty-eight (48) hours prior to excavation. The Contractor shall conform to the requirements of ORS 757.541 to 757.571.

110.4.00 MAINTAINING TRAFFIC

The Contractor will be responsible to maintain two-way traffic at all times unless otherwise specified and approved by the City. The streets shall be open for two-way traffic at all times when the Contractor is not performing work unless otherwise specified. Approaches to all properties accessing to the project shall be maintained by the Contractor at all times except for short periods necessary to the progress of the construction.

110.4.01 PUBLIC SAFETY AND CONVENIENCE

The Contractor shall conduct the project with proper regard for the safety and convenience of the public. When the project involves use of public ways, Contractor shall provide flagmen when directed and install and maintain means of free access to all fire hydrants, service stations, warehouses, stores, houses, garages and other property.

Private residential driveways shall be closed only with approval of the Engineer or specific permission of the property owner. The Contractor shall not interfere with normal operation of public transit vehicles unless otherwise authorized. The Contractor shall not obstruct or interfere with travel over any public street or sidewalk without approval. Where detours are necessary, they shall be maintained with good surface and shall be clearly marked. The Contractor shall provide open trenches and excavations with adequate barricades of an approved type which can be seen from a reasonable distance. At night, the Contractor shall mark all open work and obstructions by lights. The Contractor shall install and maintain all necessary signs, lights, flares, barricades, railings, runways, stairs, bridges and facilities. The Contractor shall observe all safety instructions received from the Engineer or governmental authorities, but following of such instructions shall not relieve the Contractor from the responsibility or liability for accidents to workers or damage or injury to person or property.

Emergency traffic such as police, fire and disaster units shall be provided reasonable access to the work area at all times.

The Contractor shall be liable for any damages which may result from failure to provide such reasonable access or failure to notify the appropriate authority.

110.5.00 ASSIGNMENT

Neither party to the Agreement shall assign the Agreement or sublet it as a whole without the written consent of the other; nor shall the Contractor assign any monies due or to become due to Contractor hereunder without the previous written consent of the City of Sisters.

110.6.00 CITY OF SISTERS RIGHT TO DO WORK

If the Contractor should, in the opinion of the City Engineer, neglect to prosecute the work properly or should neglect or refuse at Contractors' own cost to take up and replace work as shall have been rejected by the City Engineer, then the City of Sisters shall notify the Surety of the condition and after ten (10) days written notice to the Contractor and the Surety, or without notice if an emergency or danger to the work or public exists, and without prejudice to any other right which the City of Sisters may have under the Agreement, take over that portion of the work which has been improperly executed and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the Contractor.

110.7.00 CITY OF SISTERS RIGHT TO TERMINATE AGREEMENT

If the Contractor should be adjudged as bankrupt; or if the Contractor should make a general assignment for the benefit of her/his creditors; or if a receiver should be appointed to account of her/his insolvency; or if the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials; or if the Contractor should fail to make prompt payment to subcontractors for material or labor; or persistently disregards laws, ordinances, or the instructions of the City Engineer; or otherwise be guilty of substantial violation of any provision of the Agreement or any laws or ordinance; then the City, upon the certification of the City Engineer that sufficient cause exists to justify such

action, may without prejudice to any other right or remedy, and after giving the Contractor and Surety seven (7) days written notice, transfer the employment for said work from the Contractor to the Surety. Upon receipt of such notice, such Surety shall enter upon the premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the work included under this Agreement and employ, by Contractor or otherwise, any qualified person or persons to finish the work and provide the materials therefore, in accordance with the Contract Documents, without termination of the continuing full force and effect of this Agreement. In case of such transfer of employment to such surety, the Surety shall be paid in its own name on estimates according to the terms hereof without any right of the Contractor to make any claim for the same or any part thereof. In lieu of the foregoing, if the City so elects, the City may terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method the City may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of completing the Agreement, including compensation for the additional managerial and administrative services, shall exceed such unpaid balance, the Contractor shall pay the difference to the City. The expense incurred by the City, as herein provided and the damage incurred through the Contractor's default shall be certified by the City Engineer.

Where Contractor's services have been so terminated by the City, said terminations shall not affect any rights of the City against Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the City due Contractor will not release Contractor from liability.

Upon seven (7) days written notice to Contractor and City Engineer, the City may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Agreement. In such case, Contractor shall be paid for all work executed and any expense sustained plus a reasonable profit.

110.8.00 DELAYS AND EXTENSION OF TIME

If the Contractor shall be delayed at any time in the progress of the work by any act or neglect of the City or the City Engineer, or of any employee of either; or by any separate contractor employed by the City; or by changes ordered in the work; or by strikes, lockouts, fire, unavoidable casualties, or any cause beyond the Contractor's control which justified the delay, or by delay authorized in writing by the City Engineer, then the date for completion of the work shall be extended. Within 14 days after the Contractor submits to the City Engineer a written request for an extension of time, the City Engineer will determine the number of extension days due the Contractor. The City of Sisters will make the final decision on all requests for extension of time.

No such extension shall be made for delays occurring more than seven (7) days before a claim is made in writing to the City Engineer. In case of a continuing cause of delay, only one claim is necessary.

If no schedule or agreement stating the date upon which supplemental drawings shall be furnished by the City Engineer is made, then no claim for delay shall be allowed the Contractor on account of failure to furnish drawings until two (2) weeks after demand for such drawings, and not then unless such claim be reasonable.

No extension of time will be granted to the Contractor for delays occurring to parts of the work that have no measurable impact on the completion of the total work under this Agreement.

No extension of time will be considered for weather conditions normal to the area in which the work is being performed. Unusual weather conditions, if determined by the City Engineer to be of a severity that would stop all progress of the work, may be considered as cause for an extension of Agreement completion time.

Delays in delivery of equipment or material purchased by the Contractor or subcontractors (including City selected equipment) shall not be considered as a just cause for delay. The Contractor shall be fully responsible for the timely ordering, scheduling, expediting, delivery, and installation of all equipment and materials.

The Contract Time may only be changed by a Change Order.

110.9.00 LIQUIDATED DAMAGES

Should the Contractor fail to complete the work, or any part thereof, in the time agreed upon in these Contract Documents or within such extra time as may have been allowed for delays by extensions granted as provided in these Contract Documents, the Contractor shall reimburse the City for the additional expense and damage for every day specified that the Agreement remains uncompleted after the date of specified completion. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work shall be as given in the following schedule for each workday the work exceeds the number of workdays specified.

<u>Original Contract Amount</u>	<u>Liquidated Damages</u>
Up to \$100,000	\$200
\$100,000 to \$500,000	\$500
Greater than \$500,000	\$800

The said amounts are hereby agreed upon as liquidated damages for the loss to the City on account of expenses for the employment of engineers, inspectors, and other employees after the expiration of the time of completion, and on account of the value of the operation of the work dependent thereon. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the Contractor; and the City is authorized to deduct the amount of such damages from any monies due the Contractor for work performed or material furnished under this Agreement; and the Contractor and Contractors' Sureties shall be liable for any excess.

110.10.00 OTHER CONTRACTS

The City reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their work and shall properly connect and coordinate Contractors work with theirs.

If any part of the Contractor's work depends, for proper execution or results, upon the work of any other contractor, the Contractor shall inspect and promptly report to the City Engineer any defects in such work that render it unsuitable for such proper execution and

results. The Contractor's failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his/her work, except as to defects which may develop in the other contractor's work after execution of work.

110.11.00 USE OF PREMISES

The City shall furnish, as indicated in the Contract Documents and not later than the date when needed by Contractor, the lands upon which the work is to be done, rights-of-way for access thereto, and such other lands which are designated for the use of Contractor. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the City, unless otherwise specified in the Contract Documents. If the Contractor believes that any delay by the City in furnishing these lands or easements entitles Contractor to an extension of the Contract Time, she/he be entitled to make a claim under the terms of the Agreement. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

The Contractor shall confine equipment, the storage of materials, and the operation of workmen to limits shown on the plans or indicated by law, ordinances, permits, or directions of the City Engineer, and shall not unreasonably encumber the premises with materials.

110.12.00 USE OF COMPLETED PORTIONS

The City shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions which may not have expired. Such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of the work, or delays the completion of the work, the Contractor shall be entitled to extra compensation or an extension of time, or both. Should such condition or conditions prevail, the Contractor shall submit a claim for additional compensation or extension of time, in writing, to the City Engineer. The City Engineer will review the claim and determine its validity.

110.13.00 CUTTING AND PATCHING

The Contractor shall do all cutting, fitting, or patching of work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon or reasonable implied by the plans.

110.14.00 CLEANING UP

Cleaning up shall be a continuing process from the start of work to final acceptance of the project. The Contractor shall, at all times, at Contractor's own expense and without further order keep property on which work is in progress free from accumulations of waste material or rubbish caused by employees or by the work, and at all times during the construction period shall maintain structure sites, rights-of-way, adjacent property, and the surfaces of streets and roads on which work is being done in a safe condition for the Contractor's workers, and the public. Accumulation of waste materials that might constitute a fire hazard will not be permitted. Spillage from the Contractor's hauling vehicles on traveled public or private roads and parking areas shall be promptly cleaned up. Upon completion of the construction, the Contractor shall, at his own expense, remove all temporary structures, rubbish, and waste materials resulting from operations.

Upon failure of the Contractor to provide cleanup within 24 hours of being so directed by the Engineer in writing, the City, or an agent retained by the City, may complete the cleanup and the cost thereof plus 10% for handling shall be deducted from any payment due the Contractor.

110.15.00 CHANGES IN QUANTITY

The City reserves the right to increase or decrease quantities without limit or to omit portions of the work without invalidating said proposal or re-negotiating the unit bid price.

110.16.00 PERFORMANCE TESTING

Operating equipment and systems shall be performance tested in the presence of the City Engineer to demonstrate compliance with the specified requirements. Performance testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the City Engineer. Such testing shall be scheduled with the City Engineer at least one (1) week in advance of the planned date for testing and include a factory representative on site.

110.17.00 SUBSTANTIAL COMPLETION DATE

The City Engineer may, at his/her sole discretion, issue a written notice of substantial completion for the purpose of establishing the starting date for specific guarantees, and to establish the date that the City will assume the responsibility for the cost of operating such portions of the project. Said notice shall not be considered as final acceptance of any portion of the work or relieve the Contractor from completing the remaining work within the specified time and in full compliance with the Contract Documents. All equipment contained in the work, plus all other components necessary to enable the City of Sisters to operate the facility in the manner that was intended, shall be complete including acceptable testing as specified in these Contract Documents on the substantial completion date.

The City shall have the right to exclude Contractor from the project after the date of substantial completion, but the City shall allow Contractor reasonable access to complete or correct remaining items of work.

111 PAYMENT

111.1.00 BASIS OF PAYMENT

In consideration of the faithful performance of all the covenants, stipulations, and conditions in these Contract Documents, the City agrees to pay the Contractor the amount bid as adjusted when so stipulated in the Contractor's Proposal on the basis of the unit prices named in the contractor's Proposal for the work actually performed as determined by the final estimate of the City Engineer, together with any amounts due for extra work not classified under the items listed in the Contractor's Proposal as provided in the paragraph "Extra Work" of these GENERAL CONDITIONS; less any deduction for failure to complete the work within the time specified; and less any deductions for claims and damages paid by the City due to acts or omissions of the Contractor and for which the Contractor is liable under this Agreement.

111.2.00 PARTIAL PAYMENT

At least ten (10) days before the 25th of each month, but not more often than once a month, Contractor shall submit to City Engineer for review an application for payment filled out and signed by Contractor covering the work completed as of the date of the application

and accompanied by such data and schedules as City Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the work but delivered and suitably stored at the site or at another location agreed to in writing, the application for payment shall also be accompanied by such data, satisfactory to the City, as will establish City of Sisters title to the material and equipment and protect interest therein, including applicable insurance. Each subsequent application for payment may be required to include an affidavit of Contractor's obligations reflected in prior applications for payment.

Contractor warrants and guarantees that title to all work, materials and equipment covered by any application for payment, whether incorporated in the project or not, will pass to the City at the time of payment free and clear of all liens, claims, security interests and encumbrances.

City Engineer will, within ten (10) days after receipt of each application for payment, either indicate in writing, approval of payment and present the application to the City Finance Department, or return the application to Contractor indicating, in writing, reasons for refusing to approve payment. In the later case, Contractor may make the necessary corrections and resubmit the application.

The amount of said application for payment, after deducting five percent (5%) and all previous payments, shall be due and payable to the Contractor not more than thirty (30) days after the last day of said month. The five percent (5%) deducted, as above set forth, shall be withheld by the City to insure faithful completion of the work under the terms of the Contract Documents and to provide a fund for the payment of any claims which may accrue against the City of Sisters because of some act or omission on the part of the Contractor.

Nothing contained in this article shall be construed to affect the right, hereby reserved, to reject the whole or any part of the aforesaid work should such work be later found not to comply with any of the provisions of the Contract Documents. All estimated quantities of work for which progress payments have been made are subject to review and correction on the final estimate. Payment by the City and acceptance by the Contractor of progress payments based on periodic estimates of quantities of work shall not, in any way constitute acceptance of the estimated quantities used as the basis for computing the amounts of the progress payments.

Furthermore, on all Agreements for the construction, reconstruction, maintenance or repair of any public work in the State of Oregon, The City will withhold 25 percent of any payment due the Contractor until the Contractor files with the City the signed Wage Certification Form certifying that the Contractor has paid not less than the prevailing rate of wages as required by ORS Chapter 279C.845 (7), as set forth in General Conditions.

111.3.00 CHANGE ORDERS

Payment or credit for any alterations covered by a Change Order shall be determined by one or a combination of methods set forth in 111.3.01, 111.3.02, or 111.3.03 below:

111.3.01 UNIT PRICES

If applicable, those unit prices stipulated in the Proposal or unit prices negotiated and mutually acceptable to the Contractor and City of Sisters.

111.3.02 LUMP SUM

A total sum for the work negotiated and mutually acceptable to the Contractor and City. Contractor's quotations for Change Orders shall be in writing and firm for a period of forty-five days. Any compensation agreed upon, and subsequently paid by the City for work defined in a Change Order shall be deemed to include all costs and expenses related to such work, including the costs and expenses of a direct, indirect, and consequential nature, or otherwise, and it is specifically understood and agreed that no additional compensation may be subsequently sought or charged by the Contractor for the work covered by the applicable Change Order.

The City's request for quotations on alterations to the work shall not be considered authorization to proceed with the work prior to the issuance of a formal Change Order, nor shall such request justify any delay in existing work.

111.3.03 FORCE ACCOUNT WORK

If the method of payment cannot be agreed upon prior to the beginning of the work, and the City or the City Engineer directs that the work be done by written Change Order or on a force account basis, then the Contractor shall furnish labor equipment, and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual cost of the following:

- A. Labor, including foremen, who are directly assigned to the force account work: (actual payroll cost, including wages, fringe benefits as established by negotiated labor agreements, labor insurance, and labor taxes as established by law). No other fixed labor burden will be considered unless approved in writing by the City of Sisters.
- B. Material delivered and used on the designated work, including sales tax, if paid for by Contractor or subcontractor.
- C. Rental, or equivalent rental cost of equipment, including necessary transportation for items having a value in excess of one hundred dollars (\$100). Equipment use approved by the Engineer will be paid at the rental rates given in the most current edition of the Rental Rate Blue Books for Construction Equipment ("Blue Book"), Volumes 1,2, and 3, published by Primedia Information, Inc., 1735 Technology Drive, Suite 410, San Jose, CA 95110-1313 (phone 800-669-3282). Equipment rental rates will be the maximum allowable rate.
- D. Additional bond, as required and approved by the City of Sisters.
- E. Additional insurance (other than labor insurance) as required and approved by the City of Sisters.

To costs under 111.3.03 FORCE ACCOUNT WORK, there shall be added the following fixed fees for the Contractor or subcontractor actually performing the work:

- 1. A fixed fee of fifteen percent (15%) added to the cost of Items A, B and C; and
- 2. A fixed fee of six percent (6%) added to the cost of items D and E above.
- 3. An additional fixed fee of ten percent (10%) shall be allowed the Contractor for the administrative handling of portions of the work that are performed by an approved subcontractor. No additional fixed fee will be allowed for the administrative handling of work performed by a subcontractor of a subcontractor unless by written permission from the City. The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, profit, and any other general expense.

The City reserves the right to furnish such materials and equipment, as it deems expedient, and the Contractor shall have no claim for profit or added fees on the cost of such materials and equipment.

For equipment under Item C above, rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances shall not exceed the current rental rates prevailing in the locality. The rentals allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, and renewals, and no further allowances will be made for those items, unless specific agreement to that effect is made.

The Contractor shall maintain records in such a manner as to provide a clear distinction between the direct costs of work paid for on a force account basis and the costs of other operations. The Contractor shall furnish the City Engineer report sheets in duplicate of each day's force account work no later than the working day following the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces. The daily report sheets shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendors' invoices for materials used in the alterations covered by Change Orders. Such invoices shall be submitted with the daily report sheets, or, if not available, they shall be submitted with subsequent daily report sheets. Said daily report sheets shall be signed by the Contractor or authorized agent.

To receive partial payments and the final payment for force account work, the Contractor shall submit in a manner approved by the City Engineer, detailed and complete documented verification of the Contractor's and any of subcontractor's actual current costs involved in the force account work pursuant to the issuance of an approved Change Order. Such costs shall be submitted within thirty (30) days after said work has been performed.

No payment will be made for work billed and submitted to the City Engineer after the thirty (30) day period has expired. No extra or additional work shall be performed by the Contractor, except in an emergency endangering life or property, unless in pursuance of a written Change Order.

111.4.00 CLAIMS

If the Contractor claims that any instructions involve extra cost under this Agreement, the Contractor shall give the City Engineer written notice thereof within forty-eight (48) hours after the receipt of such instructions, and in any event before proceeding to execute the work. If such notification is not given, or if the City Engineer is not afforded proper facilities by the Contractor for keeping strict account of actual cost, then the Contractor hereby agrees to waive the claim for such additional compensation. Such notice by the Contractor, and the fact that the City Engineer has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

Claims for additional compensation shall be made in itemized detail and submitted, in writing, to the City Engineer within ten (10) days following completion of that portion of the

work for which the Contractor bases a claim is found to be just. It shall be allowed and paid for as provided in the section covering Change Orders.

111.5.00 FINAL PAYMENT

To receive final payment, the Contractor must do the following:

1. Notify the City Engineer, in writing, that the Contractor has completed the work in accordance with the Contract Documents and request final payment.
2. Submit to the City of Sisters appropriate waivers of lien and claims for itself and all subcontractors and a signed affidavit, satisfactory to the City of Sisters, stating that so far as the contractor has knowledge or information, all accounts for materials, labor, and incidentals in connection with the work have been paid in full.
3. On agreements for public works, furnish to the City of Sisters a completed wage certification as required by ORS 279, as amended.
4. Provide required warranty letter and bond. (See Section #8 Development Provisions)

Within thirty (30) days of written notice from the Contractor that the work has been completed, the City Engineer shall conduct a final inspection of the work. If the work has been completed to the satisfaction of the City Engineer, he/she shall submit a certificate of acceptance of the completed work, together with a final estimate of the amount due the Contractor under this Agreement, less any amount to be withheld by the City to ensure guarantees, as may be provided in the Supplementary Conditions.

The City shall, within thirty five (35) days, pay to the Contractor all monies due under the conditions of the Agreement upon the following:

1. The City of Sisters acceptance of the City Engineer's final estimate.
2. The City of Sisters approval of the affidavit of the release of lien and claim.
3. Inspection and approval by all or any concerned public works of the State, of any county, municipality or political subdivision created by law, or Public Utility.

111.6.00 MATERIALS DELIVERED TO THE WORK SITE BUT NOT USED

Monthly progress payments will include compensation for materials received on the site during the pay period but not incorporated in the work providing they are properly stored and protected and the Contractor submits to the City Engineer, in writing, ten (10) days prior to the end of each pay period, a list, with costs supported by invoices from suppliers for such materials on the job for which the Contractor feels credit is due.

Payments for material delivered to the site and not incorporated in the work during the pay period shall be understood to be advance payments for the Contractor's convenience. Final payment will be made only for materials actually incorporated in the work. Upon acceptance of the work, all materials stored on the site for which advance payments have been made, unless otherwise agreed upon in writing, shall revert to the Contractor and all remaining advance payments on materials shall be deducted from the final payment for the work.

Advance payments by the City of Sisters for materials on the site, but not incorporated in the work, shall not be considered as acceptance by the City of Sisters and shall not relieve the Contractor from his/her responsibilities.

111.7.00 ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the Contractor of the final payment shall release the City of Sisters and the City Engineer as agent of the City from all claims and all liability to the Contractor for all things done or furnished in connection with the work, and every act of the City and others relating to or arising out of the work. No payment, however, final or otherwise, shall operate to release the Contractor from obligations under these Contract Documents.

111.8.00 NO WAIVER OF RIGHTS

Neither the inspection by the City, through the City Engineer or any of City employees, nor any order by the City for payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the City or City Engineer, nor any extension of time, nor any possession taken by the City or its employees, shall operate as a waiver of any provision of these Contract Documents, or any power herein reserved to the City, or any right to damages herein, nor shall any waiver of any breach in this Agreement be held to be a waiver of any other or subsequent breach.

111.9.00 LITIGATION FEES AND EXPENSES

In the event suit or action shall be instituted to enforce any of the terms or conditions of the Agreement, the losing party shall pay to the prevailing party, in addition to the costs and disbursements allowed by statute, such sums as the court may adjudge reasonable as attorney's fees in such suit or action, in both trial and appellate courts.

Exhibit A

Public Contracting Code

Requirements for Public Improvement Contracts Over \$50,000

1. Contractor shall pay promptly, as due, all persons supplying labor or materials for the prosecution of the work provided for in the contract, and shall be responsible for such payment of all persons supplying such labor or material to any Subcontractor.
 - (a) ORS 279C.580(3)(a) requires the prime contractor to include a clause in each subcontract requiring contractor to pay the first-tier subcontractor for satisfactory performance under its subcontract within 10 days out of such amounts as are paid to the prime contractor by the public contracting agency; and
 - (b) ORS 279C.580(3)(b) requires the prime contractor to include a clause in each subcontract requiring contractor to pay an interest penalty to the first-tier subcontractor if payment is not made within 30 days after receipt of payment from the public contracting agency.
 - (c) ORS 279C.580(4) requires the prime contractor to include in every subcontract a requirement that the payment and interest penalty clauses required by ORS 279C.580(3)(a) and (b) be included in every contract between a subcontractor and a lower-tier subcontractor or supplier.
2. Contractor shall promptly pay all contributions or amounts due the Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the contract, and shall be responsible that all sums due the State Unemployment Compensation Fund from Contractor or any Subcontractor in connection with the performance of the contract shall promptly be paid.
3. Contractor shall not permit any lien or claim to be filed or prosecuted against the City on account of any labor or material furnished and agrees to assume responsibility for satisfaction of any such lien so filed or prosecuted.
4. A notice of claim on contractor's payment bond shall be submitted only in accordance with ORS 279C.600 and 279C.605.
5. Contractor and any Subcontractor shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.
6. Contractor shall demonstrate to the City that an employee drug-testing program is in place within 10 days of receiving a Notice of Award.
7. Pursuant to ORS 279C.515, if Contractor fails, neglects or refuses to make prompt payment of any claim for labor or materials furnished to the Contractor or a

Subcontractor by any person in connection with the contract as such claim becomes due, the City may pay such claim to the persons furnishing the labor or material and charge the amount of payment against funds due or to become due Contractor by reason of the contract. The payment of a claim in the manner authorized hereby shall not relieve the Contractor or his surety from his or its obligation with respect to any unpaid claim. If the City is unable to determine the validity of any claim for labor or material furnished, the City may withhold from any current payment due Contractor an amount equal to said claim until its validity is determined and the claim, if valid, is paid.

8. Pursuant to ORS 279C.515, if the Contractor or a first-tier Subcontractor fails, neglects, or refuses to make payment to a person furnishing labor or materials in connection with the public contract for a public improvement within 30 days after receipt of payment from the City or contractor, the contractor or first-tier subcontractor shall owe the person the amount due plus interest charges commencing at the end of the 10 day period that payment is due under ORS 279C.580(4) and ending upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest charged to Contractor or first-tier Subcontractor on the amount due shall equal three times the discount rate on 90-day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve District that includes Oregon on the date that is 30 days after the date when payment was received from the public contracting agency or from the Contractor, but the rate of interest shall not exceed 30%. The amount of interest may not be waived.
9. As provided in ORS 279C.515, if the Contractor or a Subcontractor fails, neglects, or refuses to make payment to a person furnishing labor or materials in connection with the public contract, the person may file a complaint with the Construction Contractor's Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580.
10. Pursuant to ORS 279C.530, Contractor shall promptly, as due, make payment to any person, co-partnership, association, or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to employees of such Contractor, of all sums which the Contractor agrees to pay for such services and all monies and sums which the Contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.
11. Contractor shall employ no person for more than 10 hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency, or where public policy absolutely requires it, and in such cases, except in cases of contracts for personal services designated under ORS 279A.055, Contractor shall pay the employee at least time and one-half pay for all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work is five (5) consecutive days, Monday through Friday; or for all overtime in excess of 10 hours a day or 40 hours in any one week when the work week is 4 consecutive days, Monday through Friday; and for all work performed on Saturday and on any legal holidays as specified in ORS 279C.540.
12. Pursuant to ORS 279C.540(2), the Contractor must give notice to employees who work on this contract in writing, either at the time of hire or before commencement of work on the contract, or by posting a notice in a location frequented by employees, of the number of hours per day and the days per week that the employees may be required to work.

13. The provisions of ORS 279C.800 to ORS 279C.870 relating to the prevailing wage rates will be complied with.
14. Unless exempt under ORS 279C.836(4), (7), (8) or (9), before starting work on this contract, or any subcontract hereunder, contractor and all subcontractors must have on file with the Construction Contractors Board a public works bond with a corporate surety authorized to do business in the state of Oregon in the amount of \$30,000. The bond must provide that the contractor or subcontractor will pay claims ordered by the Bureau of Labor and Industries to workers performing labor upon public works projects. The bond must be a continuing obligation, and the surety's liability for the aggregate of claims that may be payable from the bond may not exceed the penal sum of the bond. The bond must remain in effect continuously until depleted by claims paid under ORS 279C.836(2), unless the surety sooner cancels the bond. The surety may cancel the bond by giving 30 days' written notice to the contractor or subcontractor, to the board and to the Bureau of Labor and Industries. When the bond is canceled, the surety is relieved of further liability for work performed on contracts entered into after the cancellation. The cancellation does not limit the surety's liability for work performed on contracts entered into before the cancellation. Contractor further certifies that contractor will include in every subcontract or provision requiring a subcontractor to have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt under ORS 279C.836(4), (7), (8), or (9).
 - (a) Unless exempt under ORS 279C.836(4), (7), (8), or (9), before permitting a subcontractor to start work on this public works project, the contractor shall verify that the subcontractor has filed a public works bond as required under this section or has elected not to file a public works bond under ORS 279C.836(7).
 - (b) Unless public contracting agency has been notified of any applicable exemptions under ORS 279C.836(4), (7), (8), or (9), the public works bond requirement above is in addition to any other bond contractors or subcontractors may be required to obtain under this contract.
15. As may be required by ORS 279C.845, Contractor or contractor's surety and every subcontractor or subcontractor's surety shall file certified payroll statements with the City in writing.
 - (a) If a contractor is required to file certified statements under ORS 279C.845, the City shall retain 25% of any amount earned by the contractor on the public works project until the contractor has filed with the City statement as required by ORS 279C.845. The City shall pay the contractor the amount retained within 14 days after the contractor files the required certified statements, regardless of whether a subcontractor has failed to file certified statements required by statute. The City is not required to verify the truth of the contents of certified statements filed by the contractor under this section and ORS 279C.845.
 - (b) The contractor shall retain 25% of any amount earned by a first-tier subcontractor on this public works contract until the subcontractor has filed with the City certified statements as required by ORS 279C.845. The contractor shall verify that the first-tier subcontractor has filed the certified statements before the contractor may pay the subcontractor any amount retained. The contractor shall pay the first-tier subcontractor the amount retained within 14 days after the

subcontractor files the certified statements as required by ORS 279C.845. Neither the City nor the contractor is required to verify the truth of the contents of certified statements filed by a first-tier subcontractor.

16. All employers, including Contractor, that employ subject workers who work under this contract shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its subcontractors complies with these requirements.
17. All sums due the State Unemployment Compensation Fund from the Contractor or any Subcontractor in connection with the performance of the contract shall be promptly so paid.
18. The contract may be canceled at the election of City for any willful failure on the part of Contractor to faithfully perform the contract according to its terms.
19. Contractor certifies that it has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontractors.
20. Contractor certifies its compliance with the Oregon tax laws, in accordance with ORS 305.385.
21. In the performance of this contract, the Contractor shall use, to the maximum extent economically feasible, recycled paper, materials, and supplies, and shall compost or mulch yard waste material at an approved site, if feasible and cost effective.
22. As may be applicable, Contractor certifies that all subcontractors performing construction work under this contract will be registered with the Construction Contractors Board or licensed by the state Landscaping Contractors Board in accordance with ORS 701.035 to ORS 701.055 before the subcontractors commence work under this contract.
23. Pursuant to City Public Contracting Rule 137-049-0880, the City may, at reasonable times and places, have access to and an opportunity to inspect, examine, copy, and audit the records relating to the Contract.
24. In compliance with the provisions of ORS 279C.525, the following is a list of federal, state and local agencies, of which the City has knowledge, that have enacted ordinances or regulations dealing with the prevention of environmental pollution and the preservation of natural resources that may affect the performance of the contract:

FEDERAL AGENCIES:

- Agriculture, Department of
 - Forest Service
 - Soil Conservation Service
- Defense, Department of
 - Army Corps of Engineers
- Environmental Protection Agency
- Interior, Department of

- Bureau of Sport Fisheries and Wildlife
- Bureau of Outdoor Recreation
- Bureau of Land Management
- Bureau of Indian Affairs
- Bureau of Reclamation
- Labor, Department of
 - Occupational Safety and Health Administration
- Transportation, Department of
 - Coast Guard
 - Federal Highway Administration

STATE AGENCIES:

- Agriculture, Department of
- Environmental Quality, Department of
- Fish and Wildlife, Department of
- Forestry, Department of
- Geology and Mineral Industries, Department of
- Human Resources, Department of
- Land Conservation and Development Commission
- Soil and Water Conservation Commission
- State Engineer
- State Land Board
- Water Resources Board

LOCAL AGENCIES:

- City Council
- County Court
- County Commissioners, Board of
- Port Districts
- Metropolitan Service Districts
- County Service Districts
- Sanitary Districts
- Water Districts
- Fire Protection Districts



DIVISION I TRENCHES

101 TRENCH EXCAVATION, BEDDING AND BACKFILL

101.1.00 DESCRIPTION

Minimum general standards for facilities shall be as set forth in Section 00405 of the Oregon Standard Specifications for Construction, current edition. This work consists of excavating trenches, constructing trench foundations, placing bedding, pipe zone material, and trench backfill.

101.1.01 PIPE ZONE

The pipe zone is defined as the full width of the trench from 4-inches below the bottom outside surface of the barrel of the pipe to 12-inches above the top outside of the barrel of the pipe.

101.1.02 TRENCH FOUNDATION

The trench foundation shall be undisturbed material. Where ground water, unsuitable material, or other unstable conditions exist additional excavation may be required.

101.2.00 MATERIAL

101.2.01 BEDDING & PIPE ZONE

Pipe zone material and bedding for pipes and structures shall be Class C backfill, or other select material as directed by the Engineer. Samples of the proposed material including technical information such as gradation, proctor test results, and certifications shall be submitted to the Engineer for approval prior to construction.

101.2.02 TRENCH BACKFILL

Material used for trench backfill below subgrade shall be earth, gravel, rock, or combinations thereof, free of frozen material and with less than 1 percent by weight of deleterious material such as humus, organic matter, vegetable matter, clods, sticks, and debris. The backfill material shall predominate in the finer sizes and, in place, shall present no isolated voids, silt pockets, or areas of larger stones, which could cause fracture or denting of the utility or structure, or subject it to undue point stresses.

Pumice and cinders are not acceptable for trench foundations, pipe bedding, pipe zone or trench backfill material. Material with a compacted density less than 80 pcf based on AASHTO T-99 standard proctor is not acceptable.

Trench backfill shall consist of the following material:

101.2.02A Class A Backfill

Class A backfill shall be native or common material acceptable to the Engineer. The intent is that material excavated on the site may be used for backfill after being screened on a 3-inch screen. Class A backfill shall meet the following:

- 1) No rock, soil clod or hardpan fragment has a dimension of greater than 3-inches.

- 2) No more than 30 percent by weight shall be larger than ¾-inch.
- 3) Material passing the #200 sieve shall not exceed 25 percent by weight of the total sample.

101.2.02B Class B Backfill

Class B backfill shall be pit run or bar run material, well graded from coarse to fine. The maximum dimension shall be 3 inches and meet the following criteria:

- 1) Shall have more than 90 percent by weight passing a ¾-inch screen
- 2) Shall contain no rock, soil clod or hardpan fragment larger than 1-inch
- 3) Shall be free of humus, organic matter, vegetable matter, frozen material, clods, sticks and debris
- 4) Shall contain no more than 10 percent by weight passing the #200 sieve.

101.2.02C Class C Backfill: Minimum standards under new or existing asphalt and pipe zone.

Class C Backfill shall be ¾- clean, well graded crushed rock /gravel, free from organic matter and in accordance with the latest ODOT Standards and Specifications.

101.2.02D Cement Treated Base (CTB) Backfill

Cement Treated Base shall conform to the requirements of the Oregon Department of Transportation, State Highway Division. It shall contain 4.5%- 5.5% cement by weight (1 to 2 sacks of cement per ton). CTB shall be used as trench backfill for street crossings where subgrade conditions are likely to cause differential settlement of the trench section, and for high traffic areas as directed by the Engineer.

101.2.02F Controlled Low Strength Material

Controlled Low Strength Material (CLSM) shall conform to Section 00442 of the Oregon Standard Specifications for Construction. The minimum proportions of the mix shall be one sack cement to one ton of sand. CLSM may be placed in one lift, but do not agitate or use mechanical compaction. CLSM shall be required as backfill for trenches less than 18 inches in width (section 101.3.01C) or in high traffic areas as required by the Engineer.

101.3.00 CONSTRUCTION

101.3.01 TRENCH EXCAVATION

101.3.01A General

The Contractor shall be solely responsible for obtaining all applicable State, County, or City street cutting permits, and shall comply with all provisions of the permits. The Contractor shall comply with all City, County, State and Federal Highway Construction Safety and Health Standards pertaining to trenches and excavations, and traffic control. Prior to installing pipe or other utility in an unimproved street, the roadway shall be staked for subgrade to assure that adequate bury, depth of cover, and utility separation is acquired.

101.3.01B Trench Width and Depth

The trench depth below the finish profile elevations and width at the bottom shall be as listed in the following table for the size and type of pipe as indicated on the approved plans. The top of the ditch shall be 6 inches wider than the nominal width, and shall conform to all safety standards and regulations.

Pipe Size I.D.	Min. Depth Wtr & Sewer	Max Width Wtr & Sewer	Min. Width Water	Min. Width Sewer
Less than 6"	32"	30"	24"	30"
6"	48"	36"	24"	30"
8"	50"	36"	24"	30"
10"	52"	42"	30"	30"
12"	54"	42"	30"	30"
14" - 16"	56" - 58"	48"	36"	36"
18" - 24"	60" - 66"	52"	40"	40"
Greater than 24"	66"	60"	48"	48"

101.3.01C Trenches Narrower Than 18 Inches

Trenches less than 18 inches in width under pavement shall be backfilled with controlled low strength material (CLSM).

101.3.02 PIPE BEDDING

The bottom of the trench shall be graded by hand to the elevation at which pipe is to be placed with a 6 inch depth of compacted pipe bedding material as specified in 101.2.02. Before each section of pipe is installed the grade shall be checked with a straight-edge, level/rod, or laser level, and any irregularities found shall be corrected. The pipe bedding shall form a continuous and uniformly compacted bearing surface and support for the pipe or structure.

A coupling or bell hole shall be dug in the trench bottom having a length, width and depth sufficient to allow assembly of the pipe, and to maintain a minimum clearance of 6 inches between coupling and undisturbed trench bottom. The trench bottom between coupling holes shall be dug flat and cut true and even to grade so as to provide continuous contact of the bedding with the pipe.

No blocking shall be used to achieve the required depth of bedding.

101.3.03 PIPE ZONE

Pipe zone material shall be Class C material as specified in 101.2.02C. Backfill material above, and around the pipe shall be carefully and thoroughly tamped in layers no more than 6 inches deep to achieve 95% of maximum density as determined by AASHTO T-99 or ODOT Manual of Field Test Procedures.

101.3.04 TRENCH BACKFILL

Backfill material shall be Class C placed in accordance with APWA Section 00405.46 except for the following options:

- 1) For trenches outside of the existing or new asphalt roadway the backfill material may be Class A backfill as specified in 101.2.02A from 12" above the pipe zone to subgrade.
- 2) For trenches under ODOT and Deschutes County roadways and for specific other cases designated by the City Engineer the backfill material shall be Class D or F depending on jurisdiction as specified in 101.2.02D or F from 18" above the pipe zone to subgrade..

The material shall be carefully and thoroughly tamped in layers to achieve 95% of maximum density as determined by AASHTO T-99. Methods of testing materials in the field may include nuclear

densometer, sandcone, WA densometer, or other methods approved by the Engineer.

101.3.05 COMPACTION TESTING

For trenches with three feet or less of cover over the pipe zone, one compaction test shall be taken per 100 lineal feet of trench at top of pipe zone and at finish subgrade elevations. For installations deeper than three feet trench backfill shall be tested at one passing test for each 3 feet of fill and 100 LF of trench, or as directed by the Engineer. Passing tests shall meet the requirements for compaction in that segment of the trench backfill. All sampling and testing shall be performed by an independent testing laboratory acceptable to the City of Sisters. All results, including failing tests, shall be submitted to the City of Sisters inspector or Engineer prior to any subgrade inspection and approval.

101.4.00 MEASUREMENT AND PAYMENT

101.4.01 LINEAR FOOT BASIS

The length of trench shall be measured horizontally from center to center of manholes, or to the end of pipe, whichever is applicable.

Payment for TRENCH EXCAVATION will be at the unit price bid per lineal foot for the specified pipe class and diameter as measured. Payment shall include all materials, tools, labor, equipment, bedding, backfill and incidentals required to excavate and backfill the trench as specified. All excavation shall be considered as unclassified as specified in Section 204.1.02, unless specifically called for in the Schedule of Bid Items.

101.4.02 INCIDENTAL BASIS

When not listed in the Schedule of Bid Items as a separate pay item, TRENCH EXCAVATION shall be considered incidental to the price bid for the specified pipe or conduit and diameter.



DIVISION II - STREETS AND RELATED WORK

201 MOBILIZATION

201.1.00 DESCRIPTION

This work consists of operations necessary to move personnel, equipment, supplies, and incidentals to the project site, set up all field offices and facilities, and other preparatory work necessary in preparation to perform contract work.

201.4.00 MEASUREMENT AND PAYMENT

201.4.01 LUMP SUM BASIS

When listed in the proposal as a pay item, payment for mobilization will be the Contract lump sum amount. There will be no measurement of work performed under this section.

The amounts paid for mobilization in the progress payment(s) will be based on the percentage of the original Contract amount that is earned from other contract items, not including advances on materials, and as follows:

- 1) When 15% is earned from other bid items, 50% of the amount for mobilization or 15% of the original contract amount, whichever is the least, less normal retainage, will be paid.
- 2) When 50% is earned from other bid items, 100% of the amount for mobilization or 50% of the total original contract amount, whichever is the least, less normal retainage, will be paid.
- 3) Upon completion of all work on the project, payment of any amount for mobilization in excess of 50% of the total original contract amount will be paid.
 - a. The above schedule of payments for mobilization shall not be construed to limit or preclude progress payments otherwise provided for in the contract.

201.4.02 INCIDENTAL BASIS

When neither specified nor listed in the proposal for separate payment, mobilization shall be considered incidental work for which no separate payment will be made.

202 TEMPORARY TRAFFIC CONTROL

202.1.00 DESCRIPTION

This work consists of maintaining facilities to accommodate public traffic through and within the project site as necessary to conduct construction operations so as to offer the least possible obstruction and inconvenience to the public, and to protect pedestrian and vehicular traffic. Where applicable, Section 00220 of the *Oregon Standard Specifications for Construction* and the *Manual of Uniform Traffic Control Devices* shall apply. The work shall include, but is not limited to the following, hereafter referred to as Traffic Control Devices:

- A. Semi-permanent Traffic Control Devices are defined as devices maintained at one location during the life of the contract or until replaced by other signs.
- B. Temporary Traffic Control Devices are such devices as certain warning signs and traffic cones which may be moved frequently.

C. Flaggers include personnel, pilot cars and associated warning signs.

202.1.01 TRAFFIC CONTROL PLAN

At the pre-construction conference, the Contractor may be required to submit to the City Engineer for approval a Traffic Control Plan and Schedule for the type and placement of all Traffic Control Devices and other Temporary Traffic Control. The Contractor's plan shall include such items as the spacing and size of Traffic Control Devices, the legends of warning signs, the methods of supporting Traffic Control Devices, the number of flaggers required, and periods of operation requiring flaggers.

During the performance of the work, the Contractor shall notify the Engineer, and obtain approval from the Engineer, for any revision or modification of this plan.

All Traffic Control Devices shall remain the property of the Contractor.

202.1.02 FAILURE TO MAINTAIN TRAFFIC CONTROL DEVICES

Failure to maintain Traffic Control Devices in accordance with the plans and specifications shall result in the immediate suspension of work. During suspension of the work for failure to maintain Traffic Control Devices, workdays will continue to be charged to the Contract. The following representatives of the City of Sisters shall have the authority to suspend work for failure to maintain Traffic Control Devices:

- City Engineer or authorized representatives
- Public Works Director
- Uniformed officers of the Deschutes County Sheriff's Department

During suspension of work, for any reason, the Contractor shall continue to be responsible for and shall maintain temporary Traffic Control.

202.2.00 MATERIALS

Flaggers, procedures, barricades, signs, and other Traffic Control Devices shall conform to the latest edition of the *Manual on Uniform Traffic Control Devices for Streets and Highways*, published by the U.S. Department of Transportation Federal Highway Administration, and the Oregon Sign Policy and Guidelines for the State Highway System, published by the Oregon Department of Transportation.

202.3.00 CONSTRUCTION

Semi-permanent Traffic Control Signs shall be mounted on single or double posts such that the bottom of the sign is 7' above the ground. All other signs may be mounted on acceptable portable and temporary bases.

All devices shall be maintained by the Contractor in proper position, clean, and legible at all times. Lights, flashers, and similar devices shall be kept clean, visible, and operable. Devices damaged or destroyed by any means shall be immediately repaired, restored, or replaced by the Contractor. On a daily basis, and prior to beginning and ceasing operation, the Contractor shall patrol the traffic control area for the purpose of maintaining devices and removing or covering all non-applicable signs during periods not needed. Unless otherwise specified in these documents, public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible. The Contractor shall provide access to private properties at all times except during brief, urgent stages of construction.

The Contractor shall delineate all business accesses with blue tubular markers on 10 foot maximum spacing. Mark the access with Type "B" "BUSINESS ACCESS" signs. Locate and install these signs on Type 2 barricades as directed. Business owner(s) shall be given 72 hours notification in advance of operations requiring temporary closures of business access, when necessary and when no other access to the business can be provided.

The Contractor shall give occupants of property fronting a street at least 48 hours notice before more than half the street is closed to vehicular traffic due to his operations. The Contractor shall not close a street without prior knowledge of the Engineer and permission of the City of Sisters. The Contractor is responsible for coordinating the closing of a street with all concerned and affected individuals and public agencies. Notify, in writing, the Engineer, all affected emergency services, school district, and U.S. Postal Service a minimum of seven (7) calendar days prior to any road closure.

For pipe installation in major City streets and intersections, backfill and pave the excavation at the end of each shift, or use other methods as approved by the Engineer to provide a traversable surface across the entire roadway width during non-working hours. If this requirement is not met, provide additional traffic control measures, including flagging, as required by the Engineer at no additional cost to the City.

202.4.00 MEASUREMENT AND PAYMENT

202.4.01 LUMP SUM BASIS

When listed in the proposal as a separate pay item, measurement and payment for Temporary Traffic Control will be made on Lump Sum basis. Payment will be pro-rated based on workdays charged over the contract time. Upon completion of the contract any remaining portion of the lump sum amount will be paid.

202.4.02 INCIDENTAL BASIS

When neither specified nor listed in the Proposal as a separate pay item, Temporary Traffic Control will be considered incidental work for which no separate payment will be made.

202.4.03 PER ITEM BASIS

When listed in the proposal as a separate pay item, Semi-permanent Traffic Control Signs shall be measured by the square foot of sign area. Payment will be only for those signs approved by the Engineer and called for in the Traffic Control Plan and Schedule. Payment shall be full compensation for constructing, providing and maintaining the traffic control signs for the life of the contract. Where flashers, lights or the equivalent are specified, any cost for such items shall be incidental to the price bid. Payment will be at the contract unit price bid for Semi-permanent Traffic Control Signs.

When listed in the proposal as a separate pay item, semi-permanent Traffic Control Barriers shall be measured by the lineal foot of barrier face. Payment will be only for those barriers approved by the Engineer and called for in the Traffic Control Plan and Schedule. Payment shall be full compensation for constructing, providing, and maintaining the Traffic Control Barriers for the duration of contract work requiring barriers. Where flashers, lights, or the equivalent are specified, any cost for such items shall be incidental to the price bid. Payment will be at the contract unit price bid for Traffic Control Barriers.

When listed in the proposal as a separate pay item, Flaggers shall be measured by the actual

hours each Flagger is required to work. Hours will be measured to the nearest whole hour. All associated safety equipment, signs, tools and materials shall be incidental to the price bid. Payment will be only for Flaggers approved by the Engineer and called for on the Traffic Control Plan and Schedule. Payment shall be at the contract unit price bid for Flaggers.

203 CLEARING AND GRUBBING

203.1.00 DESCRIPTION

Except as modified or supplemented herein the provisions of Section 00320 of the *current edition Oregon Standard Specifications for Construction* shall apply.

CLEARING AND GRUBBING shall include, but not be limited to, the removal and disposal of all concrete including curbs, sidewalks and walls; all vegetative growth such as trees, snags, down timber, vines, shrubs, brush, stumps; fences, guard rails, irrigation pipe and street structures, pavement, debris and rubbish of any nature; and other similar items not specifically covered by unit price. All debris shall be broken up and removed from the site. The work also includes preserving vegetation and objects designated to remain in place and cleanup of the work area.

203.3.00 CONSTRUCTION

Trees, shrubbery and flowerbeds designated on the plans or directed by the Engineer to remain shall be left in place and care shall be taken by the Contractor not to damage or injure such trees, shrubbery or flowerbeds by any of Contractor's operations.

Where trees exist in parking areas and are not to be removed, it shall be the Contractor's responsibility to trim low limbs which will interfere with the normal operation of Contractor's equipment. The trimming shall be performed in a professional manner by competent personnel prior to Contractor's machine operations and in such a manner as the Engineer or designee may direct.

The Contractor shall be responsible for all damages to existing improvements resulting from his construction operations or acts by his employees.

203.3.01 DISPOSAL

All matter and debris accumulated from clearing and grubbing operations become the Contractor's property. The Contractor shall make arrangements for disposal of this material in accordance with local laws and regulations. All expenses for disposal of waste materials shall be the responsibility of the Contractor.

203.3.02 EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures shall be installed in accordance with Appendix 9B of the Central Oregon Stormwater Manual to insure that sediment laden runoff does not leave areas disturbed by construction.

203.4.00 MEASUREMENT AND PAYMENT

CLEARING AND GRUBBING will not be measured. Removal and disposal of all trees not specifically covered under TREE REMOVAL item shall be considered incidental to CLEARING AND GRUBBING. Payment will be at the contract lump sum amount bid for CLEARING AND GRUBBING. Payment shall include full compensation for all labor, equipment, tools, and incidentals necessary to complete the work and dispose of all waste materials.

204 EARTHWORK

204.1.00 DESCRIPTION

Except as modified or supplemented herein, the provisions of Section 00330 of the *current edition APWA Oregon Standard Specifications for Construction* shall apply.

This work consists of excavation and grading the roadway, side streets, sidewalk and planting areas, alleys, cuts, embankments, slopes, roadway ditches, side streets, driveway and alley approaches and all other earth moving work required in the construction of the project including disposal of all surplus material. The term "earthwork" will be used as a general term to designate the work included within the scope of this section.

204.1.02 UNCLASSIFIED EXCAVATION

Unclassified excavation is defined as all excavation regardless of the type, nature, or condition of the materials encountered. The Contractor shall assume full responsibility to estimate the kind and extent of the various materials to be encountered in the work.

204.2.00 MATERIALS

Excavated materials may be used on the project unless declared unsuitable or surplus by the Engineer. It is the responsibility of the Contractor to separate unsuitable material from the excavated material, and to make arrangements for disposal of surplus material.

204.2.01 BORROW AND EMBANKMENT MATERIAL

Fills and embankments shall be constructed with material from the excavations or borrow material, subject to approval by the Engineer. Should additional fill material be needed, the Contractor shall supply borrow material in accordance with specifications acceptable to the Engineer.

204.3.00 CONSTRUCTION

204.3.01 PRESERVATION OF EXISTING IMPROVEMENTS

Asphalt pavement saw cuts shall be straight lines, having vertical faces and are required wherever existing pavement is to be matched or removed to a line designated on the plans and as directed by the Engineer.

204.3.02 EXCAVATION OF EXISTING IMPROVEMENTS AND MISCELLANEOUS

Removal of existing roadbeds and driveways are included in the general excavation quantities. The Contractor will be responsible for the excavation of areas to be patched with asphalt concrete.

The Contractor shall place base material in all areas designated for asphalt patching as shown on the drawings. Base material shall be provided by the Contractor where a separate contract for paving work exists. No separate payment will be made for this work, but shall be considered incidental to General Excavation.

Base material shall be provided by the Contractor designated to provide base material, such that immediately upon approval by the Engineer, traffic ramps of base material shall be placed at such locations as Driveway AC Patch, ends of existing cut pavement, and other areas as directed by the Engineer. Placing of base material ramps shall not be measured or paid for separately, but shall be considered incidental to GENERAL EXCAVATION.

204.3.03 PREPARATION OF EMBANKMENT FOUNDATION

The area to be filled shall first be cleared and grubbed. The Contractor shall break up and roughen the ground surface before embankment material is placed. Areas designated as Obliterate Roadway shall be broken up so no fragment has a dimension greater than 6". The loosened and broken fragments shall be mixed and blended such that no seams shall form in the compacted fill. The Contractor shall compact the natural ground underlying embankments to the depth of the grubbing, or a minimum of 12", to the relative density specified for the embankment material to be placed.

204.3.04 EMBANKMENT CONSTRUCTION

A. Earth Embankment Construction

Earth embankments shall be defined as those embankments constructed of materials less than 6 inches in greatest dimension. The material shall be placed in lifts as directed by the Engineer not to exceed 3 feet in depth. Within 3 feet of subgrade or finished slope, the placement of fill shall be in lifts not to exceed 8 inches. Each lift shall be compacted by tamping, sheepsfoot rollers, pneumatic tire rollers, or other mechanical means approved by the Engineer, to produce the specified relative compaction. At locations where it would be impractical to use such compacting equipment, fill layers shall be compacted to the specified requirements by hand directed compaction equipment.

Unless otherwise specified, each lift shall be compacted to a relative density of 95% of maximum as determined by AASHTO T-99 Method A.

When soil types or a combination of soil types are encountered that develop densely packed surfaces as a result of spreading or compaction operations, the surface of each lift shall be sufficiently roughened after compaction to insure bonding to the next succeeding layer.

B. Rock Embankment Construction

Rock embankments shall be defined as those embankments constructed of material containing particles greater than 6 inches in greatest dimension.

No rock embankments shall be constructed of material larger than 3 feet in greatest dimension. The material shall be placed in lifts as directed by the Engineer not to exceed 3 feet in depth. Within 3 feet of subgrade or finished slope, the placement of fill shall be in lifts not to exceed 8 inches with any rock fragments having a dimension greater than 8 inches. The rock shall be distributed and manipulated in such a manner that the interstice space between the larger pieces shall be filled with smaller pieces, forming a dense homogeneous and compact mass. All materials shall be maintained at the optimum moisture content during all phases of the embankment operation.

After each lift of material is placed and spread in such a manner to completely fill all interstices with material no greater than 1/4" in greatest dimensions, said lifts shall be compacted with sufficient compaction effort to achieve the required density. Compaction effort shall at a minimum equal or exceed the following levels:

Each 6 inch depth of lift or fraction thereof shall be compacted with at least one full pass with a vibratory roller having a minimum dynamic force of 40,000 pounds impact per vibration and a minimum frequency of 1,000 vibrations per minute, providing this

produces the specified density of material.

If the nature of the material and the Contractor's operation demonstrates that a lift thickness of 1.50 feet is not exceeded and complies with all applicable specifications, then each lift shall be compacted with 4 full passes per 6 inch depth, or portion thereof, of lift with an approved vibratory roller with a dynamic force of not less than 30,000 pounds impact per vibration and a minimum frequency of 1,000 vibrations per minute, providing this produces the specified density.

Rollers shall be so constructed that they exert uniform pressure over the area covered. Vibratory rollers shall be operated at speeds not to exceed 1.5 miles per hour. In addition to the above rolling, each lift shall be further compacted by routing loaded and unloaded hauling equipment uniformly over the entire length and width of the embankment.

Unless otherwise specified, each lift shall be compacted to a uniform density of 95% of maximum as determined by AASHTO T-99 Method A.

204.3.05 COMPACTION AND DENSITY REQUIREMENTS

Fill shall be compacted to not less than 95 percent maximum density as determined by AASHTO T-191, or an equivalent method approved by the Engineer. Compaction testing shall be performed in conformance with Division I, Section 101.3.05

204.3.06 FINISHING

Areas, where "grade only" is called for on the plans, shall be graded to meet the tolerances for the subgrade where base material is to be placed. The surface shall be constructed to a straight grade from the finished improvement elevations shown on the plans to the elevations of the existing ground at the extremities of the area to be graded. Driveways shall be constructed to a straight grade from the finished improvement elevations to the elevation of the existing driveway for the width of the driveway as shown on the plans. The area shown on the plans for "grade only driveway" does not include cut and fill slopes. Such slopes shall conform to the specifications given with the typical section for the station of the driveway. Grade only shall not be paid for separately, but shall be considered incidental to GENERAL EXCAVATION.

204.4.00 MEASUREMENT AND PAYMENT

204.4.01 UNCLASSIFIED AND CLASSIFIED EXCAVATION

Unless otherwise indicated in the Contract Documents, all excavation shall be considered unclassified. GENERAL EXCAVATION has been computed from cross sections and the excavation will not be re-measured unless there are plan changes that are directed or approved by the Engineer. The estimated quantity on the Schedule of Bid Items will be the measured quantity for payment. In the event of plan changes, the estimated quantity will be adjusted to reflect the change. Changes in general excavation will be measured by the cubic yard and payment will be made at the contract unit price bid for GENERAL EXCAVATION.

The unit price bid per cubic yard shall include full compensation for all labor, equipment and materials required to excavate the roadway to the lines and grades shown on the plans.

Asphalt pavement cuts will not be measured or paid for separately, unless specified on the plans and listed in the Schedule of Bid Items. If not listed separately, Asphalt pavement cuts will

be considered incidental work to GENERAL EXCAVATION.

204.4.02 EMBANKMENT

The pay quantities of "Embankment in Place" will be limited to the neat lines of specified cross sections, lines, grades and slopes and above the ground or base elevations existing at the time embankment construction thereon begins. The pay quantities will not include additional quantities required caused by subsidence or settlement of the ground or foundations, to settlement of materials within the embankments, or to shrinkage, washout, slippage or loss of material regardless of cause. If at any time during construction the contractor feels that this is not an accurate representation of actual embankment constructed, he/she shall notify the City immediately of the possible discrepancy. The Contractor shall be responsible for collection of data necessary to determine the actual amount of construction embankment. The cost of data collection will be considered incidental to payment for unit prices, and no separate payment will be made. Cross-Sectional information used in the design of the project will be made available by the City.

205 WATERING

205.1.00 DESCRIPTION

Except as modified or supplemented herein, the provisions of Section 00340 of the *current edition Oregon Standard Specifications for Construction*, shall apply.

This work consists of furnishing and applying water, or combinations of water and additives for compacting and preparing excavations, embankments, backfills, subgrades, subbases, surfacings or for dust control, clean-up, or other purposes as determined by the Engineer. Excluded from this section is water used in portland cement concrete construction and water used for testing purposes.

205.2.00 MATERIAL

205.2.01 WATER

Water used in the work shall be free of silts and hazardous or deleterious substances. The Contractor shall maintain an adequate supply of water at the job to conduct operations in a timely manner.

The City may provide water for a fee to the Contractor from a fire hydrant or similar source. The Contractor must make application to the City Public Works Department for such service prior to using any City water. Only City furnished and approved metering devices connected to designated fire hydrants may be used to obtain water from the City water distribution system. An approved air gap for backflow prevention shall be provided prior to filling any water trucks or tanks.

205.3.00 CONSTRUCTION

The Contractor shall apply water by means which result in uniform and controlled application.

If the Contractor has not provided water as ordered by the Engineer, the Owner may provide water and charge any applicable costs to the Contractor.

205.4.00 MEASUREMENT AND PAYMENT

205.4.01 UNIT PRICE BASIS

When listed in the proposal as a separate pay item, measurement and payment for Watering will be made on a unit price basis. The Contractor shall be responsible for maintaining an accurate record of the amount of water approved or ordered by the Engineer and applied to the project; and for submitting these records with progress payment requests for payment on a monthly basis. Water will be measured by the number of thousands of gallons actually used according to the records maintained by the Contractor on City authorized forms and as verified by the Engineer.

Payment for water will be at the contract unit price bid for each 1,000 gallons (Kgal) of water, as measured to the nearest 1,000 gal increment.

205.4.02 INCIDENTAL BASIS

When neither specified nor listed in the Proposal as a separate pay item, watering will be considered incidental work for which no separate payment will be made.

206 SUBGRADE

206.1.00 DESCRIPTION

This work consists of excavating and disposing of unstable materials, and placing subgrade geotextiles, rock embankment and/or aggregate backfill necessary for the preparation of the subgrade. Subgrade is defined as the surface area upon which additional materials are to be placed as part of the work covered by this contract, or by future work.

206.3.00 CONSTRUCTION

206.3.01 PREPARATION

Prior to starting subgrade work, all underground work and installation of utilities in the area of the subgrade shall be completed.

The Contractor shall blade, shape, and compact the subgrade to lines and grades as shown or directed, removing all irregularities and securing a uniform surface. The Contractor shall remove all unsuitable material as directed and replace with suitable material at no extra cost to the owner.

After the placement of curbs and drainage structures, the Contractor shall fine blade the subgrade surface to the specified tolerances.

206.3.02 TOLERANCES

Subgrade shall not vary by more than 0.05 foot from the specified grades and cross section, except that, at the discretion of the Engineer, the specified grades and cross section at centerline may vary 0.1 foot, provided that the variance is at least 75 feet from a manhole or fixed feature, does not affect drainage, and a uniform and regular cross section is maintained. Variations within the above specified tolerances shall be compensating so that the average grade and cross section shall meet these specifications.

206.3.03 GEOTEXTILE STABILIZATION

Geotextile fabric installation for embankment reinforcement or subgrade/subbase stabilization

will be as directed by the Engineer in locations where unsuitable materials are found below subgrade. Geotextile installation shall be in conformance with Section 00350 of the **APWA Oregon Standard Specifications for Construction, latest edition.**

206.4.00 MEASUREMENT AND PAYMENT

No measurement or separate payments will be made for work required for the preparation of subgrade. This work is incidental to the price bid for EXCAVATION.

Furnishing and installation of Geotextile fabric, where directed by the Engineer, will be paid for on a square unit measurement basis. Payment will be full compensation for all equipment, labor, and incidentals necessary to complete the work. No separate payment will be made for constructing laps, seams, joints, and patches unless the Engineer orders additional amounts over the minimum.

207 AGGREGATE BASES

207.1.00 DESCRIPTION

This work consists of furnishing and placing, spreading, compacting, and fine grading aggregate base material for streets, driveways, sidewalks, pathways, and other structures. All work shall be in accordance with Section 00641 of the current **Oregon Standard Specifications for Construction**, and as supplemented or modified hereafter.

207.2.00 MATERIALS

Base aggregates shall consist of crushed gravel or crushed rock, including sand, free of frozen material, with less than the percentage listed below by weight of deleterious material, to include humus, organic matter, vegetable matter, clods, sticks, and debris.

207.2.01 FRACTURE OF GRAVEL

Gravel shall have at least one fractured face on 50 percent of the material retained on each sieve size 1 1/2 inch and above and 70 percent for the material passing the 1 1/2-inch sieve and retained on each of the sieves down to 1/4 inch.

207.2.02 DURABILITY

The source material from which aggregate base materials are obtained, produced or manufactured, shall meet the following qualifying test requirements.

Test	Test Method	Requirements
Degradation (Coarse Aggregate):		
Passing No. 20 sieve	ODOT TM 208	30 percent maximum
Sediment Height	ODOT TM 208	3 inch maximum
Abrasion:	AASHTO T 96	35 percent maximum

207.2.03 SAND EQUIVALENT

Base aggregates to be incorporated in the work shall have a sand equivalent of not less than 30 when tested in conformance with AASHTO T 176.

207.2.04 DELETERIOUS MATERIALS

207.2.04A Wood Waste

Allowable limits of wood waste, as determined by weight by test method OSHD TM 225, follow:

- (1) Arterial - 0.1 percent
- (2) Collector – 0.1 percent
- (3) Local Street & Cul-de-sac - 0.35 percent
- (4) All Weather Surface Road - 0.35 percent
- (5) Alley - 0.35 percent

Oversize pieces, which are retained on the top sieve size, are limited to 25 percent of the total amount of wood waste allowed.

207.2.04B Metal Waste

Allowable limit of metal waste, as determined by weight, is 0.1 percent.

207.2.05 GRADING REQUIREMENTS

Base aggregates shall conform to the following grading requirements.

Separated Sizes:	2½"-0	2"-0	1½"-0	1"-0	¾"-0
<u>Sieve Size</u>	% Passing (by weight)				
3"	100				
2 1/2"	95-100	100			
2"		95 - 100	100		
1 1/2"			95 - 100	100	
1 1/4"	55 - 75				
1"		55 - 75		90 - 100	100
¾"			55-75		90 - 100
½"				55 - 75	
3/8"					55 - 75
¼"	30 - 45	30 - 45	35 - 50	40 - 55	40 - 60
No. 10	12 - 27	12 - 27	14 - 30	16 - 33	16 - 36
No. 40	0 - 16	0 - 16	3 - 18	8 - 24	8 - 24
No. 200	0 - 9	0 - 9	0 - 8	0 - 8	0 - 10

Sieve analysis will be determined according to AASTO T 27.

BASE AGGREGATE GRADATION FOR LOCAL STREETS

	1"-0 BASE	¾"-0 BASE
<u>SIEVE SIZE</u>	<u>% PASSING</u>	<u>% PASSING</u>

1 1/2	100	-
1	90-100	100
3/4 -0	-	90-100
1/2 -0	50-80	-
3/8 -0	-	50-80
*1/4-0	35-50	40-60

Recommendation for base: 1"-0 or 3/4"-0.

* Of amount passing 1/4" sieve, 40-60% shall pass the No.10 sieve.

207.2.06 DRY UNIT WEIGHT

Base aggregates for use on arterials and collector streets shall have a dry unit weight of not less than 100 lbs./C.F. as determined per AASHTO T19.

207.2.07 ACCEPTANCE

Aggregate base will be sampled for acceptance in the following priority order:

- (a) Immediately after crushing as long as produced and placed within one year of placement.
 - (b) In the stockpile after all shaping work has been completed; or, one test per project or 1 test every 5,000 cubic yards.
 - (c) In its final state on the roadbed after all processing and prior to the placement of subsequent surfacing materials; See Section 108.2.00 General Conditions, for testing procedures. Frequency: One test per job or one test per 1,000 cubic yards.
- *Jobs 500 Cu. Yd or less may use letter of certification or an approved testing lab as proof of acceptable aggregate base.

207.3.00 CONSTRUCTION

207.3.01 STOCKPILING

The materials to be furnished in stockpiles shall be of the kinds, sizes and quality specified. Each designated size of material shall be placed in a separate stockpile.

Stockpiles shall be at least 8 feet high with side slopes of 1 1/2 horizontal to 1 vertical. The method used in placing the material in the stockpile shall be such as to minimize segregation of the aggregate particles.

207.3.02 MIXING

The materials shall be mixed until well blended. The contractor shall add water during mixing in an amount sufficient to provide optimum moisture content plus or minus 2 percent.

The subbase or base course materials shall be mixed by one of the following methods:

- (a) Stationary Plant Method - Materials mixed by means of a pug mill or other type of mixer, transported to the project at proper moisture content and placed by an aggregate spreader;
- (b) Travel Plant Method - Materials mixed and placed on the project in a continuous operation; or,

(c) Road Mix Method - Materials mixed on the project by motor graders or other approved equipment.

207.3.03 PLACING

207.3.03A Weather Limitations

When, in the judgment of the engineer, weather conditions will be detrimental to the work, the contractor shall suspend operations until the weather is favorable. No aggregate base materials shall be placed in the snow or on a soft, muddy or frozen subgrade.

207.3.03B Equipment

Equipment necessary for construction of aggregate base shall provide for efficient and continuous operation and shall conform to the following requirements.

(1) Hauling equipment - Vehicles for hauling aggregate or mixtures of aggregate and water shall be capable of depositing the material into or in front of spreading equipment with minimum of segregation.

(2) Spreading equipment - The equipment shall be capable of spreading and striking off material to the designated line, grade and transverse slope with a uniform surface texture free of excessive segregation or fracture of material.

207.3.03C Thickness of Lifts

If the required compacted depth of the subbase or base course exceeds 6 inches, it shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.

207.3.04 COMPACTION

207.3.04A Equipment

Equipment used to compact aggregate bases shall be self-propelled steel wheel or pneumatic tire rollers. Rollers shall be capable of compacting materials to a firm, even surface.

207.3.04B Density

During compaction, materials shall be maintained within 2 percent of the optimum moisture content. The Contractor shall begin compaction of each layer immediately after the material is spread and continue until a density of not less than 95 percent of the maximum density has been achieved. Maximum density will be determined by AASHTO T199 (100% Relative Maximum Density of Granular Base Materials).

If the specified compaction is not obtained, the contractor shall notify the engineer. The contractor may be required to use a modified compaction procedure or apply additional compaction effort. If approved materials meeting the specifications cannot be compacted to the required density regardless of compaction effort or method, the engineer may reduce the required density or direct that alternate materials be used. In no case shall aggregate placement proceed until the contractor is able to compact the material to the satisfaction of the engineer.

207.3.04C Frequency

Compaction test results shall be provided at the rate of one test per 500 square yards of

material in place unless otherwise directed by the engineer.

207.3.05 SURFACE TOLERANCE

The surface of the aggregate base shall be within -0.04 foot to +0.02 foot of plan elevation at any one point. The final surface shall not deviate at any point more than 0.04 foot from the bottom of a 12-foot straightedge laid in any direction on the surface on either side of the roadway crown.

When directed by the Engineer, the surface shall be tested with a 12-foot straightedge furnished and operated by the Contractor. The surface shall not vary from the testing edge by more than 0.04 foot at any point. The engineer will observe this testing and may require additional testing. The average of the variation from the design grade shall not be greater than 40 percent of the allowable maximum variation.

207.3.06 AGGREGATE BASE - CURB

The Contractor shall supply base rock to be placed under the curb with minimum depth of 2" under curb. Base rock under curbs is considered incidental to curb construction, and no separate payment will be made.

207.4.00 MEASUREMENT AND PAYMENT

207.4.01 SQUARE YARD BASIS

Aggregate base will be measured on the surface to the nearest 0.1 foot. Payment will be on a square yard basis, to the nearest 0.1 square yard between the hinge points or curb lines.

207.4.02 CUBIC YARD IN-PLACE BASIS

Aggregate base will be measured and paid for on a cubic yard basis, to the nearest 0.1 yard. The thickness will be measured by depth tests, cores, or elevations.

A minimum of one measurement shall be made for each 300 square yards of material placed. The measurements shall be made to the nearest 0.01 foot.

No additional payment will be provided for measurements in excess of the specified thickness.

207.4.04 CUBIC YARD IN STOCKPILE

Aggregate base will be measured and paid for on a cubic yard basis, to the nearest 0.1 cubic yard, for the material in the stockpile.

207.4.05 TON BASIS

Aggregates will be measured and paid for on a ton basis, to the nearest 0.01 ton.

207.4.06 INCIDENTAL BASIS

When not specified nor listed in the bid schedule, base aggregates will be considered incidental work to Curb, Sidewalk, HMA Pavement or Asphalt Trench Patch, and no separate payment will be made.

211 ASPHALT CONCRETE PAVEMENT

211.1.00 DESCRIPTION

This work consists of furnishing and placing asphalt concrete pavement as designated on the plans. Asphalt concrete paving materials and construction shall be in accordance with applicable sections of Part 00700 of the *Oregon Standard Specifications for Construction*, current edition including all ODOT supplements.

Asphalt Patching consists of paving areas as designated on the plans as Asphalt Patching, or as directed by the Engineer. Asphalt Patching areas shall include driveways, cuts in existing pavement areas to facilitate preservation or new construction and other areas that are behind curb or involve a significant amount of hand labor to complete.

211.2.00 MATERIALS

211.2.01 GENERAL

Hot Mixed Asphalt Concrete (HMAC) shall be hot plant mixed, uniformly coated mixture of asphalt cement, graded aggregate and additives as required in accordance with the approved Job Mix Formula. HMAC shall be of the level specified for the class of street and anticipated traffic volume.

Level 1 HMAC - HMAC for use in applications with very low traffic and only limited exposure to trucks.

Level 2 HMAC - HMAC for use in applications with low traffic volumes and low volume truck traffic.

Level 3 HMAC - HMAC for use in applications exposed to moderate truck traffic.

211.2.02 AGGREGATE

Provide coarse and fine aggregates meeting the requirements of APWA Section 0074.10. Aggregates shall be hard, sound, durable, and free of deleterious substances.

(a) Soundness - Provide coarse and fine aggregate for soundness testing using sodium sulfate salt according to AASHTO T104. The weighted average percentage loss shall not exceed 12% by weight.

(b) Durability - Provide aggregate not exceeding the following maximum values:

Test	Test Method	Coarse Aggregates	Fine Aggregates
Abrasion	ASSHTO	30.0%	
Degradation			
Passing No. 20 sieve	ODOT TM208	30.0%	30.0%
Sediment Height	ODOT TM208	3"	4"

Deleterious Substances

The amount of deleterious substances in each test fraction of the crushed aggregate material shall not exceed the following values:

Test	Test Method	Course Aggregates	Fine Aggregates
Lightweight Pieces	AASHTO T113	1.0%	
Wood Particles	ODOT TM225	0.10%	

Friable Particles	ODOT TM221	1.0%	2.05%
Elongated Pieces(at a ratio of 5:1)	ODOT TM229	10.0%	
Plasticity Index	AASHTO T90		0 or NP
Sand Equivalent	AASHTO T176		45 min.

The aggregate shall be free of all other deleterious substances such as soft or disintegrating pieces, clay, loam, or vegetable matter, either in a free state or adherent to the aggregate.

211.2.03 RECLAIMED ASPHALT PAVEMENT (RAP) MATERIAL

Reclaimed HMAC Pavement material used in the production of new HMAC is optional. No more than 30% rap material will be allowed in the new HMAC pavement.

Recycled material used in HMAC pavement shall have a maximum size of 1 inch prior to entering the cold feed. Any recycled material larger than 1 inch shall be separated by screening or broken down by mechanical means to pass a 1-inch sieve, and reincorporated with the balance of the recycled material to form a mixture acceptable to the Engineer.

The recycled material shall be blended with new aggregate to provide a mix conforming to the job mix formula. If there is evidence that the recycled material is not breaking down during the heating and mixing of the asphalt concrete mixture, the Engineer may elect to modify the maximum size requirement.

211.2.04 ASPHALT CEMENT AND ADDITIVES

Provide asphalt cement conforming to the requirement of ODOT's current publication *Standard Specifications for Asphalt Materials*. The applicable specifications are those contained in the current publication on the date the Project is advertised. Use PG 64-28 or PG 70-28 asphalt unless otherwise specified in the Contract Documents. Refer to Design Standards Section 18 for asphalt binder use on various road classifications.

Asphalt in RAP material, when blended with new asphalt shall provide properties similar to the above specified asphalt. When RAP material is used at a rate of less than 30%, no adjustment to the new asphalt will be required. When utilizing RAP at a rate at or above 30%, the combined RAP and new asphalt shall provide blended properties equivalent to the specified grade. Determine the blended properties according to ASTM D 4887. Determine asphalt cement properties for the RAP material from asphalt cement recovered from the RAP according to AASHTO T 170.

Additives to prevent stripping or separation of asphalt coatings from aggregates, and admixtures used to aid in the mixing or use of asphalt mixes shall be standard recognized products of known value for the intended purpose and approved for use on the basis of laboratory tests. They shall have no deleterious effect of the asphalt material and be completely miscible. Do not use silicones as an additive.

211.2.05 MIX TYPE AND BROADBAND LIMITS

- (a) Mix Type** - Furnish the type(s) of HMAC shown or directed. The Broadband limits for each of the mix types are specified below. When the plans show an option of two types for a course of pavement, use only one type throughout the course.
- (b) Broadband Limits** - Provide a Job Mix Formula (JMF) for the specified mix type within the control points listed below:

Sieve Size	3/4" Dense Control Points (% Passing by Weight)		1/2" Dense Control Points (% Passing by Weight)		3/8" Dense Control Points (% Passing by Weight)	
	Min.	Max.	Min.	Max.	Min.	Max.
1"		100				
3/4"	90	100		100		
1/2"		90	90	100		100
3/8"				90	90	100
No. 4						90
No. 8	23	49	28	58	32	67
No. 200	2.0	8.0	2.0	10.0	2.0	10.0

211.2.06 JOB MIX FORMULA (JMF) REQUIREMENTS

Provide a JMF for the mixture to be used on the Project meeting the criteria set forth below. The JMF shall have been performed or verified according to the ODOT Contractor Mix Design Guidelines for Asphalt Concrete within 5 years of the date the contract was advertised. Perform a new TSR when the source of asphalt changes.

	Level 1	Level 2	Level 3
Design Method	Superpave	Superpave	Superpave
Compaction Level	65 Gyration	65 Gyration	65 Gyration
Air Voids %	3.5	4.0	4.0
VMA, % minimum	1/2" - 14.0	3/4" - 13.0	3/4" - 13.0
	3/8" - 15.0	1/2" - 14.0	1/2" - 14.0
		3/8" - 15.0	3/8" - 15.0
VMA, % Maximum	min + 2.0%	min + 2.0%	min + 2.0%
P No. 200/Eff AC ratio	0.8 to 1.6	0.8 to 1.6	0.8 to 1.6
TSR, % minimum	80	80	80
VFA, %	70 - 80	65 - 78	65 - 75

211.2.07 TOLERANCE

After the JMF is determined, the mixture shall conform to the formula within the following tolerances:

Narrow Band Tolerance (From Job Mix Formula)

Constituents of Mixture	Base and Leveling Courses	Surface Course
Aggregate Passing 1", 3/4", and 1/2" Sieves specifies in subsection 211.2.05	Within the Broadband ranges specified in subsection 211.2.05	Within the Broadband ranges specified in subsection 211.2.05
Aggregate passing 3/8" sieve	+/- 7.0%	+/- 6.0%
Aggregate passing No. 4 sieve	+/- 5.0%	+/- 4.0%
Aggregate passing No. 8 sieve	+/- 4.0%	+/- 4.0%
Aggregate passing No. 200 sieve	+/- 2.0%	+/- 2.0%
Asphalt cement content	+/- 0.6%	+/- 0.5%
Moisture content at time of discharge From the mixing plant (upper limit)	0.6% max.	0.6% max.

Compaction Density (lower limit):

(a) Normal Lift Pavement (2" +) - 92 percent of maximum density tested according to WAQTC TM 8.

(b) Control Strip Method - 98 percent of target density or 92 percent of maximum density, whichever is the lower value.

(c) Thin Lift Pavement (less than 1-1/2" compacted thickness) See 211.3.18B

(d) Open Graded Mixes - compact as directed by the Engineer.

211.2.08 MODIFICATION OF MIXES

The Engineer reserves the right to modify specified mixes for use under various traffic conditions on various segments of the work and for feathering, spot patching, and other special purposes. The Contractor shall provide mixes proportioned as directed by the Engineer for such purposes, and allow for such changes in the sequence of operations necessary for placement of the modified materials.

Upon written request from the Contractor, the Engineer may approve field adjustments to the job mix formula of up to 2 percent of the aggregate passing the 1/4-inch sieve, 1 percent for the aggregate passing the #8 sieve, and 0.5 percent for the aggregate passing the #200 sieve. These field adjustments to the job mix formula may be made by the Engineer provided the change will produce material of equal or better quality. The above adjustments, or any further adjustments ordered by the Engineer, will be considered the JMF. Adjustments beyond these limits will require development of a new JMF. The adjusted JMF, plus or minus the allowed tolerances, shall be within the broadband limits.

211.2.09 HMAC ACCEPTANCE

The mixture will be visually inspected by the Engineer. If the mixture is considered suspect, the Engineer may verify that the mixture is within acceptable tolerance limits. When requested, obtain samples according to appropriate procedures in the MFTP under the observation of the Engineer at a frequency established by the Engineer. The Engineer will test for gradation, asphalt content, moisture, and RAP content according to the procedures specified in the MFTP. The Contractor will take corrective action when testing shows that HMAC is not within acceptable tolerances.

211.3.00 CONSTRUCTION

211.3.01 PRE-PAVING CONFERENCE

The contractor and subcontractors who are to be involved in the paving work shall meet with the Engineer for a pre-paving conference at a time mutually agreed upon. At the conference, the contractor shall discuss the proposed methods of accomplishing all phases of the paving work.

211.3.02 WEATHER LIMITATIONS

Asphalt concrete shall be placed on a dry prepared surface when the surface temperature is not less than specified below:

Normal Specified Compacted Thickness of Individual courses*	Wearing Course	All Other Courses
Less than 1 1/2"	55°F	50°F
1 1/2" to 2 1/2"	40°F	35°F

2 1/2" and over	38°F	35°F
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Asphalt concrete shall not be placed during rain, snow, or other adverse weather conditions, except that mix in transit at the time adverse weather conditions occur may be placed if the mix has been covered during transit and is able to be placed at the specified temperature, and if the foundation (base) is free of pools or flow of water, and provided that all other specified requirements are met. Asphalt concrete mixtures shall not be placed when the base is frozen or when, in the opinion of the Engineer or Inspector, existing or expected weather conditions will prevent the proper handling, finishing, and compaction of the asphalt mixture.

211.3.03 STREET WORK

211.3.03A Reconditioning Old Roadbed

Unless otherwise specified, the work required by this section will not be measured or paid for separately as extra work. This work shall be considered incidental to the work required for placing asphalt concrete. An asphalt tack coat shall be applied to all overlay areas and the surface of curbs to the highest pavement elevation.

211.3.03B Tack Coat

An asphalt tack coat shall be applied to all overlay areas, edges and surfaces of existing pavements, portions of concrete structures such as catch basins, manholes, and curbs that will abut asphalt pavement, and any other areas designated by the Engineer. Asphalt tack coat shall be applied by pressure spray equipment. Care shall be taken to shield areas not to directly abut asphalt concrete from being coated by asphalt tack.

211.3.03C Asphalt Concrete Placing

Asphalt shall not be matched to a transverse or longitudinal asphalt edge an end slope of less than 2:1. This requirement shall not apply where the Engineer specifies a feathered edge.

211.3.03D Asphalt Concrete Mixing Plant - DEQ Requirements

Prior to producing and furnishing asphalt concrete from a new or revised stationary plant location or a portable plant, the contractor shall furnish the following items to the engineer:

1. A current air contaminate discharge permit number for the plant being used;
2. The expiration date of the permit; and,
3. A written statement that the DEQ has been advised of the location of the plant and when operation is to commence.

The name and address of the air pollution authority having jurisdiction over the area may be obtained from the engineer.

211.3.03E Plant Scales

Scales shall be accurate to 0.5 percent throughout the range of use and shall be tested and adjusted as often as directed by the engineer to verify continued accuracy.

211.3.04 DRYING, HEATING, and SEPARATING AGGREGATES

211.3.04A Drying

Aggregates shall be dried to the extent that any retained moisture will not result in visible defects in the mixture such as slumping loads, boils, or slicks.

211.3.04B Screening

In batch plants which have screens, the aggregates shall be separated, immediately after drying and heating by screening into the sizes required for separate handling, storing and proportioning at the mixing plant.

211.3.05 HEATING ASPHALT CEMENT

Asphalt heating equipment shall be capable of uniformly heating the asphalt cement to the temperature specified.

The temperature of the asphalt cement when introduced in the mixture shall be not less than 250 degrees nor more than 350 degrees F.

211.3.06 MIXING

All the components of the asphalt concrete mixing plant shall be utilized and operated in a manner to comply with the requirements of this section. The combined materials shall be mixed until the asphalt cement is distributed thoroughly in the mixture and the aggregate particles are completely and uniformly coated.

The moisture content of the mix shall not exceed 0.60 percent at time of discharge from the mixing plant. The temperature of the mix at discharge from the plant shall not exceed 325 degrees F.

211.3.07 TRUCK SCALES

Each pay load of asphalt concrete mixture shall be weighed on vehicle scales meeting the requirements of the APWA Standard Specifications except as follows.

When vehicle scales meeting the requirements of the APWA Standard Specifications are available for check weighing, the contractor, upon written approval of the engineer, will be permitted to use an approved weigh hopper that is accurate within 0.5 percent throughout the range of use. Use of the hopper to determine pay weights will be discontinued when random check weighings indicate that the quantities are not accurate within 0.5 percent.

Each load of mixture shall have a weigh memo provided by the contractor.

211.3.08 HAULING EQUIPMENT

Vehicles used for hauling asphalt concrete mixtures shall have tight, clean, and smooth beds which have been thinly coated with paraffin oil, lime solution, soapy water, or other approved material to prevent the mixture from adhering to the beds. Diesel oil may be used when requested by the contractor and approved by the engineer. During each application of approved coating material, and prior to loading, the vehicle bed shall be drained of all excess coating material.

Hauling vehicles shall be equipped with covers to protect against moisture intrusion and heat loss.

Vehicles which cause excess segregation, leak badly, or delay normal operations shall not be used.

211.3.09 ASPHALT CONCRETE PAVERS

Pavers shall be self-contained, power propelled units with an activated screed or strike-off

assembly, heated if necessary, and capable of spreading and finishing layers of asphalt concrete mixture to the widths, thickness, lines, grades and cross sections required on the project.

The paver shall be equipped with a receiving and distribution system of sufficient capacity for a uniform spreading operation and capable of placing the mixture uniformly in front of the screed without segregation of materials. Extensions added to the paver when used on travel lanes shall have the same augering and screeding equipment as the rest of the paver. The paver shall be equipped with either a manual or electronic line and grade control. When applicable, a windrow pick-up machine shall be used in lieu of an end dump machine.

The paver shall be designed so that minor irregularities in the surface of the base material will not be reflected in the surface of the layer being placed. The weight of the paver shall be supported on tracks or wheels, none of which shall contact the surface being placed. The contact area of the screed or strike-off assembly shall be uniform over the entire width of the mixture being placed, and shall produce a finished surface of the required smoothness and texture without tearing, shoving, or gouging the mixture.

211.3.10 COMPACTORS

Rollers shall be steel wheel, pneumatic tire, vibratory or a combination of these types. They shall be in good condition and capable of reversing without backlash.

211.3.10A Steel Wheel Rollers

Steel wheeled rollers shall have a minimum gross static weight of 8 tons, and a minimum static weight on the drive wheel of 250 pounds per inch of width. For finish rolling, a 6 ton minimum gross static weight is acceptable with the 250 pounds per inch of width not required.

211.3.10B Vibratory Rollers

Vibratory rollers shall be equipped with amplitude and frequency controls and shall be specifically designed for compaction of asphalt concrete mixture. The rollers shall be capable of frequencies of not less than 2,000 vibrations per minute.

211.3.10C Pneumatic Rollers

The pneumatic-tired rollers shall be self-propelled, tandem, or multiple axle, multiple wheeled with smooth-tread pneumatic tires. The tires shall be of equal size and staggered on the axles at spacings and overlaps that will provide uniform compacting pressure for the full compacting width of the roller. Ground pressures shall be at least 80 pounds per square inch of tire contact area. Pneumatic-tired rollers shall be fully skirted to insulate the tires from significant heat loss during compaction.

211.3.11 PREPARATION OF FOUNDATION

All bases and foundations on which pavement is to be constructed shall meet the applicable specifications and be approved by the Engineer prior to the start of paving. Existing bases and foundations shall be reconditioned as specified or as directed.

Broken or ragged edges of existing paved surfaces underlying or abutting the new pavement shall be trimmed back to firm material with a clean vertical edge. Surfaces against which asphalt concrete is to be placed shall be treated with an asphalt tack coat as specified in Section 00730 of the *Oregon Standard Specifications for Construction*.

Depressed areas in existing pavement shall be tacked and leveled with an approved asphalt concrete mixture and compacted with a pneumatic tired roller. This leveling work shall be a separate operation and performed as specified. Leveling material shall be spread by means of a paving machine except in small or irregular areas where the engineer may permit the use of other equipment. At the direction of the Engineer, leveled areas shall have asphalt tack applied prior to placement of subsequent material.

211.3.12 ASPHALT CONCRETE STORAGE

Temporary storing or holding of hot asphalt concrete mixture in storage silos up to 24 hours will be permitted. Trucks shall be loaded from the storage silos in a manner that prevents segregation.

Storing or holding of hot asphalt concrete mixture in open stockpiles will not be permitted.

211.3.14 CONTROL OF LINE AND GRADE

When specified in the contract, the engineer will establish references at reasonable intervals for line and grade control of the placing operations. The contractor shall furnish, place, and maintain supports, wires, devices, and materials as necessary to provide continuous line and grade reference control to the automatic paver control system on either or both sides of the paving machine.

With approval of the engineer, the line and grade reference control may be a floating beam device or multi-footed ski of a length and sensitivity that will control of the paver to the grade specified. After the paving of the first lane, a joint matcher or manual control of line and grade will be permitted with approval of the engineer.

211.3.15 SPREADING, TEMPERATURE CONTROL, AND FINISHING

211.3.15A Spreading

1. General - Asphalt pavers conforming to subsection 211.3.09 shall be used to distribute the mixture. Placing of the mixture shall be continuous and uniform. In areas where patching, irregularities, or unavoidable obstacles make the use of specified equipment impracticable, the mixture may be spread with other equipment approved by the Engineer.

2. Dropoffs - When placing asphalt concrete pavement under traffic in courses in excess of a 2-inch thickness, work shall be scheduled so that at the end of each working shift the full width of the area being paved, including shoulders, shall be complete to the same elevation with no longitudinal dropoffs.

When placing asphalt concrete pavement under traffic in courses between 1 and 2 inches in thickness, work shall be scheduled so that at the end of each working shift a strip of new pavement shall not extend beyond the adjoining strip of new pavement more than a distance normally covered by each shift. Prior to any suspension of operations for a period of one day or more, the full width of the area to be paved, including shoulders, shall be completed to the same elevation with no longitudinal dropoffs.

The transverse dropoff at the end of each strip shall be feathered out in accordance with subsection 211.3.16.

Where abrupt or sloped dropoffs occur within or at the edge of the paved surface, the contractor shall provide suitable warning signs.

3. Construction Joints - The width of the pavement strips shall be adjusted to minimize the number of longitudinal joints required. Longitudinal joints in the wearing course shall be at a lane line or the edge line of a traffic lane. On median lanes and on shoulder areas, joints shall occur only at points designated by the Engineer. The longitudinal joints in one layer or lift shall offset with those in the layer immediately below by a minimum of 6 inches. Underlying longitudinal joints shall be within 12 inches of the edge of a lane or within 12 inches of the center of a lane, except in irregular areas.

211.3.15B Temperature of Mixture

The temperature of the mixture at the time it is placed in final position shall be within 10 degrees of 280°F. The engineer may adjust the lay-down temperature in 10-degree increments to attain maximum workability and compaction. In no case shall the lay-down temperature of mixture be less than 240°F.

211.3.15C Finishing and Details

Segregation of materials, non-uniform texture, fouled surfaces preventing full bonding between lifts of mixture, and other defects determined by the engineer as detrimental, shall be corrected by the contractor at no expense to the owner.

211.3.16 JOINTS

211.3.16A Transverse Joints

On wearing courses, pavement depth, line and grade shall be maintained at least 4 feet beyond the selected transverse joint location. On all courses, a sloped end section shall be constructed. If subject to traffic, the end section shall be sloped at not less than 20.1. If not subject to traffic, the end section shall be sloped at a minimum of 10.1.

When paving is not expected to continue from the transverse joint until the following day of later, paper or other suitable material shall be placed under the material ahead of the transverse joint location.

Prior to continuing the permanent paving lift, the contractor shall remove the material beyond the joint to a vertical face against which paving will resume. The base shall be cleaned of all debris. A tack coat shall then be applied to the vertical edge and surface of the exposed area before paving is continued.

After placement and finishing of the new asphalt concrete, both sides of the joint shall be compacted to the specified density. The joint surface shall conform to the requirements of subsection 211.3.19.

211.3.16B Longitudinal Joints

Pre-determine panel widths to minimize the number of longitudinal joints. For base lifts, longitudinal joints must be within 12 inches of the lane edge. For the surface lift, longitudinal joints must be at the edge of the lane and may not be located directly above the joint in the base lift immediately below. When paving, the roller shall start on the hot mat with the edge of the roller wheel 6 inches from the joint to "pinch the joint". On the second and subsequent compaction passes the roller will roll over the joint with more than half the roller on the hot mat to avoid compacting the cold mat. Any hand raking must be carefully done to avoid segregation of the mix.

211.3.17 THICKNESS AND NUMBER OF LAYERS

The mixture shall be placed in the number of lifts and to the compacted thickness of each lift as shown on the plans. If the compacted thickness of each lift is not shown on the plans, the maximum compacted thickness for any lift shall be 3 inches. Minimum compacted thickness for ½ inch dense graded mix is 2 inches. Maximum compacted thickness for ½ inch dense graded mix is 3 inches. Minimum and maximum compacted thickness for ¾ inch dense graded mix is 3 inches.

211.3.18 COMPACTION

Immediately after the asphalt concrete mixture has been spread, struck off and surface irregularities and other defects remedied, it shall be thoroughly and uniformly rolled until the mixture is compacted.

211.3.18A General

The type, number, and weight of rollers shall be sufficient to compact the mixture while it is still within the specified temperature range. Between October 1 and April 1, pneumatic-tired rollers shall be used for breakdown compaction except on the wearing course where a single coverage with a vibratory or steel-wheel roller shall precede pneumatic-tired rolling. The use of equipment which crushes the aggregate will not be permitted. Rollers shall not be operated in vibratory mode when the temperature of the mixture has dropped below 180 degrees.

Steel roller wheels shall be moistened with water or other approved material to the least extent necessary to prevent pickup of mixture and not cause spotting or defacement of the surface of the mixture.

Rollers shall be operated at speeds recommended by the roller manufacturer and slow enough to avoid displacement of the mixture. The maximum speeds shall be 3 miles per hour for vibratory rollers, 4 miles per hour for steel-wheeled rollers, and 5 miles per hour for pneumatic-tired rollers.

Care shall be exercised not to displace the line and grade of edges. Displacement of any course occurring as a result of the reversing of the direction of a roller, or from other causes, shall be corrected at once by the use of approved rakes and addition of fresh mixture when required.

Any mixture that becomes loose and broken, contaminated, segregated, or is in any way defective, shall be removed and replaced with new mixture at no expense to the owner.

Finishing rolling shall continue until all roller marks are eliminated.

Along curbs and walls, on walks, irregular areas, and other areas not practicably accessible to specified rollers, the mixture shall be compacted with approved self-propelled rollers, mechanical tampers, hot hand tampers, or heavy hand rollers. On depressed areas, a trench roller may be used or cleated compression strips may be used under the roller to transmit compression to the depressed area.

211.3.18B Density Requirements

For a specified lift thickness of less than 1½ inches, the mixture shall be compacted with at least four passes by rollers, excluding finish rolling.

For a specified lift thickness of 1½ inches or greater, the mixture shall be compacted to at least 92 percent of the theoretical maximum density as determined by AASHTO T209.

The engineer may allow the contractor to establish a target density by use of a 200 foot control strip conforming to the Control Strip Method Specified in the ODOT Standard Specifications. The contractor shall retain an independent testing firm to perform the compaction testing. Contractor shall attain 98% of target density for duration of the job.

All additional costs associated with the use of the control strip method shall be borne by the contractor.

211.3.19 PAVEMENT SMOOTHNESS

The top surface of the asphalt concrete pavement shall not vary by more than 1/4" when tested with a 12-foot straightedge either parallel with or perpendicular to the centerline. The straightedge shall be furnished and operated by the contractor. The engineer will observe this testing and may require additional testing.

The joint between the pavement and the top surface of utility structures, such as manhole covers and valve boxes located in the traveled way, shall meet the pavement surface tolerances.

The surface of the finished pavement shall be within 1/4" of the specified line, grade and cross section.

The contractor shall correct any surface tolerance deficiency by a method that has been approved by the engineer. All corrective work shall be completed within 10 work days following notification from the engineer. All corrective work, including furnishing of materials, shall be performed at the contractor's expense and no adjustment in contract time will be made.

211.3.20 SPECIAL PROTECTION UNDER TRAFFIC

No traffic or equipment shall come in contact with the compacted mixture until it has cooled and set sufficiently to prevent marking. Edges shall be protected from being broken down, and edge dropoffs 1 inch or more in height shall be marked with warning devices visible by day and night to the traveling public and placed at spacing as specified or as directed by the engineer.

211.3.21 TEMPORARY PAVEMENT MARKINGS

During paving operations, lane markings shall be maintained throughout the project by applying temporary lane stripes to the roadway each day. Temporary striping shall consist of strips of pavement marking tape a minimum of 1 foot in length on the lane separation line to delineate the path of travel for vehicles. Intervals between marking strips shall be a maximum of 25 feet.

The pavement marking tape shall be 4 inches wide, pressure sensitive, reflective tape of a form suitable for marking asphalt or concrete pavement surfaces. Biodegradable tape with paper backing will not be allowed. Surface preparation and application shall be in conformance with the manufacturer's specifications.

The pavement marking shall be maintained in serviceable condition by the contractor during the interval of time it is in use. All preliminary layout and marking in preparation for application and the application of the temporary striping shall be the contractor's responsibility. If specified, the contractor shall remove the temporary striping prior to placement of subsequent paving materials or permanent lane markings.

211.3.22 SAMPLING AND TESTING

The contractor is responsible for process control and shall conduct sampling, testing, measurement and inspection as necessary to insure the finished pavement meets specifications.

The engineer will determine the suitability of the final product through final acceptance testing. Results of these tests will be used to determine payment deductions, if any to be assessed against the contract.

The engineer shall be permitted to cut samples or to take cores from the compacted mixture for testing purposes. Where samples have been taken, the contractor shall furnish new material and fill the holes as directed with no compensation beyond the unit price for asphalt concrete in place.

211.3.22A Aggregate Gradation and Asphalt Content

The contractor shall take samples from the grade on a random basis in the presence of the inspector for testing by the engineer. A minimum of three samples shall be taken for each 1,000 tons of asphalt concrete or portion thereof.

211.3.22B Compaction

For final acceptance of the pavement, the density of each section of pavement will be determined by random acceptance tests using a nuclear gauge or laboratory analysis of pavement core samples. Density tests will be taken at five randomly selected sites for each section of pavement. The average of the five density tests will constitute the density of the pavement.

A section of pavement will be the area constructed from 500 consecutive tons of mixture or portion thereof. Acceptance tests will not be made within one foot of the edges of the panel or from areas where the specified compacted thickness is less than 1 ½ inches.

When using a nuclear gauge, two readings will be obtained at each site, the second at right angles to the first. The two readings will be averaged to obtain the test density. For any section of pavement, if the contractor requests in writing within two work days after nuclear gauge test results are furnished to the contractor, pavement cores will be obtained at the same randomly selected sites used for the nuclear gauge tests. The density of the core samples will constitute the in-place density of the section of pavement and will prevail over nuclear results. If the Density as determined by the core samples does not meet density requirements, the contractor shall bear the cost of coring and testing.

The engineer shall have the right to test any areas that appear defective in compaction. If the areas are found deficient, the engineer may require the contractor to bring the areas into conformance with the specifications.

211.3.22C Pavement Thickness

The engineer will select locations for non-destructive measurement of core samples to determine pavement thickness.

If non-destructive measurement indicates a pavement section is less than the thickness shown on the plans, or is otherwise out of specification, the contractor may take cores at the same locations to verify the engineer's measurements. If the pavement section is found to comply with specifications, the coring and restoration will be paid for as extra work. Pavement found to be out of specification shall be subject to replacement or to payment at adjusted prices.

In determining deficient or excessive thickness in asphalt concrete overlays, the engineer shall adjust the cross section measurement sequence, average series of measurements, or take other appropriate steps to allow for the desirable leveling of low or high areas on the existing pavement.

Where a deficiency is found and the engineer determines the deficiency serious enough to impair the traffic service expected from the pavement, the area of such deficiency shall be removed by the contractor and shall be replaced with pavement meeting the specifications. The cost of the deficient pavement and of the removal shall be borne by the contractor.

211.4.00 MEASUREMENT AND PAYMENT

211.4.01 TON BASIS

Asphalt concrete will be measured and paid for on a ton basis, to the nearest 0.01 ton. There will be no separate measurement or payment for asphalt cement contained in the mixture

211.4.02 SQUARE YARD BASIS

When listed in the Bid Schedule, Asphalt concrete will be measured on the surface to the nearest 0.1 foot. Payment will be made on a square yard basis, to the nearest 0.1 yard.

211.4.03 SEPARATE TONNAGE OF MIXTURE AND ASPHALT CEMENT

(a) When the bid schedule so indicates, the quantities of asphalt concrete mixture and asphalt cement contained in the mixture will be measured and paid for separately as follows: Asphalt concrete mixture will be measured and paid for on a ton basis, to the nearest 0.01 ton. No deduction will be made for the weight of the asphalt cement or any additive used in the mixture as required by the specifications or ordered by the engineer.

(b) Asphalt cement will be measured and paid for on a ton basis, to the nearest 0.01 ton. If invoice and tank level measurements are not available, the quantities shall be based on extraction tests.

211.4.04 PATCHING AND LEVELING

Patching and leveling work will be measured and paid for in conformance with subsection 211.4.01.

211.4.05 PAYMENT DEDUCTIONS AND REJECTION OF PAVEMENT

211.4.05A Aggregate Gradation and Asphalt Content

A deduction of 1.0 percent of the in-place price for asphalt concrete and cement will be made for each 1.0 percent cumulative weighted deviation beyond the allowable tolerance of each component of the job mix formula specified in subsection 211.2.09.

The following factors shall be used to calculate deductions due to deviations from the job mix formula.

Deviation Weighting

Asphalt Cement	12 x Deviation
200 minus	3 x Deviation
#10	1.5 x Deviation
#40	1.5 x Deviation
All Other Sizes	1 x Deviation

The cumulative weighted deviation is the sum of all weighted deviations as determined from the table above.

A minimum of three samples as a lot shall be averaged to determine any reduction in payment. Where the cumulative weighted deviation equals or exceeds 15.0 percent, the

materials shall be removed and replaced at no cost to the owner.

When asphalt paving materials with a cumulative deviation of less than 15.0 percent are furnished, the engineer may require the contractor to remove and replace defective materials at no cost to the owner or shall deduct from payments to the contractor an amount equal to the cumulative weighted percentage deviations from the job mix formula.

211.4.05B Compaction

Asphalt concrete pavement that does not comply with compaction requirements shall be removed and replaced or, at the discretion of the engineer, be subject to a price reduction determined from the following table:

PRICE REDUCTION SCHEDULE

% MAXIMUM DENSITY (Normal Method)	% Pay*	% TARGET DENSITY (Control Strip Method)
92.0 and above	100	98.0 and above
91.5 – 91.9	95	97.5 – 97.9
91.0 – 91.4	90	97.0 – 97.4
90.5 – 90.9	85	96.5 – 96.9
90.0 – 90.4	80	96.0 – 96.4
89.5 – 89.9	70	95.5 – 95.9
89.0 – 89.4	60	95.0 – 95.4
Below 89.0	0	Below 95.0

* Applies to price for in-place asphalt concrete, including asphalt cement where measured and paid for separately on City of Sisters Public Works contract.

211.4.05C Pavement Thickness

In determining payment reduction for deficient or excessive pavement thickness, a section of pavement will normally be on full roadway station (100 lineal feet). For non-roadway paving and in other situations where the engineer determines the above section is inappropriate, the engineer may establish a different unit of work on which to calculate average thicknesses and price reductions.

When pavement thickness, as determined by the engineer’s measurements or test cores, is found deficient by more than the thickness of the specified surface course of asphalt concrete, the engineer may allow the contractor to place an additional lift of asphalt concrete to bring the total thickness of the pavement into conformance with the specifications.

When the thickness in any section of pavement is found deficient by less than the specified thickness of the surface course, and the engineer allows the pavement to remain in place, payment for that pavement will be made at an adjusted price determined from the following table:

% REDUCTION IN PAY * (Payment on Weight Basis)	% DEFICIENCY IN THICKNESS	% REDUCTION IN PAY * (Payment on Area Basis)
No deduction	0.0 – 5.0	No Deduction
No deduction	5.1 – 10.0	1.0 x Deficiency
0.5 x Deficiency	10.1 – 20.0	1.5 x Deficiency
1.0 x Deficiency	20.1 – 30.0	2.0 x Deficiency

* Applies to price for in-place asphalt concrete, including asphalt cement where measured and paid for separately.

No payment will be made for any area of pavement found deficient in thickness by more than 30.0 percent even though the work is permitted by the engineer to remain in place.

212 ASPHALT CONCRETE PATCHING

212.1.00 DESCRIPTION

Except as modified or supplemented herein, the provisions of Section 00495 of the ***Oregon Standard Specifications for Construction***, current edition shall apply.

212.1.01 GENERAL

Asphalt patching will be required under two general situations:

- a. In new construction asphalt patching shall include driveways, trenching in existing pavement areas and other such areas that are behind the curb and/or involve a significant amount of hand labor to complete the work; and
- b. In existing pavements where the scope of the work is primarily paving underground utility trenches.

212.2.00 MATERIALS

212.2.01 Backfill

- a. Class C Backfill
See Division 1 Trenches.
- b. Cement Treated Base
See Division 1 Trenches.
- c. Pipe Bedding and Pipe Zone
See Division 1 Trenches.

212.2.02 Aggregate Base Shall conform to Section 207.

212.2.03 Asphalt Concrete Shall conform to Section 211.2.00.

212.2.04 Temporary Cold Mix AC Patches Patches constructed of cold mix AC will be acceptable during times when hot mix plants are not operating or to meet temporary trench surfacing requirements. Cold mix AC shall meet the requirements of Section 00735 of the Oregon Standard Specifications for Construction. All cold mix patches, shall be dug out and replaced with hot mix patches when hot mix AC becomes available.

212.3.00 CONSTRUCTION

212.3.01 PREPARATION

212.3.01a Sawcutting

The existing pavement shall be saw cut back to undisturbed areas and the edges shall be straight and vertical. Saw cuts are not permitted in the wheel line and must be located in the center or edge of the lane. Pavement previously sawcut for trenching and damaged during construction must be re-cut to a continuous straight line. A sawtooth pattern to the edge of the pavement patch is not allowed.

212.3.01b Tacking

All existing pavement or concrete surfaces shall be uniformly tacked with asphalt by brushing or spray equipment. A mist or fog application of tack is not sufficient and surfaces must be fully coated.

212.3.02 BASE MATERIAL

This work includes furnishing, fine grading and compacting crushed rock base material at the depth specified under all patching areas. If aggregate base has been placed by trenching contractor, the paving contractor is expected to insure that road base material meets the thickness and gradation requirements and to re-grade and make up material as required constructing the asphalt patch as specified. Base material that has been contaminated by dirt shall be removed.

212.3.03 PAVING

The pavement patch shall be a minimum of 8 inches of aggregate base and 4 inches of hot mix asphalt concrete. Where the existing section is deeper, the patch shall match the existing section. The asphalt shall be placed in two lifts and shall be thoroughly compacted between lifts. The second lift shall be raked sufficiently higher than the existing pavement so that upon compaction the finished surface will match the existing grade without a dip. When checked with a 4' straightedge, a variation of more than 1/4" from the true line and grade shall be cause of rejection of the patch.

Asphalt concrete shall be placed and raked such that, when compacted, the surface will be uniform and smooth and shall match abutting pavement edges. When checked with a 4' straightedge, a variation of more than 1/4" from true line and grade shall be cause for rejection of the patch.

Compacting shall be performed with a steel wheeled roller having a minimum weight of 4 tons, and shall continue until roller wheel marks are no longer discernible. In confined asphalt patch areas where a larger roller is not practicable, the largest steel wheel roller capable of operating in the asphalt patch area shall be used for breakdown compacting. A vibratory plate compaction device may be used for finishing. A vibratory plate compaction device may be used in small asphalt patch areas for both breakdown and finishing with the approval of the Engineer. Where no mechanical means can be used for compaction and finishing a hand tamper shall be used.

212.3.04 TEMPORARY PAVEMENT RESTORATION

To comply with the requirement of pavement restoration within 48 hours of removal or disturbance, the contractor may provide temporary patching. The temporary patching shall be a hard surface consisting of asphalt concrete, asphalt concrete cold mix. CTB (Concrete Treated Base) may be used, but the top portion will require grinding to provide appropriate AC replacement for permanent restoration. Between construction and the end of the 48 hour period, the street surface may be maintained with backfill or crushed rock provided that no subsidence occurs.

212.3.05 SEALING PATCH EDGES

Completely seal all adjoining asphalt concrete surfaces with an edge sealing tack coat. After the tack coat has been placed, place clean sand over the top of the tack coat.

212.4.00 MEASUREMENT AND PAYMENT

212.4.01 INCIDENTAL BASIS

When neither specified nor listed in the proposal for separate payment, ASPHALT CONCRETE shall be considered incidental work for which no separate payment will be made.

212.4.02 ASPHALT CONCRETE PER TON BASIS

When listed in the Bid Schedule, ASPHALT CONCRETE will be measured by the ton to the nearest 0.01 ton. The Contractor shall provide weigh tickets from certified scales to prove the ASPHALT CONCRETE tonnage. Payment for ASPHALT CONCRETE will be at the contract unit price bid per ton of the class of asphalt specified, complete in place.

214.4.03 ASPHALT CONCRETE PATCHING

When listed in the Bid Schedule, ASPHALT CONCRETE PATCHING will be measured by the square yard to the nearest full square yard. Payment for ASPHALT CONCRETE PATCHING will be at the contract unit price bid for ASPHALT CONCRETE PATCHING. This payment shall include full compensation for all labor, equipment, and materials required to perform the work.

212.4.04 ASPHALT CONCRETE PATCH-TRENCH

When listed in the Bid Schedule, ASPHALT CONCRETE PATCH-TRENCH will be measured by the linear foot of trench over the installed utility measured on a horizontal plane. Payment for ASPHALT CONCRETE PATCH-TRENCH will be at the contract unit price bid for ASPHALT CONCRETE PATCH-TRENCH. This payment shall include full compensation for all labor, equipment, and materials required to perform the work.

212.4.05 ASPHALT TACK COAT AND EDGE SEALING TACK COAT

No separate measurement or payment will be made for furnishing and applying asphalt tack coat. Full compensation for tack coat shall be included in the contract unit price bid for asphalt concrete, or asphalt patching, or other items as listed in the Bid Schedule.

212.4.06 AGGREGATE BASE

Where no separate pay item exists for Base Rock, base rock will be considered an incidental item to the work required, and full compensation for base rock shall be included in the price bid for Asphalt Pavement, Patching, or other items of work as listed in the Bid Schedule.

213 CURBS AND GUTTERS

213.1.00 DESCRIPTION

Except as modified or supplemented herein, the provisions of Section 00759 of the *Oregon Standard Specifications for Construction*, current edition shall apply.

This work consists of furnishing, placing and finishing commercial grade concrete curbs, gutters, combination curb and gutter, combination curb, gutter and sidewalk, islands, and traffic separators, hereinafter collectively referred to as structures.

An incidental item included in this work shall be to stamp an "S" or "W" in the concrete curb at all locations where a sewer or water service line crosses under the curb.

The work included in CURB BACKFILL provides for the placing of clean backfill material behind the curbs, between the curb and sidewalk, behind sidewalks, and behind walls, at the grades and slopes shown on the plans.

213.2.00 MATERIALS

213.2.01 PORTLAND CEMENT CONCRETE

Portland cement concrete shall conform to the applicable requirements of Section 00440 of the *Oregon Standard Specifications for Construction*, current edition.

Unless otherwise specified, commercial grade concrete shall conform to ODOT Class 3000. Portland Cement shall be Type I or type II. Air entrainment shall be between 4% and 7% as determined by AASHTO T 152 at the time of placing. The chloride content of any admixtures shall not exceed 0.5% by weight for applications with imbedded steel and shall not exceed 2% by weight for applications without imbedded steel. Set accelerating admixtures shall meet the requirements of AASHTO M 194 (ASTM C494, type C or E.)

The amount of deleterious substances shall not exceed the following limits:

Friable Particles	1% (by weight)
Lightweight Particles	1% (by weight)
Material Passing No.200 sieve	4% (by weight)

Concrete supplier shall provide batch tickets for each load to verify mix ingredients.

213.2.02 AGGREGATE BASE

Aggregate base shall conform to the requirements of Section 207.

213.2.03 CURB BACKFILL

Class A backfill material shall be placed behind the curbs, between the curb and sidewalk, behind sidewalks, and behind walls, sloping it as shown on the standard drawings. The top 8" of the backfill shall be good quality topsoil. Topsoil shall be a fertile, loamy, natural surface soil, well-graded and free from substances toxic to plant growth, noxious weeds, roots, refuse, sticks and lumps. Topsoil material shall be spread smoothly over the specified areas to the thickness, grades and slopes indicated on the plans or as otherwise ordered by the Engineer. Compaction shall be performed by a mechanical tamper or other method approved by the Engineer until the material is firm and unyielding. The finished surface shall be raked by hand.

213.3.00 CONSTRUCTION

213.3.01 PREPARATION OF SUBBASE AND BASE

Curb sub-base and base shall be constructed to the grades, and slopes indicated by the plans or as otherwise ordered by the Engineer. Sub-base shall be compacted to 95% of maximum density as determined by AASHTO T-99 prior to placing aggregate base material. Aggregate base shall be compacted to 95% of maximum density prior to placing curbs.

213.3.03 PLACING, FINISHING, AND CURING

213.3.03A Tolerances

The top and face of the finished curb shall be true and straight. The top surface or face shall not vary more than 1/4" from the edge of a 10 foot straightedge, except at changes in grade or in curves.

213.3.03B Finishing

Concrete shall be finished to a smooth and uniform texture by troweling and floating. The surface shall have a light broomed finish transverse to the direction of traffic, unless otherwise specified.

213.3.03C Curing

Concrete shall be cured by application of a liquid membrane forming compound applied uniformly to the damp concrete by pressure spray methods, or by keeping the concrete protected by covering and moist for a minimum of 72 hours. Curing compounds shall conform to the requirements of AASHTO M 148. All compounds shall be Class A. Solvent based compounds shall be Type 1-D.

Concrete curbs shall be allowed to cure for a minimum of 72 hours before starting spreading and compaction operations for aggregate base against or within 2 feet of new curbs. Curbs cracked, chipped or damaged by equipment operations shall be removed and replaced prior to paving. Curbs shall be replaced in sections by sawcutting at the nearest expansion joints.

213.3.03D Weather limitations

1. Concrete is to be placed when the air temperature is at least 25°F and rising.
2. Concrete shall not be placed on frozen ground. Frost and ice shall be removed from all forms, reinforcing steel, imbedded items, and subgrade.
3. Concrete from the chute shall have a temperature of not less than 55° F.
4. Concrete work shall be protected from freezing for at least seven days after placement. A curing sealant or impervious material shall be placed on the concrete.
5. The inspector can require the Contractor to provide a minimum recording thermometer, having not less than 2 degree divisions, to verify that the temperature at the surface of the work does not fall below 32° F. The reading shall be taken as close to the surface of the concrete as possible.
6. Any concrete indicated as being damaged from freezing shall be rejected and replaced by the contractor at no additional cost to the City.

213.3.04 EXPANSION JOINTS

Expansion joints in curbs shall be placed at no less than 100' spacing. Expansion joints are required on both sides of driveway approach where the top of the flare or wing meets the sidewalk, and at each point of tangency in the structure alignment.

213.3.05 CONTROL JOINTS

Concrete shall be scored with control joints at intervals not exceeding 15', or over contraction joints in concrete underlying the structure. Control joints shall be scored into the concrete a minimum of 1/3 the depth.

213.4.00 MEASUREMENT AND PAYMENT

213.4.01 INCIDENTAL BASIS

When neither specified nor listed in the proposal for separate payment, Curb and Curb Backfill shall be considered incidental work for which no separate payment will be made.

213.4.02 CURB

Concrete curb shall be measured to the nearest foot on a linear foot basis along the face of the curb for the actual length constructed. Payment for concrete curb will be at the price bid for concrete curb of the type and size specified and listed in the proposal.

213.4.03 CURB BACKFILL

When listed as an item in the Bid Schedule, Curb Backfill material will be measured by the linear foot of curb backfilled to the nearest foot. Payment for curb backfill will be at the contract bid unit price per linear foot of backfill, which price shall constitute full compensation for supplying and placing curb backfill.

214 DRIVEWAYS AND APPROACHES

214.1.00 DESCRIPTION

Except as modified or supplemented herein, the provisions of Section 00759 of the ***Oregon Standard Specifications for Construction***, current edition shall apply.

This work consists of forming, furnishing, placing and finishing Portland cement concrete driveways and approaches only. Asphalt concrete driveways shall be covered under Section 212 as ASPHALT PATCHING.

Driveways are considered to be that portion of paved vehicular access that lies behind the sidewalk or driveway entrance. Approaches shall also be referred to as aprons and are generally a transition section 5 feet in width between the grade of the gutter or edge of asphalt and the grade of the top of the curb and/or sidewalk/pedestrian path.

214.1.01 GENERAL REQUIREMENTS

Driveways of all street classifications shall conform to the City of Sisters Access Management Standards. Direct access to an arterial street should be avoided whenever practical, and is subject to approval by the City Engineer or Director of Public Works. Concrete Driveway Aprons are required on all new construction, except asphalt aprons approved by ODOT (Permit required). Driveways to multi-family residences (excluding duplexes) shall meet commercial standards.

Driveways on local streets should be spaced a minimum of 10' apart measured from the top of transition or at the terminus of the radius to the edge of the roadway. The maximum practical spacing should be sought.

The distance between an intersection and the first driveway shall be a minimum of 50 feet, unless variance is approved by City Engineer. The distance shall be measured from the point of tangency of the intersection curb to the nearest edge of the first driveway. The City Engineer may determine the minimum distance for commercial streets and industrial to be greater, dependent upon frontage and type of expected traffic (See Table 7-2 of the **2010 Sisters Transportation Plan**).

Residential driveway maximum width shall be 24'; commercial/Industrial driveway maximum width shall be 36', unless a variance is granted.

214.2.00 MATERIAL

214.2.01 PORTLAND CEMENT CONCRETE

Portland cement concrete shall conform to the requirements of Section 213.2.01.

214.2.02 AGGREGATE BASE

214.2.02A

Portland Cement Concrete Base aggregates for PCC driveways and approaches shall consist of Class C material meeting the requirements of Section 101.2.02C.

214.3.00 CONSTRUCTION

Driveway aprons shall be 6" thick, or as shown on the plans. Any transition from 6" to 4" thickness shall not occur in the apron.

214.3.01 PREPARATION OF SUBBASE AND BASE

Preparation of subbase shall conform to the requirements of section 213.3.01 and the following; If the in-situ material does not meet the material specification for base, then the base shall be excavated 10 inches from finish grade, raked smooth of large rocks and other organic material, and 4 inches of base placed and compacted per standard drawing. If the in-situ material meets the specification for base, as proven by the Contractor and verified by the City Engineer, then the base shall be excavated 6 inches from finish grade, raked smooth of large rocks and other organic material, and compacted.

A minimum of one test every 300 feet, or as directed by the City Engineer, is required. Costs of passing tests are the responsibility of the City. Costs of failing tests are the responsibility of the Contractor.

214.3.02 PLACING, FINISHING, AND CURING PORTLAND CEMENT CONCRETE

This work shall conform to the requirements of Subsection 213.3.03 and the following;

Finish concrete surfaces to smooth and uniform texture by troweling, floating and cross brooming. Lightly groove or mark surfaces into squares or other shapes to match markings on similar existing surfaces in the vicinity, as directed.

On all sidewalk ramps and accessible route islands, install truncated domes as shown. Place according to the manufacturer's recommendation.

Keep the concrete structure free from contact, strain and public traffic for at least seven calendar days or longer as directed. Do not apply curing compounds to the designated truncated dome areas of sidewalk ramps and accessible route islands.

214.3.03 EXPANSION JOINTS

Expansion joints are required at ends of driveway in accordance with the standard drawings.

214.3.04 CONTRACTION JOINTS

Contraction joints are required at the center of the driveway in accordance with the standard drawings.

214.4.00 MEASUREMENT AND PAYMENT

214.4.01 INCIDENTAL BASIS

When neither specified nor listed in the proposal for separate payment, Driveways and Aprons shall be considered incidental work for which no separate payment will be made.

214.4.02 DRIVEWAYS

Driveways shall be measured on a square foot basis to the nearest whole square foot. Payment for driveways shall be at the unit price bid at the thickness and measurement unit specified.

214.4.03 DRIVEWAY APRONS

Aprons shall be measured on a square foot basis to the nearest whole square foot. Transition sections from apron to sidewalks shall not be measured. Payment for aprons shall be at the unit price bid at the thickness and measurement unit specified.

215 SIDEWALKS AND PATHWAYS

215.1.00 DESCRIPTION

Except as modified or supplemented herein, the provisions of Section 00759 of the ***Oregon Standard Specifications for Construction***, current edition shall apply. The work covered in this section consists of forming, placing, and finishing standard Portland Cement Concrete sidewalks and pathways in accordance with standard drawings 2-12 to 2-18. This section also covers colored Portland Cement Concrete and interlocking paver sidewalks in accordance with standard drawings. The construction of asphalt concrete pathways and sidewalks shall conform to specifications Section 211.

215.1.01 GENERAL REQUIREMENTS

Structures, such as fire hydrants and central delivery mailboxes, shall not be located in the sidewalk except as approved by the City Engineer. The back edge of the sidewalk shall smoothly meander back from the central delivery mailbox station to provide a 5' wide unobstructed pathway. No portion of the mailbox shall be within 12" of the curb.

Sidewalks constructed abutting the property line are the most desirable. When sidewalk is placed abutting curb, the sidewalk shall be poured separate from the curb. When a sidewalk meanders from the curb the alignment may require special approval; and the following conditions shall be met:

The sidewalk shall generally follow a smooth and gradual alignment free of sharp angles or bends. Horizontal curves shall not be less than 20 foot radius. The centerline of the side walk shall not meander more than 35 feet from the street curbline. All sidewalks shall be within the right-of-way or, in particular situations where topographical or vegetation limitations require

sidewalks out of the right-of- way, Public Access easements shall be provided. The location of meandering sidewalks shall be shown on the plans and profile as a condition for approval by the City Engineer.

Sidewalk grades shall not exceed 5% greater than the existing street grade and in no case greater than a 15% grade. The total vertical separation between the top of curb and the top of the sidewalk shall not be greater than 10 feet. In no case shall the cross slope of the parking strip between the curb and the sidewalk be steeper than 2:1. The grade of meandering sidewalks shall be shown on the profile as a condition for approval by the City of Sisters.

Safety is a primary design consideration. All portions of the sidewalk shall be visible from the street. Trees and brush shall be thinned or removed to provide the required visibility.

Meandering sidewalks shall cross intersections no further back than the center of the curb radius or where bulb-outs are located at the end of the curb radius. Accessible ramps meeting the standards of ADA shall be provided.

The landscape strip so created shall not be less than 36" wide, except where the sidewalk meander returns to be adjacent to the curb. To prevent sharp re-entrant angles in the landscape strip, an edge not less than 8" long and squared to the curb shall be constructed at the juncture of the sidewalk to the curb. Provision shall be made for landscaping the landscape strip. Provision shall be made and facilities installed for the irrigation of the landscape strip.

215.2.00 MATERIALS

215.2.01 PORTLAND CEMENT CONCRETE

Portland cement concrete shall conform to the requirements of Section 213.2.01.

215.2.02 COLORED PORTLAND CEMENT CONCRETE-DOWNTOWN SIDEWALKS

Portland cement concrete shall conform to the requirements of Section 213.2.01 and the following; color shall be determined by the Public Works Director in consultation with the Development Code. Color shall be mixed integrally with the concrete.

215.2.03 INTERLOCKING PAVER SIDEWALKS

Furnish permeable interlocking concrete pavers including base preparation, rat slab substrate construction, and joint sand. The rat slab is defined as a 4" concrete leveling substrate to prevent settling of the pavers. Contractor shall comply with ASTM C 936, Standard Specification for Solid Concrete Interlocking Paver Units, as incorporated by reference.

Interlocking concrete pavers shall be hydraulically pressed concrete, configured for interlocking with adjacent units and complying with ASTM C 936, and having the following characteristics:

- **Compressive Strength** – 8,000 psi average, with minimum of 7,200 psi.
- **Absorption** - 5 percent average, with maximum of 7 percent.
- **Thickness** – 3 – 1/8 inches
- **Style** – Square, 8" x 8"
- **Color** – Selected from manufacturer's full range
- **Sand for Joints** – Fine washed 1/4" – 10 sand

The design is based on the following product: Eco-Prioria as manufactured by Mutual Materials.

215.2.04 AGGREGATE BASE

215.2.04A Portland Cement Concrete

Portland Cement Concrete Base aggregates for PCC driveways and approaches, including but not limited to materials for base, foundation courses, leveling courses, or bedding shall meet the requirements of Section 207. If a designated size is not shown or given, furnish either 1" - 0 or 3/4" - 0, as the Contractor elects.

215.2.04B Colored Portland Cement Concrete and Interlocking Pavers

Base aggregates for downtown sidewalks including colored Portland Cement Concrete and interlocking pavers shall be 1"-0 in accordance with Section 207. A ½" leveling course of clean sand shall be placed between pavers and aggregate base.

215.3.00 CONSTRUCTION

215.3.01 PREPARATION OF SUBBASE AND BASE

Preparation of subbase and base shall conform to the requirements of Section 214.3.01.

215.3.02 PLACING, FINISHING, AND CURING PORTLAND CEMENT CONCRETE

This work shall conform to the requirements of Section 213.3.03.

215.3.03 CURB RAMPS

The Contractor shall construct accessible ramps at the locations shown on the plans and in accordance with the details shown on the plans and in conformance with all ADA requirements. Accessible curb ramps shall meet PROWAG standards in all respects. Prior to pouring curb ramps, confirm that forms are constructed to dimensions and grades shown on plans and that grades and dimensions meet PROWAG criteria. Use a digital level to verify that formwork matches plan and PROWAG grades. Correct all discrepancies before pouring concrete to ensure that finished concrete work meets requirements of PROWAG.

215.3.04 EXPANSION JOINTS

Expansion joints shall be constructed at each point of tangency, at connections to existing curbs, driveways, sidewalks, and pathways, around objects which protrude through, into, or about the sidewalk and at spacings not to exceed 25'.

215.3.05 CONTROL JOINTS

Control joints in sidewalks are required at 5' intervals. Control joints shall be scored in wet concrete a minimum of 1/3 the depth of the concrete section.

215.3.06 INTERLOCKING PAVERS

Furnish permeable interlocking concrete pavers including base preparation, concrete rat slab substrate base construction, and joint sand. The rat slab is defined as a 4" concrete leveling substrate base to prevent settling of the pavers. Verify that substrate is level or to correct gradient, smooth, capable of supporting pavers and imposed loads, and ready to receive work of this Section. Verify that gradients and elevations of substrate are correct.

Work shall include the following:

- Spread crushed rock evenly over prepared subgrade surface to a maximum thickness of 4-6 inch. Dampen and roller compact crushed rock to level and even surface.

- Place and joint and cure concrete base as shown in the Paver Sidewalk Standard Detail.
- Place paver units in straight pattern, from straight reference edge.
- Fill openings and joints with specified joint sand. Remove excess sand by sweeping pavers clean.
- Compact paver units using a vibrating mechanical tamper to compact. Apply additional joint sand to the open joints, filling them completely. Complete a minimum two passes over the paver area.

After sweeping the surface clean, check final elevations for conformance and reset as necessary. The following quality control checks shall be performed:

- The surface tolerance of the compacted surface shall not deviate more than plus/minus 1/4 inch over a 12 ft. straight edge.
- Lippage: No greater than 1/8 inch difference in height between adjacent pavers.
- The surface elevation of pavers shall be 1/8 inch above adjacent concrete walks and curbs.

215.4.00 MEASUREMENT AND PAYMENT

215.4.01 INCIDENTAL BASIS

When neither specified nor listed in the proposal for separate payment, sidewalks and pathways shall be considered incidental work for which no separate payment will be made.

215.4.02 SIDEWALKS

Sidewalks shall be measured on a square foot basis to the nearest whole square foot. Payment for sidewalks shall be at the unit price bid at the thickness and measurement unit specified.

215.4.03 PATHWAYS

Pathways shall be measured on a square foot basis to the nearest whole square foot. Payment for pathways shall be at the unit price bid at the thickness and measurement unit specified.

215.4.04 INTERLOCKING PAVER SIDEWALKS

Interlocking paver sidewalks shall be measured on a square foot basis to the nearest whole square foot. The required construction elements including but not limited to base, concrete rat slab and joint sand are considered incidental work for which no separate payment will be made.

216 ADJUSTMENT OF INCIDENTAL STRUCTURES TO GRADE

216.1.00 DESCRIPTION

This work consists of locating, adjusting, leveling, adding to as necessary, and finish paving around water valve boxes, utility vaults, and adjusting the manholes indicated on the plans so that the frame matches the finished pavement grade.

216.3.00 CONSTRUCTION

The manhole frames shall be adjusted with precast grade rings to a maximum of 12 inches. For height extensions greater than 12 inches, the interior diameter of the manhole shall be adjusted as required with precast sections.

Excavated areas around the structure shall not be less than 3' in width. Backfill shall conform to the requirements for Trench Excavation and Backfill. Where the true adjustment is less than 12", but the manhole barrel must be adjusted to conform to this specification, the adjustment

shall be considered as greater than 12".

216.4.00 MEASUREMENT AND PAYMENT

216.4.01 INCIDENTAL BASIS

When neither specified nor listed in the proposal for separate payment, adjusting incidental structures to grade shall be considered incidental work for which no separate payment will be made.

216.4.02 UNIT PRICE BASIS

Measurement for adjusting incidental structures to grade will be made on a per each basis for the class specified in the Schedule of Bid Items. Payment will be for the actual number of structures adjusted to grade as specified.

217 SIGNING AND STRIPING

217.1.00 DESCRIPTION

This work consists of providing painted striping, pavement markers or signs as shown on the plans and detailed in the standard drawings.

217.2.00 MATERIALS

217.2.01 PAINTED PAVEMENT STRIPING

Materials shall conform to Oregon Standard Specifications for Construction Section 00860.

217.2.01 PAVEMENT MARKINGS

217.2.01A MARKINGS

This Specification describes the minimum acceptable design requirements for furnishing permanent preformed thermoplastic pavement markings, hereinafter referred to as pavement markings, for use as roadway and intersection delineation and marking required by the City. The pavement markings shall consist of preformed letters, numbers, legends, bars, lines, and symbols. Pavement markings shall be of standard skid resistance with no pavement pre-heating requirements prior to installation.

The following specifications shall form a part of this specification as referenced herein. All specifications referenced shall be of the most current revisions:

- AASHTO M 247, Type 1
- AASHTO M 249
- Federal Test Standard Number 595A – Color #17778, Highway White
- Federal Test Standard Number 595A – Color #13538, Highway Yellow
- ASTM E 303
- ASTM C 666

207.2.01B COMPOSITION

1. The pavement markings are to conform to the specifications to be a resilient white or yellow thermoplastic product will uniformly distributed glass beads throughout the entire cross sectional area. Lines, legends, and symbols shall be capable of being affixed to hot mix or open graded friction asphaltic concrete and Portland cement concrete pavements by the use of normal heat from a propane type torch.

2. The pavement markings shall conform to pavement contours, breaks, faults, and shall be capable of remaining in place without being displaced by vehicular traffic.
3. The pavement markings shall have resealing characteristics, such that when heated by a torch will fuse with itself and to previously applied thermoplastic materials.

207.2.01C MATERIALS

1. Materials shall be composed of polymeric materials, pigments, binders, and glass beads, factory produced as a product. The dimensions shall meet the requirements of the most recent edition of the Manual of Uniform Traffic Control Devices. The Thermoplastic material shall conform to the American Association of State Highway Transportation Officials (AASHTO) Standard M 249, with the exception of the relevant differences for the material being supplied in the preformed state.
2. Graded Glass Beads: Graded glass beads shall be clear, transparent, and shall meet the General Requirement of the AASHTO Standard M 247, Type 1. The materials shall contain a minimum of thirty percent (30%) graded glass beads by weight with not more than twenty percent (20%) of the glass beads to consist of irregular fused spheroids or silica. The index of refraction shall not be less than 1.50.
3. Retroreflectivity: The pavement markings shall upon application exhibit uniform adequate nighttime retroreflectivity. The pavement markings shall have average minimum retroreflectivity of 250 millicandelas for white and 150 millicandelas for yellow as measured by fifteen (15) meter geometry with a handheld retroreflectometer.
4. Skid Resistance: New pavement markings with standard skid resistance shall provide a minimum resistance value of 50 British Pendulum Number, when tested in accordance to ASTM E 303.
5. Colors: All legends shall be white unless otherwise specified. White pavement markings shall contain sufficient titanium dioxide pigment to equal Federal Standard 595A color numbered 17778. Yellow pavement markings shall contain sufficient pigment to equal Federal Standard 595A color numbered 13538. The yellow pigment must be of organic nature only and contain no lead chromate.
6. Material Thickness: Pavement markings minimum thickness shall be 120 mils.
7. Bonding: Pavement markings shall retain a minimum of 65% adhesive bond after 100 cycles of freeze thaw action when tested in accordance to ASTM Standard ASTM C 666.
8. Material Resistance: Pavement marking materials shall be resistant to deterioration due to exposure to sunlight, water, salt, oil, gasoline, or adverse weather conditions.
9. Application: Pavement markings will be applied to clean and dry asphaltic concrete or Portland cement concrete, using the propane torch method as recommended by the Manufacturer. The pavement marking shall be capable of being applied at a minimum ambient temperature of 32 degrees Fahrenheit and a maximum pavement temperature of 300 degrees Fahrenheit.
10. Primer/sealer shall be supplied by the contractor if the pavement markings pre-installation primer/sealer is required by the Manufacturer.
11. The shelf life of the pavement markings shall be 2 years from the date of manufacture. The thermoplastic must also melt uniformly with no evidence of skins or unmelted particles for this two-year period.

217.2.01 SIGNS

Sign materials shall conform to the Oregon Standard Specifications for Construction Section 00940 if not specified in the standard drawings except for the Street name signs which are unique to the City of Sisters. Sign posts materials shall conform the Oregon Standard Specifications for Construction Section 00910 if not specified in the standard drawings.

217.3.00 CONSTRUCTION

217.3.01 PAINTED PAVEMENT STRIPING

Installation shall conform to Oregon Standard Specifications for Construction Section 00861. Before installing striping, layout must be inspected and approved by City Engineer's representative.

217.3.01 PAVEMENT MARKINGS

Installation shall conform to Oregon Standard Specifications for Construction Section 00850.

217.3.01 SIGNS

Installation shall conform to City of Sisters Standard Drawings 2-24 to 2-26 or the Oregon Standard Specifications for Construction Section 00905, 00910 and 00940 if not specified in the standard drawings.

217.4.00 MEASUREMENT AND PAYMENT

217.4.01 UNIT PRICE BASIS FOR SIGNS

Measurement for signs will be made on a per each basis for the signs specified in the Schedule of Bid Items. Payment will be for the actual number of signs installed as specified. No separate payment will be made for providing and installing posts.

217.4.02 LUMP SUM BASIS FOR STRIPING AND PAVEMENT MARKINGS

Unless otherwise noted on the plans, striping and pavement markings will be measured and paid for on a lump sum basis.

221 LANDSCAPING

221.1.00 DESCRIPTION

This work consists of furnishing and installing landscaping and irrigation facilities in public rights-of-way, including downtown sidewalks. Except as modified or supplemented herein, the provisions of Sections 01030 and 01040 of the ***Oregon Standard Specifications for Construction***, current edition, shall apply.

221.1.01 DOWNTOWN COMMERCIAL AREA

Furnish labor, materials, equipment, and supervision necessary to complete all work shown on the Drawings and in the Specifications.

Protect active utilities encountered and notify persons or owner agencies. Landscape Contractor shall request utility markouts prior to excavating and verify with General Contractor the location of all underground site utilities.

221.1.02 IRRIGATION

Except as modified or supplemented herein, the provisions of Sections 01120 of the ***Oregon Standard Specifications for Construction***, current edition, and all supplements shall apply.

Furnish all labor, materials, equipment, and supervision necessary to complete all work shown on the Drawings and as described in the specifications. The Landscape Contractor shall

employ and have on site at all times during installation of the system competent individuals knowledgeable about the irrigation products and equipment specified.

Before proceeding with the installation of any section of the irrigation system, Contractor will check and verify the correlation between ground measurements and the drawings. The layout of the irrigation system is schematic. Follow as closely as is practicable. Notify Engineer of changes that have taken place in the field.

Contractor shall have all utilities marked out prior to excavating for irrigation lines. Landscaper shall verify the location of all underground site utilities with General Contractor, and protect all active utilities encountered. Utility owners shall be notified if conflicts occur.

Provide and install sleeves, automatic irrigation system, and valve boxes. Remove existing soil from around existing trees to allow for irrigation heads and new tree grates as detailed. Coordinate installation of sleeves under all hard surfaces with General Contractor.

Points of Connections (P.O.C.) for the irrigation system and valve boxes shall be provided and installed by the Contractor in conformance with the Water Service and Meter Installation Manual. Meters will be provided and installed by the City of Sisters Public Works Department Water.

Protection Of Unfinished Work: Provide protection at all times to keep rock, dirt, gravel, debris and all other foreign materials from entering piping, valves, and other irrigation equipment.

Environmental Conditions: Solvent welding of PVC pipe shall be performed under cover during rainy weather, and is not allowed in freezing conditions.

Storage: PVC pipe and fittings shall not be stored or left out in direct sunlight.

Guarantee And Replacement: Contractor shall guaranty the irrigation system, or any part thereof, against defects in materials and workmanship for a period of one year from the date of acceptance by the City. Any defects appearing during the warranty period shall be repaired or replaced without additional expense to the City of Sisters. Any apparent settling of backfilled trenches occurring during the warranty period shall be properly filled and re-graded, including repair and complete restoration of all damaged planting, paving, or other improvements of any kind.

221.2.00 MATERIALS

221.2.01 DOWNTOWN COMMERCIAL AREA

221.2.02A General - Materials shall be as shown on the Drawings and specified herein.

221.2.02B Topsoil - Clean, friable, natural sandy loam material, free of debris, roots, stones, weeds and grass.

221.2.02C Textural Soil Amendments - Garden Care Compost, as provided by North American Soils, Inc., Portland, Oregon 97203. Five (5) Cubic Yards required for each 9 trees to be planted.

221.2.02D Tree Grates - Tree grates will be provided by the City of Sisters. Contractor shall arrange to pick up grates at Public Works Department.

221.2.02E Trees - Trees will be minimum 2" caliber to be measured 6" from graft and an approved tree type. The City will approve tree type and location before ordering.

221.2.02 IRRIGATION

Furnish only commercial quality materials and equipment, new and of brands and types shown on Drawings and as specified herein. All items proposed for use will be subject to testing to assure compliance with the Specifications. Provide materials for the same or related function that are of the same type and manufacturer.

221.2.03A IRRIGATION EMITTERS

Techline CV' 17 mm Dripline as manufactured by Netafim USA

221.2.03B PIPE, FITTINGS and TUBING

- (1) **PVC Pipe (Polyvinylchloride)** PVC 1120, Type 1, normal impact, I.P.S., NSF approved; plain and/or bell end; conforming to ASTM D1784-69 and D2241-73, color white. Sleeves under paved areas shall be Schedule 40 PVC with minimum 2-inch inside diameter.
- (2) **PVC Pipe Fittings** PVC 1120, Schedule 40, Type 1, normal impact, I.P.S., NSF approved, meeting requirements of ASTM tentative specifications D-2466 and D-1784.
- (3) **PVC Riser** PVC 1120, Type 1, normal impact, I.P.S., NSF approved schedule 80 PVC, conform to PS 21-70. Cut to required lengths threaded both ends, color: dark grey.
- (4) **Irrigation Tubing** Rain Tube - low density polyethylene, manufactured under the strictest ASTM - RB - 1049.
- (5) **Emitter distributing Tubing** Techline CV' 17mm Dripline, as manufactured by Netafim USA.

221.2.03C PVC SOLVENTS:

- (1) **PVC Solvent Cement** NSF approved solvent for PVC through 4", meeting requirements of ASTM D-2564, #705.
- (2) **PVC Primer and Cleaner** Weld-On P-70

221.2.03D BACKFLOW DEVICES Refer to City of Sisters Water Service and Meter Installation Manual. C.O.R. Water Division will determine the final choice for backflow devices.

221.2.03E VALVES and VALVE BOXES:

- (1) **Automatic Control Valve** - 1" - 24 volt Irri: -Rainbird solenoid valves.
- (2) **Quick-Coupling Valve** - One piece, double slot 1" I.P.S. with vinyl cover and lock top. Rain Bird No. 5 LVC.
- (3) **Valve Box** - Jumbo boxes, Traffic rated where exposed to vehicular traffic.

221.2.03F CONTROLLERS and ELECTRICAL:

- (1) **Controller** - Rainbird ESP-8LXME' automatic irrigation controller
- (2) **Control Wire** - Type UF bearing U/L approval for direct underground burial in National Electric Code Class II circuits. AWG sizes, minimum size #16.

221.2.03G GRAVEL 3/4" x 1/2" clean, washed, round gravel.

221.2.03H ACCESSORIES

- (1) **Quick-Coupling Valve Coupler** - Rain Bird No. 55 K-1.

(2) Hose Swivel - Rain Bird No. SH-2.

221.3.00 CONSTRUCTION

221.3.01 DOWNTOWN COMMERCIAL AREAS

221.3.013A General - Remove from all planting openings, stones, mortar, concrete, asphalt, rubbish, debris, and any other materials considered harmful to plant life.

221.3.01B Soil Preparation - Thoroughly mix together 3.0 cubic yards of topsoil and 6 inches textural soil amendment at each proposed tree location.

221.3.01C Tree Grates - Tree grates to be installed after the irrigation and topsoil placement has been completed. Verify tree grate installations with General Contractor.

221.3.02 IRRIGATION

221.3.02A GENERAL

Installation of all materials and equipment will be in accordance with the manufacturer's written instructions and recommendations, and all applicable local and State of Oregon requirements.

221.3.02B EXCAVATION AND BACKFILL

(1) Trenches Pipe trenches shall be straight or 'snaked' slightly allowing for expansion and contraction of PVC pipe.

(a) Grades - Bottoms of uniform slopes 1% minimum grade, except 1/2% minimum where greater slope is not practicable.

(b) Trench Depth - 12" minimum pipe cover.

(c) Trench Width - Provide sufficient width at bottom of trench to allow for proper tamping around pipe.

(d) Preliminary Backfill - Backfill any excess excavation with suitable material free of rocks, sticks, or other material that may damage pipe, and thoroughly compact to give full support to the pipe.

(e) Bell Holes - Provide bell holes to provide support of pipe over its entire length.

(f) Bottom of Trench - Bottom of trenches will be smooth and free of sharp rock and other objects that may damage pipe.

(g) Finish Grade Backfill - Backfill trenches to subgrade, place backfill carefully around and over piping, removing rocks, or other material that may damage pipe; wet and tamp earth in layers not over 6" thick until thoroughly compacted.

(2) Installation

(a) Control Valves - Install control valves, and quick-coupling valves as indicated on Drawings. Verify exact locations in the field with Engineer prior to installation.

(b) Valve Boxes - Install perpendicular/square with building wall, curb or sidewalk for neat uniform appearance.

(c) Emitters - Install emitters at locations shown on Drawings.

(3) Pipe

(a) Install pipe in accordance with standard practice, supported at all points and "snaked" slightly allowing for expansion and contraction.

(b) PVC pipe joints shall be solvent welded except as indicated. Cut pipe square, deburr, wipe from the surface all saw chips, dust, dirt, moisture, and all foreign matter which may contaminate the cemented joint. Apply primer and solvent cement. Make all joints in accordance with manufacturer's recommendations.

(c) Provide a leak-resistance, water-tight joint with freedom of movement at all swing and/or swivel joints.

(4) Control Wiring

(a) Lay in trench under mainline for maximum protection.

(b) Place in conduit and pipe sleeves where indicated.

(c) Single wires (red) to each solenoid from control and a common neutral wire (white) to all solenoids from the controller.

(d) For wire sizes, use wire sizing chart published by manufacturers of battery control valves installed.

(e) No wire splices are permitted.

(5) Automatic Controllers Install as indicated on Drawings.

(6) Flushing and Testing

(a) Mainline Flushing - Flush mainline before installing emitters.

(b) Mainline Testing - Test mainline piping, valves, joints, and fittings for not less than two (2) hours before inspection prior to backfilling. Minimum test pressure will be pre-set by pressure regulator for two hours, with no greater pressure loss than 5 psi.

(c) Defects - Immediately correct any and all leaks or defects found and re-test.

(d) Double-Check Valve Test - Have State Health Department approved double-check valve tested by local State Certified Tester before start up. Have double-check valve tested again at the end of guarantee period. Submit copy of Test Report to Engineer after each test is completed.

(7) Adjusting And Balancing Adjust and balance irrigation system to provide uniform coverage.

(8) Clean Up Keep premises reasonably free from accumulation of debris. On completion of each division of work, remove all debris, equipment, and surplus materials and leave the premises clean.

(9) Maintenance During the first-year guarantee period, shut down and winterize system no later than November 1st. Activate system in spring, no later than April 15th. and balance for coverage. (Shut-down and turn-on is based on weather condition-use best judgment. Notify Engineer of changes due to weather conditions.) Provide the City of Sisters before final payment with "Record Drawings" of irrigation system showing drain valve locations and other revisions, including product information on all materials used. Three copies of product information are required.

(10) Backflow Device Test Report Submit to Public Works Department.

221.4.00 MEASUREMENT AND PAYMENT

221.4.01 DOWNTOWN COMMERCIAL AREA

Payment will be made at the price bid per unit of measurement for each of the items that appear in the proposal. Payment shall be understood to be full and complete compensation for all materials, labor, equipment, tools and incidentals necessary to complete the work as specified in this section.

221.4.02 IRRIGATION

There will be no separate measurement of work done under this section.

Payment will be made at the Contract lump sum amount for the pay item "Irrigation System". The lump sum amount will be considered payment in full for furnishing and placing all piping and fittings, controllers, valves, emitters and sprinklers, and incidentals, leakage testing, and all other work as shown and specified, including excavation, bedding and backfill, electrical service and system orientation.

When not listed in the proposal as a separate pay item, irrigation systems shall be considered incidental to work for Landscaping, and no additional payments will be made.



DIVISION V - STRUCTURES

512 RAILING, FENCING, AND GATES

512.1.00 DESCRIPTION

512.1.01 GENERAL

This work consists of furnishing and installing fences, gates, and gateways of chain link fabric, woven wire fabric, barbed wire, or combinations thereof, in reasonably close conformity to the lines and grades shown or directed by the Engineer. Minimum general standards for fencing shall be as set forth in Section 01050 of the Oregon Standard Specifications for Construction, current edition.

All dimensions shown on the plans are horizontal and vertical measurement. Actual quantities required for the installation may be greater depending on the slope of the terrain. All fenced areas shall have at least one gate.

512.1.02 CERTIFICATION

The Contractor shall furnish material certifications for all fencing materials.

512.2.00 MATERIALS

512.2.01 POSTS, RAILINGS, BRACES, AND APPURTENANCES

Unless otherwise specified, all posts, railings, and similar structural elements shall be standard weight galvanized tubular steel posts conforming to the requirements for AASHTO M 181, having not less than 1.6 oz. galvanizing per SF. Posts and railings shall conform to the following schedule:

Railings and Gates	1.625.inch diameter (1-5/8")
Lind Posts	2.375 inch diameter (2 3/8")
Corner and End Posts	2.875 inch diameter (2 7/8")

Gate Posts

Gate swing 2/5' to 6.0'	3.00 inch diameter
Gate swing > 6.0'	4.00 inch diameter

Tubular posts shall be fitted with a snug-fitting, galvanized metal cap.

512.2.01A STEEL

Steel shall be galvanized in accordance with the requirements of ASTM A153, unless otherwise specified. Shapes, plates, and bars shall conform to the requirements of ASTM A36.

Tubing shall conform to the requirements of ASTM A500, Grade B, ASTM 501 or ASTM A53, Grade B, unless otherwise specified.

Posts shall conform to the requirements of ASTM A27, Grade 65-35, unless otherwise specified. Nuts, bolts, and washers shall conform to the requirements of ASTM A307, Grade A.

512.2.02 FENCING

512.2.02A CHAIN LINK

Chain link fabric, ties, and tension wire shall conform to the requirements of AASHTO M181 supplemented and modified as follows:

Fabric may be zinc-coated steel meeting Type 1, Class D coating requirement, aluminum-coated steel, or aluminum alloy. Use only one type on any Project.

Wire fabric ties, wire ties, and hog rings may be zinc-coated steel wire, aluminum coated steel, or aluminum alloy as elected, regardless of the type of wire fabric used.

Use ductile, zinc-coated steel meeting the coating requirements of ASTM A 641/A 641 M, Class 1 for wire fabric ties, wire ties, and hog rings. Aluminum coated steel wire fabric ties, wire ties, and hog rings shall be coated with at least 0.30 ounce per square foot.

512.2.02A(1) VINYL COATED CHAIN LINK

Vinyl clad chain link fabric shall conform to AASHTO M181, Type IV. The thickness of the coating shall not be included in the gauge rating of the fabric.

512.2.02A(2) SCREENED CHAIN LINK

In addition to the above requirements for fabric, the screening shall be "View Gard" or an approved equal. Fabric shall be 9 gauge galvanized wire woven in 3-1/2 inch by 5-1/2 inch diamond mesh. Top and bottom selvage shall be knuckle finished. The screening shall be vinyl slats, approximately 5/16" x 2-3/8", in an approved color. The slats shall be inserted vertically and shall be securely fastened to the wire fabric with stainless steel staples and a bottom locking slat.

512.2.02B BARBED WIRE

Barbed wire shall be two-strand and either 12-1/2 gauge or 15-1/2 gauge with 4-point barbs spaced a 5-inch intervals conforming to the requirements of AASHTO M 280 (ASTM A 121). Galvanizing shall be Class 3. All barbed wire installed on a Project shall be new or like new, and of the same gauge, unless otherwise approved by the Engineer.

512.2.02C BOTTOM TENSION WIRE

The bottom tensioning wire shall be 7 gauge spring wire with Class 2 coating, unless otherwise specified.

512.3.00 CONSTRUCTION

512.3.01 GENERAL

Materials removed under these provisions, including excess excavation, brush, stumps, and debris, shall be disposed of by the Contractor in a manner satisfactory to the Engineer.

512.3.02 FENCE

Fencing shall be 6 feet high, unless otherwise specified or shown on the plans.

The fence lines designated by the design engineer or City Engineer shall be cleared, grubbed, or otherwise prepared by the Contractor such that the grade shall not vary by more than 6 inches in any 15 foot run. All shrubs, brush, logs, down timber, snags, rocks and other obstacles, including trees up to 6-inches in diameter, which interfere with the fence within 36 inches of the line, shall be removed and disposed of as directed by the Engineer. Trees having diameters greater than 6 inches will normally be preserved by varying the fence alignment to pass by them. As much as possible, the fence shall be erected on natural ground, with the bottom of the fence fabric following the ground contours, with no less than one inch nor more than six inches clearance from the ground surface. Fill or excavate ground surface irregularities that interfere with maintaining the specified ground clearance. Grading shall leave a neat, natural appearance.

All posts shall be set firmly in the ground or in concrete footings as applicable. Excavate for concrete footings to reasonably neat lines, but not less than the specified dimensions and depths in soil, or not less than 18 inches deep in rock. When drilling into solid rock, the Contractor may shorten the post depth such that a minimum of 12 inches of the post is grouted into the rock. Prevent disturbance of original ground at the sides and bottom of the excavation. Footings shall have dimensions not less than dimensions shown on the standard plan, and shall fill the excavated areas and contact firm soil at the sides and bottom. Typically, posts will have a minimum 3 feet of set in excavated soil. Reasonable variation in depths will be permitted and posts may be appropriately shortened or left slightly high, as approved by the Engineer, to avoid unnecessary penetration or excavation in rock or to obtain desired grades along the fence. Concrete shall be cast – in-place and tamped around the posts and brace ends with the posts and braces firmly held in proper position. The surface of the concrete shall be struck off and sloped to a smooth surface at the ground level, and the concrete shall be allowed to cure for at least 5 days before the posts and braces are subjected to strain.

Line posts shall be set along the line of the fence, between end, corner, and gate posts, and typically at the spacing called for on the plans. In some cases, line posts may be set at greater spacing not exceeding 25% greater than called out, or at closer spacing if directed or approved by the Engineer. The intent of this provision is for the actual number of line posts installed to be equal to the number required for typical spacing. The height of the posts above the ground shall not exceed the design height of the fence by more than 3 inches.

Intermediate end posts shall be set in the line of new fence at each summit and at each valley in the grade of the fence where the algebraic difference in the grades of adjoining panels of fence exceeds 30%, and at other points located along the fence line to break the fence construction into approximately equal runs not exceeding the applicable length of runs shown. Corner posts shall be set at angle points in fence alignment where the alignment of adjoining panels of fence changes direction by 20 degrees or more.

Metal post braces shall be firmly attached to metal end posts, intermediate end posts, corner posts, and gate posts, and shall be set in concrete footings when indicated on the plans. Corner posts and intermediate end posts shall be provided with two braces, one each way from the post in the main lines of the fence. End posts and gate posts shall be provided with one brace in the line of the fence as called for on the plans.

Tensioning wire shall be attached to end, gate and corner posts by bands and clamps. Top tension wire shall be either threaded through line post loop caps or held in open slots therein in such a manner as to limit vertical movement. Bottom tension wire shall be tied or attached to line posts by ties or clamps to prevent vertical movement.

Expansion sleeves or couplings in longitudinal top and bottom rails shall be provided at spacing not exceeding 200 feet. Tension wires shall be provided with one turnbuckle or one ratchet take-up in each run of fence.

Place fabric and wire on the face of the post designated by the Engineer. On curved alignment, place the fabric and wire on the face of the post against which the normal pull of the fabric and wire will be exerted. Attach fence fabric and barbed wire to each post according to recognized standard practice for fence construction. Use care in stretching woven wire fabric so the pull is evenly distributed over the longitudinal wires and not more than one-half of the original depth of the tension curves is removed.

Fabric shall be fastened to end, gate, and corner posts, and to gate frames as indicated on the plans. Fabric shall be attached to line posts with wire ties at top and bottom and at intermediate spacing not exceeding 18 inches. Fabric shall be attached to top and bottom rails and to longitudinal tension wire with metal bands or tie wires spaced as detailed, but in no case greater than 24 inches apart.

Splices of fabric and splices of separate lines of wire between posts will be permitted provided that not more than two fabric or separate wire splices, spaced at least 50 feet apart, occur in any one run of fence. Fabric splices shall be with spiral pickets of specified chain link fabric material. Splices of tension wire and barbed wire shall be of the wrap or telephone type with each end wrapped around the other for not less than six complete turns.

In final position, the fabric and barbed wire shall be free from warp and sag, and appearance shall reflect first class workmanship in every detail.

512.3.03 GATES

Gate openings shall be cleared and graded to permit the swing gate to open in a horizontal plane for a minimum of 90 degrees in each direction. Roll gates shall be graded for smooth level operation.

Gates shall be constructed to reflect high quality workmanship. Wire splices shall develop the full strength of the wire, and the finished work shall provide a taught and well-aligned closure of the opening capable of being readily opened and closed by hand.

512.3.03A SWING GATES

Swing gates shall be hinged in a manner to prevent removal of the gate without proper tools. Firmly attach the fittings to the gates and posts. Set each single gate to swing freely inward and outward in a plane so it can be fastened securely in its latch holder, or in the case of double gates, in its latch holder and gate stops. Set double gates on their respective hinge pintles to provide a common horizontal plane in which each single gate swings.

512.3.03B ROLL GATES

Roll gates shall be installed in accordance with the plans and manufacturers details and

recommendations.

512.3.04 REMOVING AND REBUILDING FENCE

Remove and rebuild existing fences as shown or directed. Construct fences to approximately the same condition as the original fence. Salvage the materials in existing fences to be removed and rebuilt and incorporate in the rebuilt fences. Replace fence materials damaged beyond reuse at no additional cost to the Owner. Firmly reset posts to the staked alignment. Post spacing and the number of wires to be strung shall be the same as the original fence. Furnish new staples or clips to fasten the wires to the posts.

512.4.00 MEASUREMENT AND PAYMENT

Payment for fencing, barbed wire, and gates shall be as listed in the Bid Schedule. The price bid shall include full compensation for furnishing all materials, equipment, tools, labor and incidentals necessary to construct fencing and gates complete and in-place.

512.4.01 FENCING

Measurement and payment for fencing shall be on a lineal foot basis, less gate openings, to the nearest foot, for the type and height of fence specified and constructed.

512.4.02 BARBED WIRE

Measurement and payment for barbed wire shall be on a lineal foot basis to the nearest foot measured along the fence line for the type of fence specified and constructed.

512.4.03 GATES

Measurement and payment for gates shall be on a per each basis for the type and length of gate specified and constructed. Barbed wire on gates shall be paid for under the Barbed Wire pay item.

512.4.04 REMOVING AND REBUILDING FENCE

When listed in the schedule of Bid Items, measurement and payment for rebuilding fence shall be on a lineal foot basis at the unit bid price. Payment shall be full compensation for all work, including any new materials necessary to complete the rebuilding of the fence.

512.4.04 LUMP SUM BASIS

When listed in the schedule of Bid Items as a Lump Sum Amount, payment for fencing, gates, and barbed wire shall be paid as a lump sum for the type and length of fence specified and installed. Payment shall be compensation for all materials, equipment, tools, labor, and incidentals required to construct fences.

512.4.05 CLEARING AND GRUBBING

No separate payment shall be made for clearing and grubbing fence lines, gate openings, or areas necessary to install fencing. This work shall be considered incidental to fence construction.

512.4.06 INCIDENTAL BASIS

When not listed in the Schedule of Bid Items as a separate pay item, construction, removal, or replacement of fences, wire, gates, and related work shall be considered incidental to the completion of other work specified in the Contract.