CITY OF ORLAND

GLENN COUNTY, CALIFORNIA

CONTRACT DOCUMENTS

FOR

ROAD M ½ REHABILITATION PROJECT

APRIL, 2025

PREPARED FOR:

CITY OF ORLAND
PUBLIC WORKS DEPARTMENT

Contract Documents were prepared by or under the direction of:

Jeffrey I. Rabo, PE 87152

RAR
ROLLS ANDERSON & ROLLS
CIVIL ENGINEERS
115 YELLOWSTONE DRIVE • CHICO, CALIFORNIA 95973-5811
TELEPHONE 530-895-1422 • FAX 530-895-1409

REGISTERED PROFESSIONAL ENGINEER
JEFFREY I. RABO
No. 87152
CIVIL
State of California

SET NO. 01


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

TABLE OF CONTENTS

NOTICE TO BIDDERS	**3**
INSTRUCTIONS TO BIDDERS	**5**
BID ITEM LIST	**9**
LIST OF SUBCONTRACTORS	**11**
LABOR CERTIFICATION	**13**
NONCOLLUSION AFFIDAVIT	**15**
BIDDER'S SIGNATURE	**17**
BIDDER'S BOND	**19**
FORM OF CONTRACT	**21**
PERFORMANCE BOND	**25**
PAYMENT BOND	**29**
GENERAL CONDITIONS	**31**
SPECIAL CONDITIONS	**49**
TECHNICAL SPECIFICATIONS	**56**
APPENDIX A – CERTIFICATE OF INSURANCE	**139**

1.00 NOTICE INVITING BIDS

Sealed bids will be received at City Hall, City of Orland, 815 Fourth Street, Orland, California, 95963 until 2:00 p.m., May 20, 2025. At that time, all bids will be publicly opened, examined and declared for construction of:

ROAD M ½ REHABILITATION PROJECT

2.00 GENERAL WORK DESCRIPTION

The work to be done under this Contract consists of roadway excavation, construction of curb, gutter, residential driveway cuts, and storm drainage, placement of aggregate base and HMA paving, adjusting utility covers to grade, installing pavement markings, roadside signs and all necessary appurtenances, complete.

Work shall be completed within 90 CALENDAR DAYS from the issuance of the Notice to Proceed by the Owner.

The Engineer's Estimate is approximately $876,000.00.

The contractor shall possess either a Class A license or a combination of Class C licenses which constitutes a majority of the work at the time this contract is awarded. The Contractor must be properly licensed as a contractor from contract award through contract acceptance.

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in Division 2, Part 7, Chapter 1 of the Labor Code, unless currently registered and qualified to perform public work pursuant to Section 1725.5 of the Labor Code. It is not a violation of Section 1771.1 for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

The contractor is to carefully examine the site of the proposed work, and is to make his or her own determination of the scope of the work to be performed, including but not limited to the soil conditions and/or groundwater conditions to be encountered in performing the work, and he or she is to carefully examine these Contract Documents.

Inquiries or questions based on alleged patent ambiguity of the plans, specifications or estimate must be communicated as a bidder inquiry prior to bid opening. Any such inquiries or questions, submitted after bid opening, will not be treated as a bid protest. Bidders' inquiries may be presented through Public Purchase. Any questions or requests for explanation or interpretation of the Contract Documents must be made through Public Purchase at least five (5) days before the time set for opening of Bids. Any explanation or interpretation will be made in the form of Addenda to the Contract Documents and will be published at the locations described in Section 8.00.

3.00 BID SUBMITTAL REQUIREMENTS

To ensure consideration, the Bid must be enclosed in a sealed envelope, clearly marked BID which also bears the name of the project and the date and time set for opening of Bids.

No Bid will be accepted from a Contractor who is not currently licensed in accordance with the provisions of Chapter 9, Division III of the Business and Professions Code. Subcontractors shall also be licensed as required by said code.

4.00 PREVAILING WAGES

Pursuant to Section 1773 of the Labor Code of the State of California, the general prevailing wage rates in the county, or counties, in which the work is to be done have been determined by the Director of the

California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available from the California Department of Industrial Relations' Internet web site at http://www.dir.ca.gov/DLSR/PWD. Future effective general prevailing wage rates, which have been predetermined and are on file with the California Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

5.00 APPRENTICESHIP STANDARDS

In accordance with the provisions of Part 7, Chapter 1, Article 2, Section 1777.5 of the Labor Code of the State of California, the prime contractor shall be responsible for fully complying with the provisions of this Section, as well as any regulations adopted by the Director of Industrial Relations, for all apprenticeable crafts or trades, and shall also assure compliance by his or her sub-contractors with respect to such apprenticeable crafts or trades.

6.00 INSURANCE AND BONDS REQUIRED

The successful bidder to whom the Contract is awarded will be required to furnish appropriate insurance certificates as required by Section 4.00 of the General Conditions and Section 5.00 of the Special Conditions. He or she shall also furnish a Payment Bond in an amount equal to the total Contract amount and a Faithful Performance Bond in the amount equal to the total Contract amount, with a corporate surety approved by the City of Orland.

7.00 PAYMENT OF RETENTION AND SUBSTITUTION OF SECURITIES

Five percent (5%) will be withheld from each progress payment made to the Contractor for work performed and will be held until completion of the work, its acceptance and the expiration of the period provided by law for filing of liens by laborers or materialmen. In accordance with the provisions of Public Contract Code Section 22300, securities may be substituted for any monies which the City may withhold pursuant to the terms of the Contract to insure performance.

8.00 BIDDER'S INFORMATION

Contract Documents, including Plans and Specifications are available for inspection through Public Purchase, on the City of Orland's website: www.cityoforland.com ; at the Valley contractor's exchange, at 951 E. 8th Street, Chico California; and Shasta Builders Exchange at 2990 Innsbruck Drive, Redding, California.

9.00 BID AWARD

The Contract, if awarded, will be awarded within 30 days after the opening of Bids, to the lowest responsible bidder as determined by the City of Orland. The City reserves the right, in its sole discretion, to reject any and all bids for any reason whatsoever, or to waive minor irregularities in any bid, and to accept any bid.

/s/ Zach Barber Date: April 18, 2025

Zach Barber
City of Orland
Public Works Director

1.00 INTRODUCTION

Each Bid shall be in accordance with the Contract Documents prepared by Rolls, Anderson & Rolls, 115 Yellowstone Drive, Chico, California, 95973. Contract Documents are available as specified in the Notice to Bidders.

2.00 DEFINITION OF TERMS

2.01 CONTRACT DOCUMENTS

The Contract Documents consist of the Notice to Bidders, Instructions to Bidders, Bidder's Signature, Contract, General Conditions, Supplemental General Conditions, Special Conditions, Technical Specifications, Appendices, Plans, and any Addenda.

2.02 CONTRACT

The Contract is the written agreement covering the performance of the work and the furnishing of labor, materials, tools, and equipment in the construction of the work. It includes supplemental agreements amending or extending the work contemplated and which may be required to complete the work agreements covering alterations, amendments or extensions to the Contract and includes Contract Change Orders.

2.03 OWNER, CONTRACTOR AND ENGINEER

The Owner, the Contractor and the Engineer are those mentioned as such in the Special Conditions. They are treated throughout the Contract Documents as if each were of the singular number and the masculine gender.

2.04 BIDDER

Any individual, firm, partnership, or corporation submitting a Bid for the work contemplated, acting directly or through a duly authorized representative.

2.05 BID

The offer of a Bidder for the work when made out and submitted on the prescribed Bid form, properly signed and guaranteed.

2.06 EFFECTIVE DATE OF THE CONTRACT

The date on which the governing body or an authorized representative of the Owner awards the Contract.

2.07 DATE OF EXECUTION OF THE CONTRACT

The date on which the Contract is signed by the Owner's authorized representative.

2.08 DAYS

Unless otherwise specifically stated, the term "days" will be understood to mean calendar days.

2.09 WORK

The term "work" means all the work specified, indicated, shown or contemplated in the Contract Documents, including all alterations, amendments or extensions thereto made by Contract Change Order or other written orders of the Engineer.

2.10 SPECIFICATIONS

The term "specifications" refers to the terms, provisions and requirements contained herein and referred to as General Conditions, Special Conditions and Technical Specifications. Where Standard Specifications such as those of ASTM, AASHTO, etc., have been referred to, the applicable portions of such Standard Specifications shall become a part of these Contract Documents.

2.11 PLANS

The term "Plans" refers to the official Plans, profiles, cross sections, elevations, details and other working drawings and supplementary drawings, or reproductions thereof, signed by the 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.

3.00 PREPARATION AND SUBMISSION OF BIDS

Bids must be submitted on the forms bound in the Contract Documents and must be “wet signed” by the Bidder or his authorized representative. Any corrections to the entries made on the Bid forms must be initialed by the person signing the Bid.

Bidders must bid on all items appearing on the Bid Item List, unless specific directions allow for partial bids. Failure to bid all items may disqualify the Bid. If bids on all items are not required, Bidders shall insert the words "No Bid" where appropriate. Alternate bids will not be considered unless specifically called for in the Bid.

Telegraphic Bids or facsimile Bids will not be considered. Modifications to Bids already submitted will be allowed if received in writing, by facsimile or by telegram prior to the time fixed in the Notice to Bidders for opening of Bids. Modifications shall be submitted as such, and shall not reveal the total amount of either the original or revised Bid.

In conformance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the Contract Documents. Signing the Bid shall also constitute signature of the Noncollusion Affidavit.

To insure consideration, the Bid should be enclosed in a sealed envelope, clearly marked **BID** which also bears the name of the project and the date and time set for opening Bids. The sealed envelope containing the Bid should be filed at the place and before the time set for opening of Bids. Bids received after the time indicated will be returned unopened.

4.00 WITHDRAWAL OF BIDS

Any bidder may withdraw his Bid, either personally or by facsimile, telegraphic or written request at any time prior to the scheduled closing time for receipt of bids. No bidder may withdraw his bid for a period of 30 days after the date set for opening. Negligence on the part of the bidder in preparing his bid shall not constitute a right to withdraw his bid subsequent to the bid opening.

5.00 ADDENDA AND EXPLANATIONS TO BIDDERS

Any request for explanation or interpretation of the Contract Documents must be made in writing at least five (5) days before the time set for opening of Bids. Any questions or requests for explanation or interpretation of the Contract Documents must be made through Public Purchase at least five (5) days before the time set for opening of Bids. Any explanation or interpretation will be made in the form of Addenda to the Contract Documents and shall be furnished to all Bidders. Bidders shall submit signed copies of all Addenda with their Bids. Oral explanations and interpretations will not be binding.

6.00 DISCREPANCIES

In case of discrepancies between unit prices and totals, unit prices will prevail. In case of discrepancy between words and figures, words will prevail.

7.00 ACCEPTANCE OR REJECTION OF BIDS

The Owner reserves the right to reject any or all Bids and to waive any informality in any Bid.

The award of Contract, if made, will be to the lowest responsible Bidder whose Bid complies with the requirements of the Contract Documents. The award, if made, will be made within 30 days after the opening of Bids. If the lowest responsible Bidder fails to sign and return the Contract with acceptable bonds and certificates of insurance, the Owner may award the Contract to the next lowest responsible Bidder.

8.00 CONTRACT BONDS

The successful Bidder shall furnish a Performance Bond in the amount of 100 percent of the total Contract amount and a Payment Bond in the amount of 100 percent of the total Contract amount.

9.00 EXECUTION OF CONTRACT

The effective date of the Contract shall be the date on which the governing body or an authorized representative of the Owner awards the Contract.

The Bidder whose Bid is accepted, and to whom the Contract is awarded, shall sign and return the Contract with acceptable bonds and certificates of insurance within 14 calendar days after receiving notice that the Contract has been awarded to him. Failure to do so shall be just cause for annulment of the award and for forfeiture of the Bid Guarantee.

Within seven (7) days after receiving the signed Contract with acceptable bonds, and evidence of satisfactory insurance, from the successful Bidder, the Owner's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

Contractor Name: _____ Date: _____

Road M ½ Rehabilitation Project – Base Bid

Item No.	Description	Approx. Quantity	Unit Price	Total Price
1.	Mobilization/Demobilization	Lump Sum	Not Applicable	$
2.	Traffic Control	Lump Sum	Not Applicable	$
3.	Water Pollution Control	Lump Sum	Not Applicable	$
4.	Clearing, Grubbing, and Demolition	Lump Sum	Not Applicable	$
5.	Roadway Excavation	Lump Sum	Not Applicable	$
6.	Relocate Existing Mailbox	10 EA	$	$
7.	Install 18”x18” Catch Basin	4 EA	$	$
8.	Install City Std. 401 Drop Inlet	7 EA	$	$
9.	Install SD Leach Trench	282 LF	$	$
10.	Install 10-inch Dia. HDPE SD Pipe	38 LF	$	$
11.	Adjust Existing Manhole Frame and Cover to Finish Grade	5 EA	$	$
12.	Adjust Existing Valve Cover to Finish Grade	7 EA	$	$
13.	Install 12-inch Dia. HDPE SD Pipe	19 LF	$	$
14.	Water Main Connection	2 EA	$	$
15.	Install 8-inch Dia. Gate Valve	3 EA	$	$
16.	Install 8-inch Dia. Water Main	41 LF	$	$
17.	Install City Std. 406 Sewer Manhole	1 EA	$	$
18.	Install 8-inch Dia. Sewer Main	30 LF	$	$
19.	Install City Std. 503 Sewer Service	2 EA	$	$
20.	Irrigation Pipe Connection	2 EA	$	$
21.	Install 18-inch Dia. Gate Valve	1 EA	$	$
22.	Install 18-inch Dia. Irrigation Main	285 LF	$	$
23.	Class 2 Aggregate Base	2,400 TON	$	$
24.	Hot Mix Asphalt	900 TON	$	$

Contractor Name: _____ Date: _____

Road M ½ Rehabilitation Project – Base Bid

Item No.	Description	Approx. Quantity	Unit Price	Total Price
25.	2-inch Thick HMA Transition and Driveway Conforms	1,420 SF	$	$
26.	Install City Std. 202 Rolled Curb	930 LF	$	$
27.	Install City Std. 202 6" Barrier Curb	676 LF	$	$
28.	Install City Std. 204 Sidewalk	4,276 SF	$	$
29.	Install City Std. 206 Commercial Driveway	324 SF	$	$
30.	Install City Std. 205 Residential Driveway	813 SF	$	$
31.	Install City Std. 207 Curb Ramp	314 SF	$	$
32.	Install Caltrans A87B, Type E Asphalt Dike	31 LF	$	$
33.	Install Blue Reflective Marker	3 EA	$	$
34.	Install 4-inch Yellow Thermoplastic Stripe	2,188 LF	$	$
35.	Install 4-inch White Thermoplastic Stripe	2,268 LF	$	$
36.	Install Thermoplastic “STOP” Legend	1 EA	$	$
37.	Install Yellow Thermoplastic Basic Crosswalk	100 SF	$	$
38.	Install Yellow Thermoplastic Continental Crosswalk	190 SF	$	$
39.	Install Roadside Sign (One Post)	4 EA	$	$
40.	Install Wire Fence	242 LF	$	$
41.	Install 16-foot-wide Double Gate	1 EA	$	$
			TOTAL BID AMOUNT	$

LIST OF SUBCONTRACTORS

As of March 1, 2015 Contractors (and sub-contractors) wishing to bid on public works contracts must be registered with the State Division of Industrial Relations and certified to bid on Public Works contracts. Please register at https://www.dir.ca.gov/Public-Works/Contractor-Registration.html. The local agency will verify registration of all contractors and subcontractors on public works projects at bid and thereafter annually to assure that yearly registration is maintained throughout the life of the project.

In accordance with Title 49, Section 26.11 of the Code of Federal Regulations, and Section 4104 of the Public Contract Code of the State of California, as amended, the following information is required for each sub-contractor who will perform work amounting to more than one half of one percent (0.5%) of the Total Base Bid or $10,000 (whichever is greater).

Photocopy this form for additional firms.

Subcontractor Name & Location	Bid Item & Description	Percentage of Bid Item Subcontracted	Contractor License Number DIR Reg Number
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			

LIST OF SUBCONTRACTORS

As of March 1, 2015 Contractors (and sub-contractors) wishing to bid on public works contracts must be registered with the State Division of Industrial Relations and certified to bid on Public Works contracts. Please register at https://www.dir.ca.gov/Public-Works/Contractor-Registration.html. The local agency will verify registration of all contractors and subcontractors on public works projects at bid and thereafter annually to assure that yearly registration is maintained throughout the life of the project.

In accordance with Title 49, Section 26.11 of the Code of Federal Regulations, and Section 4104 of the Public Contract Code of the State of California, as amended, the following information is required for each sub-contractor who will perform work amounting to more than one half of one percent (0.5%) of the Total Base Bid or $10,000 (whichever is greater).

Photocopy this form for additional firms.

Subcontractor Name & Location	Bid Item & Description	Percentage of Bid Item Subcontracted	Contractor License Number / DIR Reg Number
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			
NAME City, State			

[LABOR CODE SECTION 1861]

STATE OF CALIFORNIA)
) ss
COUNTY OF _____)

I, the undersigned, do hereby certify:

I am aware of the provisions of Section 3700 of the Labor Code, which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.

Executed at _____

On _____.

I certify under penalty of perjury that the foregoing is true and correct.

_____
Contractor-Employer

NONCOLLUSION DECLARATION TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at Orland, California.

Note: The above Noncollusion Affidavit is part of the bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Noncollusion Affidavit. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

Accompanying this Bid is _____, (cash, cashier's check, certified check or Bidder's Bond) in the amount equal to at least 10 percent of the total amount of the Bid.

The names of all persons interested in the foregoing bid as principals are as follows:

IMPORTANT NOTICE
If Bidder is a corporation, the legal name of the corporation shall be set forth below, together with the signature of the officer or officers authorized to sign Contracts on behalf of the corporation. If Bidder is a copartnership, the true name of the firm shall be set forth below, together with the signature of the partners authorized to sign Contracts in behalf of the copartnership; and if Bidder is an individual, his signature shall be placed below. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the Owner prior to opening of Bids or submitted with the Bid; otherwise, the Bid will be disregarded as irregular and unauthorized.

_____

_____

_____

The undersigned further declares that he is a licensed Contractor in the State of California, and that the license which he holds is of the class required to perform the specified work.

License No. _____ Classification(s) _____

ADDENDA - This Bid is submitted with respect to the changes to the contract documents included in addenda number(s) _____

(*Fill in addenda numbers if addenda have been received and insert, in this Bid, any Engineer's Estimate sheets that were received as part of the addenda*.)

By my signature on this Bid I certify that I have read and understand the clauses and certifications which are a part of this bid and that my signature shall constitute an endorsement and execution of those clauses and certifications. I further agree that in case of default in signing and returning the required Contract with necessary bonds within 14 days after receiving notice of award, the proceeds of the cash, check or bond accompanying the Bid shall be forfeited to the Owner.

Date:	_____	Business P.O. Box:	_____
Name of Individual, Corporation, or Copartnership	_____	Business Street Address:	_____ (Please provide even if P.O. Box used)
Title	_____		
Signature(s)	_____	City, State, Zip Code:	_____
	_____		_____
Contractor License No.:	_____	Phone No.:	_____
DIR Registration No.:	_____	Fax No.:	_____


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED _____ _____ as Principal;

And _____ as Surety, are hereby

held and firmly bound unto _____

hereinafter called the Owner, in the sum of _____

_____ dollars ($ _____), which sum is equal to at least 10 percent of the total amount of the Bid, payment of which sum, well and truly to be made, we hereby, jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain Bid, attached hereto and hereby made a part thereof, to enter into a Contract in writing, for the construction of:

ROAD M ½ REHABILITATION PROJECT

THEREFORE,

(a) If said Bid shall be rejected, or in the alternate,

(b) If said Bid shall be accepted and the Principal shall sign and deliver a Contract, in the Form of Contract attached hereto and shall execute and deliver Performance and Payment Bonds in the forms attached hereto (all completed in accordance with said Bid), and shall in all other respects perform the agreement created by the acceptance of said Bid.

Then, this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all default of the Principal hereunder shall be the amount of this obligation as herein stated.

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

IN WITNESS THEREOF, the above-bounded parties have executed this instrument under their several seals this _____ day of _____, 20_____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative pursuant to authority of its governing body.

IN PRESENCE OF:

	Individual Principal
Address	Business Address
	Individual Principal
Address	Business Address
	Corporate Principal
	Business Address
	By Affix Corporate Seal

ATTEST:

	Corporate Surety
	Business Address
	Corporate Seal

The rate of premium on this bond is ___ per thousand.

Total amount of premium charged is $ _____ .

THIS AGREEMENT, made and entered into on the date below written, by and between, **CITY OF ORLAND, CALIFORNIA, A MUNICIPAL CORPORATION**, 815 Fourth Street, Orland, California, 95963, hereinafter called the **OWNER**, and _____, hereinafter called the **CONTRACTOR**.

WITNESSETH, that, for the considerations hereinafter mentioned, the Owner and Contractor agree as follows:

ARTICLE I. The Contractor agrees to furnish all labor, materials, tools, and equipment and to perform all the work required to construct and complete in a good and workmanlike manner, and in strict accordance with the Contract Documents entitled:

CONTRACT DOCUMENTS
FOR
ROAD M ½ REHABILITATION PROJECT

The Contract Documents have been prepared by *Rolls, Anderson & Rolls*, 115 Yellowstone Drive, Chico, California 95973, hereinafter called the Engineer, and are hereby incorporated in and made a part of this Contract.

ARTICLE II. The Owner agrees to pay the Contractor for the performance of the Contract, subject to additions and deductions provided therein, the following prices, and the Contractor agrees to receive and accept said following prices as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this agreement, and for all loss or damage arising out of the nature of the aforesaid work or from the action of the elements and from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the Owner, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work, and for well and faithfully completing the work and the whole thereof in the manner and according to the Contract Documents and the requirements of the Engineer under it, to wit:

As shown on the Bid attached hereto and incorporated herein.

ARTICLE III. The Owner shall make payments on the account of the Contractor as specified in Article 6.00 of the General Conditions.

ARTICLE IV. The Contractor shall commence work within 15 days and shall diligently prosecute the same to completion within 75 calendar days after receipt of a Notice to Proceed from the Owner.

ARTICLE V. The Contractor shall guarantee all of his work against defective material or faulty workmanship for a period of one year after the date of acceptance of the work by the Owner.

The Contractor shall repair or replace to the satisfaction of the Engineer any or all such work that may prove defective in workmanship or materials within that period, ordinary wear and tear and unusual abuse or neglect excepted, together with any other work which may be damaged or displaced in so doing.

In the event of failure to comply with the above mentioned conditions within a reasonable time after being notified in writing, the Owner is authorized to have the defects repaired and made good at the expense of the Contractor who will pay the cost and charges therefore immediately upon demand.

The signing of the Contract by the Contractor shall constitute execution of the above guarantees.

ARTICLE VI. The Contractor specifically obligates himself and hereby agrees to protect, hold free and harmless, defend and indemnify the Owner, the Engineer and his consultants, and each of their officers, employees and agents, from any and all liability, penalties, costs, losses, damages, expenses, causes of actions, claims or judgments, including attorney's fees, which arise out of or are in any way connected with

the Contractor's performance of his work under this Contract. To the extent legally permissible, this indemnity and hold harmless agreement by the Contractor shall apply to any acts or omissions, whether active or passive, on the part of the Contractor or his agents, employees, representatives, or subcontractors, or his subcontractor's agents, employees and representatives, resulting in liability irrespective of whether or not any acts or omissions of the parties to be indemnified hereunder may have also been a contributing factor to the liability.

As a further precaution toward this end, the Contractor shall procure and maintain, in full force and effect during the performance of the work contemplated hereunder, insurance in his favor and also in favor of the Owner, with an insurance carrier approved by the Owner, as specified in Article 4.00 of the General Conditions and Article 5.00 of the Special Conditions.

ARTICLE VII. Contractor acknowledges that State Labor Law requires the payment of prevailing wages and the maintenance of certain payroll records and other requirements as specified in Article 5.00 of the General Conditions and the Labor Code. Contractor agrees that these requirements shall be incorporated into all of his subcontracts.

ARTICLE VIII. Neither party of the Contract shall assign the Contract 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 him hereunder, nor utilize any subcontractors, other than those set forth in the List of Subcontractors, without the previous written consent of the Owner.

ARTICLE IX. Contractor is an independent contractor in the performance of this contract and is not an employee or agent of the Owner. The Owner has no direct obligation to any officers, agents, employees or subcontractors of the Contractor and such individuals shall not be entitled to claim direct payment of salaries nor seek employment benefits from the Owner.

ARTICLE X. Contractor warrants that he is duly and properly licensed to perform and provide the services contemplated by this Contract. Contractor shall possess all required licenses, including a local business license and shall require subcontractors and suppliers to be similarly licensed with regard to performance under this Contract.

ARTICLE XI. The Contractor shall maintain records relating to his performance of this Contract which shall be available for audit and/or inspection for a period of three (3) years after Contractor completes performance of the Contract or the Contract is otherwise terminated.

ARTICLE XII. Any Notices given pursuant to this Contract must be in writing and given either by personal delivery or by United States Mail, postage prepaid, addressed as follows:

OWNER:	CONTRACTOR:
City of Orland	_____
Attn.: Pete Carr	_____
City Manager	_____
815 Fourth Street	_____
Orland, CA 95963	

ARTICLE XIII. The Owner may terminate this Contract, without cause, upon giving of five (5) days written notice to Contractor. In the event of termination without cause, Contractor shall be compensated for services performed and materials furnished on an equitable basis through the date of termination.

ARTICLE XIV. California Law governs the interpretation and enforcement of this Contract.

ARTICLE XV. This Contract embodies the entire agreement between the parties. There are no oral agreements. No amendment to this Contract shall be valid unless in writing, executed by both parties to

this Contract. The language of this Contract governs against any conflicting language or terms contained in any attachment, exhibit or scope of work.

ARTICLE XVI. Neither the acceptance of work nor payment for that work shall constitute a waiver of any provisions of this Contract. A waiver of any breach shall not constitute a waiver of any other provision or subsequent breach.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands on the date below written.

OWNER

Date

City Manager
City of Orland

(City Seal)

Attest:

Jennifer Schmitke, City Clerk
City of Orland

CONTRACTOR

Date

name

title

company

Approved as to Form:

Jones Mayer, City Attorney
City of Orland


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

Whereas, The City Council of the City of Orland, State of California, and _____ (hereinafter designated as “principal”) have entered into an agreement whereby principal agrees to install and complete certain designated public improvements, which said agreement, dated _____ _____, 2025, and identified as the Road M ½ Rehabilitation Project, is hereby referred to and made a part hereof; and

Whereas, Said principal is required under the terms of said agreement to furnish a bond for the faithful performance of said agreement.

Now, therefore, we, the principal and _____, as surety, are held and firmly bound unto the City of Orland (hereinafter called "City"), in the penal sum of _____ dollars ($_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bounded principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the said agreement and any alteration thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless City of Orland, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefor, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

The surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the agreement or to the work to be performed thereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the agreement or to the work or to the specifications.

The surety’s obligations to the City arise immediately upon the default of the principal, without demand or notice.

In the event the principal defaults in the performance of its obligations, the surety may elect, either directly or through appropriate contractors to perform in the place of the principal. If the surety elects to proceed in

this fashion, it shall provide written notice of such election to the City within thirty (30) days after surety becomes aware of the principal's default. If the surety elects to complete the obligations of the principal (as opposed to paying money damages to the City occasioned by such breach) the surety shall cause the obligations of the principal to the performed as soon as is reasonably possible, but in no event later than nine (9) months following knowledge of the breach by the principal. In the event the surety elects to perform the principal's obligations, the City shall be entitled to compel the surety, by way of specific performance, to perform such obligations.

If the surety does not elect to perform the principals' obligations, the surety shall deposit with the City a sum equal to the cost of the uncompleted portion of the work which comprises the principal's obligation. The City's city engineer shall determine the estimated cost of the uncompleted portion of the work and the surety shall make such deposit with the City within five (5) days of receipt of the city engineer's estimate. The City shall not be required to expend any of its own funds to complete the work nor to incur "out-of-pocket" damages inasmuch as the City's damages are measured by the value of its unfulfilled right, namely the cost of completing the obligations of the principal by installing the bargained-for improvements. Upon deposit of the estimated cost of completion with the City, the City may proceed to bid the remainder of the work as a public project pursuant to the Public Contracts Code and the surety shall be obligated to continue to deposit such additional sums as may be necessary from time-to-time until the improvements are complete and accepted by the City or until the surety has exhausted the penal sum of the bond. Should the surety deposit more funds than are necessary to satisfy the principal's obligation, then the City shall refund any balance remaining upon final acceptance of the improvements. No interest shall be paid on any deposits made with the City.

Underwriting assumptions and cost estimates of the Surety shall not have any bearing, whatsoever, on the Surety's liability under this bond. By way of example, if, when making underwriting decisions regarding issuing this bond, a cost estimate was prepared regarding the principal's obligations to the City, the fact that an item was omitted from the cost estimate (which item was an obligation of the principal to the City), shall in no way defeat or diminish the Surety's obligation to the City with respect to this omitted item. By way of further example, if the underwriting decision to issue this bond included a cost estimate of items and a particular item was estimated at a cost significantly less than the amount actually required to perform such item, this fact shall in no way defeat or diminish the Surety's obligation to the City. Namely, the Surety shall be obligated, to the full amount of the penal sum of the bond, with respect to all matters which are the principal's obligation to the City, whether such items are actually included in any cost estimate (or if so included, are estimated at a cost far less than the actual cost to perform such items). Likewise, the adequacy and amount of any premium (and whether or not such premium was sufficient for the risk assumed by Surety) shall have no bearing on Surety's absolute and unconditional obligation to the City upon the principal's default of its obligations under this bond.

In witness whereof, this instrument has been duly executed by the principal and surety above named, on _____, 2025.

ATTEST:

_____
Principal

_____ By _____
(Principal Secretary)

_____ _____
(Witness as to Principal) (Address)

_____ _____
(Address)

ATTEST:

_____
Surety

_____ By _____
(Surety Secretary) Attorney-in-Fact

_____ _____
(Witness as to Surety) (Address)

_____ _____

NOTE: If Contractor is a Partnership, all partners should execute the bond.

Whereas, The City Council of the City of Orland, State of California, and _____ (hereinafter designated as "principal") _____

have entered into an agreement whereby principal agrees to install and complete certain designated public improvements, which said agreement, dated _____, 2025, and identified as the Road M ½ Rehabilitation Project, is hereby referred to and made a part hereof; and

Whereas, Under the terms of the agreement, the principal is required before entering upon the performance of the work, to file a good and sufficient payment bond with the City of Orland to secure the claims to which reference is made in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code.

Now, therefore, the principal and the undersigned as corporate surety, are held firmly bound unto the City of Orland and all contractors, subcontractors, laborers, material suppliers, and other persons employed in the performance of the agreement and referred to in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code in the sum of _____ dollars ($_____ _____), for materials furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to this work or labor, that the surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by county (or city) in successfully enforcing this obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

The surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the agreement or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

In witness whereof, this instrument has been duly executed by the principal and surety above named, on _____, 2025.

ATTEST:

Principal

(Principal Secretary)

By

(Witness as to Principal)

(Address)

(Address)

ATTEST:

Surety

(Surety Secretary)

By

Attorney-in-Fact

(Witness as to Surety)

(Address)

NOTE: If Contractor is a Partnership, all partners should execute the bond

1.00 SCOPE OF THE WORK

1.01 INTENT

The intent of the Plans and Specifications is to prescribe the details for the construction and completion of the work which the Contractor undertakes to perform in accordance with the terms of the Contract Documents. Where the Plans or Specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and do all the work involved in executing the Contract in a satisfactory and workmanlike manner.

1.02 CHANGES IN THE WORK

The Owner reserves the right to make changes in the work, including alterations, additions, deductions and omissions, and to require extra work, all as may be deemed necessary by the Engineer. All such changes will be done under Contract Change Order which shall set forth the work to be done or the changes to be made, the value of the work or the method by which it will be determined and the change, if any, in the time of completion of the work.

The value of any such extra work or change shall be determined in one or more of the following ways:

(a) By unit prices named in the Contract or subsequently agreed upon.
(b) By estimate and acceptance in an agreed upon lump sum.
(c) By Force Account as provided for in Section 6.04.

If none of the above methods is agreed on, or if the work is to be done by Force Account, the Contractor shall keep and present in the form prescribed in Section 6.05 a correct account of the net cost of the labor and materials actually incorporated in the work.

Upon receipt of a Contract Change Order, the Contractor shall proceed with the ordered work. If ordered in writing by the Engineer, the Contractor shall proceed with the work so ordered prior to actual receipt of a Contract Change Order. A Contract Change Order executed by the Contractor and approved by the Engineer is an executed Contract Change Order as that term is used in Section 1.03 through 1.05.

A Contract Change Order may be issued to the Contractor at any time. Should the Contractor disagree with any terms or conditions set forth in a Contract Change Order which he has not executed, he shall submit a written protest to the Engineer within 15 days after the receipt of such Contract Change Order. The protest shall state the points of disagreement, Specification references, and, if possible, the quantities and cost involved. If a written protest is not submitted, payment will be made as set forth in the Contract Change Order and such payment shall constitute full compensation for all work included therein or required thereby. Such unprotested Contract Change Orders will be considered as executed Contract Change Orders as that term is used in Section 1.03 through 1.05.

Where the protest concerning a Contract Change Order relates to compensation, the compensation payable for all work specified or required by said Contract Change Order to which such protest relates will be determined as provided in Section 1.03 through 1.05. The Contractor shall keep full and complete records of the cost of such work and shall permit the Engineer to have access thereto as may be necessary to assist in the determination of the compensation payable for such work.
Where the protest concerning a Contract Change Order relates to the adjustment of time of completion of the work, the time to be allowed therefore will be determined as provided in Section 2.03.

1.03 INCREASED OR DECREASED QUANTITIES

Increases or decreases in the quantity of a Contract item of work will be determined by comparing the total pay quantity of such item of work with the quantity shown in the Proposal for the same item of work.

If the total pay quantity of any item of work required under the Contract varies from the Proposal quantity therefore by 25 percent or less, payment will be made for the quantity of work performed at the Contract unit price, unless eligible for adjustment pursuant to Section 1.04.

If the total pay quantity of any item of work required under the Contract varies from the Proposal quantity therefore by more than 25 percent, in the absence of an executed Contract Change Order specifying the compensation to be paid, the compensation payable to the Contractor will be determined in accordance with Section 1.03A, 1.03B, or 1.03C herein, as the case may be.

1.03A INCREASE OF MORE THAN 25 PERCENT

Should the total pay quantity of any item of work under the Contract exceed the Proposal quantity by more than 25 percent, the work in excess of 125 percent of the Proposal quantity (if not covered by an executed Contract Change Order specifying the compensation) will be paid for by adjusting the Contract unit price, or at the option of the Engineer, payment for the work involved in such excess will be made on the basis of Force Account as provided in Section 6.04.

The Contractor's fixed costs which have been distributed over the Proposal quantity will be deemed to have been recovered by the Contractor from the payments made for 125 percent of the Proposal quantity, and will be excluded from the adjusted unit price.

1.03B DECREASES OF MORE THAN 25 PERCENT

Should the total pay quantity of any item of work under the Contract be less than 75 percent of the Proposal quantity, the quantity performed (unless covered by an executed Contract Change Order specifying the compensation) will be paid for by adjusting the Contract unit price, or at the option of the Engineer, payment for the quantity of the work of such item performed will be made on the basis of Force Account as provided in Section 6.04.

The Contractor's fixed costs which have been distributed over the Proposal quantity will be redistributed over the pay quantity in determining the adjusted unit price.

The total payment for the final quantity of such item of work will in no case exceed the payment which would be made for the performance of 75 percent of the Proposal quantity at the original Contract unit price.

1.03C DELETED ITEMS

Should any Contract item of work be deleted in its entirety (in the absence of an executed Contract Change Order covering the deletion), payment will be made to the Contractor for actual and direct costs, excluding overhead and profit, incurred prior to the date of notification in writing by the Engineer of the deletion, except as provided for costs of handling materials.

If acceptable material is ordered by the Contractor for the deleted item prior to the date of notification of the deletion by the Engineer, and if orders for such material cannot be canceled, it will be paid for at the actual cost to the Contractor, excluding overhead and profit. In such case, the material paid for shall become the property of the Owner and the cost of any further handling will be paid for as extra work as provided in Section 1.05. If the material is returnable to the vendor and if the Engineer so directs, the material shall be returned and the Contractor will be paid for charges made by the vendor for returning the material, excluding any markup for overhead and profit to the Contractor. The cost of handling returned material will be paid for as extra work as provided in Section 1.05.

1.04 CHANGES IN CHARACTER OF WORK

If an ordered change in the Plans or Specifications materially changes the character of the work of a Contract item from that on which the Contractor based his Proposal price, and increases or decreases the actual unit cost of the changed item, an adjustment in compensation therefore will be made. Any such adjustment will apply only to the portion of the work of said item actually changed in character. At the option of the Engineer, the work of said item or portion of said item which is changed in character will be paid for by Force Account as provided in Section 6.04.

Failure of the Engineer to recognize a change in character of the work at the time the Contract Change Order is issued shall in no way be construed as relieving the Contractor of his duty and responsibility of filing a written protest within the 15-day limit.

1.05 HAZARDOUS MATERIALS

Contracts for excavations deeper than four feet are subject to the provisions of Public Contracts Code Section 7104, which addresses the discovery of hazardous materials in connection with any excavation which may be required. That section provides:

1.05A That the Contractor shall promptly, and before the following conditions are disturbed, notify the Owner, in writing, of any:

1.05A(1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

1.05A(2) Subsurface or latent physical conditions at the site differing from those indicated.

1.05A(3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

1.05B That the Owner shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work shall issue a Contract Change Order under the procedures described in the Contract.

1.05C That, in the event that a dispute arises between the Owner and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

1.06 EXTRA WORK

New and unforeseen work will be classed as extra work when determined by the Engineer that such work is not covered by any of the various items for which there is a Contract price or by combinations of such items. In the event portions of such work are determined by the Engineer to be covered by some of the various items for which there is a Contract price or combination of such items, the remaining portion of such work will be classed as extra work. Extra work also includes work specifically designated as extra work in the Plans or Specifications.

The Contractor shall do such extra work and furnish material and equipment therefore upon receipt of a Contract Change Order or other written order from the Engineer, and without a Contract Change Order or other written order of the Engineer, he shall not be entitled to payment for such extra work. Where such extra work is ordered by a written order other than a Contract Change Order, the Engineer will, as soon as practicable, issue a Contract Change Order. The provisions in Section 1.02 shall be fully applicable to the subsequently issued Contract Change Order. Payment for extra work required to be performed pursuant to the provisions of this section, in the absence of an executed Contract Change Order, will be made by Force Account as provided in Section 6.04, or as agreed to by the Contractor and the Engineer.

1.07 GUARANTEE

The Contractor shall guarantee all of his work against defective material or faulty workmanship for a period of one year after the date of acceptance of the work by the Owner.

The Contractor shall repair or replace to the satisfaction of the Engineer any or all such work that may prove defective in workmanship or materials within that period, ordinary wear and tear and unusual abuse or neglect excepted, together with any other work which may be damaged or displaced in so doing.

In the event of failure to comply with the above-mentioned conditions within a reasonable time after being notified in writing, the Owner is authorized to have the defects repaired and made good at the expense of the Contractor who will pay the cost and charges therefore immediately upon demand.

The signing of the Contract by the Contractor shall constitute execution of the above guarantees. The Contract Performance Bond shall remain in full effect during the guarantee period and will not be released until the expiration of such period.

2.00 PROGRESS AND COMPLETION OF THE WORK

2.01 PROGRESS OF THE WORK AND TIME OF COMPLETION

The Contractor shall begin work within 15 days after the issuance of the Notice to Proceed by the Owner. He shall diligently prosecute the same to completion within the number of days set forth in the Special Conditions.

2.02 LIQUIDATED DAMAGES

It is agreed by the parties of the Contract that in case all work called for under the Contract is not completed within the number of days specified in the Special Conditions, damage will be sustained by the Owner; and it is further agreed that it is, and will be, impractical and extremely difficult to ascertain and determine the actual damage which the Owner will sustain by the delay. It is therefore agreed that the Contractor will pay to the Owner the sum specified in the Special Conditions for each and every day's delay in finishing the work. The Contractor agrees to pay said liquidated damages and further agrees that the Owner may deduct the amount thereof from the monies due or to become due the Contractor under this Contract.

It is further agreed that if the work called for under the Contract is not completed within the number of days specified in the Special Conditions, the Owner shall have the right to increase the number of days or not, as he decides will best serve his interest. If the Owner decides to increase the number of days, he shall further have the right to charge the Contractor, his heirs, assigns, or sureties, and to deduct from the final payment for the work, all or any part, as he may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the Contract and which accrue during the period of such extension, except that the cost of final surveys and preparation of the final estimate shall not be included in such charges.

2.03 DELAYS AND EXTENSIONS OF TIME

The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering, inspection, superintendence and other overhead expenses during any delay beyond the time named for the completion of the work caused by an act of God or by the public enemy, acts of the Owner, fire, floods, epidemics, quarantine restrictions, strikes, unusual shortage of materials and freight embargoes. In the event of such delay, the Contractor shall notify the Engineer in writing of the causes of delay within 10 days from the beginning of such delay, and his findings thereon shall be final.

2.04 PROGRESS SCHEDULE AND ORDER OF COMPLETION

Within 10 days after execution of the Contract, the Contractor shall submit to the Engineer a progress schedule showing a breakdown of the work into at least all of its major items, and showing the proposed dates of starting and completing these items of work. This schedule shall also conform to the requirements for completion of portions of the work as may be specified in the Special Conditions. The Contractor shall review and, if necessary, revise the progress schedule at least once a month and in any event shall submit a current schedule to the Engineer at his request at any time during the Contract period.

3.00 CONTROL OF THE WORK

3.01 ASSIGNMENT
Neither party of the Contract shall assign the Contract 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 him hereunder, without the previous written consent of the Owner.

3.01A ANTITRUST CLAIMS ASSIGNMENT
To the extent this Contract constitutes a contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 [commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment is made and becomes effective at the time the Owner tenders final payment to the Contractor, without further acknowledgment by the parties.

3.02 RIGHTS OF VARIOUS INTERESTS
Wherever work being done by the Owner's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer, to secure the completion of the various portions of the work in general harmony.

3.03 SEPARATE CONTRACTS
The Owner 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 the execution of their work, and shall properly connect and coordinate his work with theirs.

If any part of the Contractor's work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable. His 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 work except as to defects which may later develop in the other contractor's work. In addition, the Contractor shall measure work already in place and shall immediately report to the Engineer any discrepancy between the executed work and that shown on the Plans.

3.04 SUBCONTRACTS
No subcontractor will be recognized as such, and all persons engaged in the work will be considered as employees of the Contractor and he will be held responsible for their work, which shall be subject to the provisions of the Contract Documents. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the Owner.

3.05 CONTRACT DOCUMENTS
The various parts of the Contract Documents, as defined in the Instructions to Bidders, are complementary and a requirement stated in one is as binding as though stated in all. They are intended to be cooperative and to describe and provide for a complete work.

In the event of conflict between the Instructions to Bidders and the Special Conditions, the Special Conditions shall govern. In the event of conflict between the General Conditions and the Special Conditions, the Special Conditions shall govern. In the event of conflict between the Plans and the Technical Specifications, the Technical Specifications shall govern, except that where items are shown on the Plans and are not specifically included in the Technical Specifications, the Plans shall govern.

3.06 ENGINEER'S AUTHORITY
The Engineer is the representative of the Owner and has full authority to interpret the Contract Documents, to enforce the requirements thereof and to decide questions which arise during the course of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the

proper execution of the Contract. He shall also have authority to reject all work and materials which do not conform to the Contract Documents.

If at any time before the commencement or during the progress of the work, tools, plant or equipment appear to the Engineer to be insufficient, inefficient, or inappropriate to secure the quality of work required or the proper rate of progress, the Engineer may order the Contractor to increase their efficiency, or to improve their character, or to augment their number, or to substitute new tools, plant or equipment as the case may be, and the Contractor must conform to such order; but the failure of the Engineer to demand such increase of efficiency, number, or improvement shall not relieve the Contractor of his obligation to secure the quality of work and the rate of progress necessary to complete the work in accordance with the Contract Documents.

In giving instructions, the Engineer shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purpose of the work.

3.07 INSPECTION OF WORK

The Engineer and his representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. If the Specifications or the Engineer's instructions require any work to be specially tested or approved, the Contractor shall give the Engineer a minimum of 48 hours' notice of its readiness for inspection. Inspection by the Engineer will be made promptly. If any work should be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.

The inspection of the work or materials shall not relieve the Contractor of any of his obligations to fulfill his Contract as prescribed. Work and materials not meeting such requirements shall be made good and unsuitable work or materials may be rejected, notwithstanding that such work or materials may have been previously inspected by the Engineer or that payment therefore has been included in a progress estimate.

Re-examination of questioned work may be ordered by the Engineer and if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the Owner will pay the cost of re-examination and replacement. If such work is not found to be in accordance with the Contract Documents, the Contractor shall pay such cost.

Projects financed in whole or in part with State or federal funds shall be subject to inspection at all times by the State or federal agency involved. Where any part of the work is being done under an encroachment permit or building permit, or is subject to State, County or municipal codes, laws or ordinances, representatives of the governing agency shall have full access to the work and shall be allowed to make any inspection or tests in accordance with such permits, codes, laws or ordinances. If advance notice of the readiness of the work for inspection by the governing agency is required, the Contractor shall furnish such notice to the appropriate agency.

3.08 SUPERINTENDENCE

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. Said authorized representative shall be present at the site of the work at all times while work is actually in progress on the Contract. During periods when work is suspended, arrangements acceptable to the Engineer shall be made for any emergency work which may be required.

Whenever the Contractor or his authorized representative is not present on any particular part of the work where it may be desired to give direction, orders will be given by the Engineer, which shall be received and obeyed by the superintendent or foreman who may have charge of the particular work in reference to which the orders are given.

Any order given by the Engineer, not otherwise required by the Contract Documents to be in writing will, on request of the Contractor, be given or confirmed by the Engineer in writing.

3.09 CHARACTER OF WORKMEN

If any subcontractor or person employed by the Contractor shall fail or refuse to carry out the directions of the Engineer or shall appear to the Engineer to be incompetent or to act in a disorderly or improper manner, he shall be removed immediately on the requisition of the Engineer, and such person shall not again be employed on the work.

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

Neither party shall employ or hire any employee of the other party without his consent.

3.10 PLANS, SPECIFICATIONS AND INSTRUCTIONS

Unless otherwise provided in the Special Conditions, the Engineer will furnish to the Contractor, free of charge, all copies of Plans and Specifications reasonably necessary for the execution of the work. He will also furnish with reasonable promptness additional instructions, either as supplemental drawings or otherwise, as may be necessary for the proper execution of the work. The Contractor shall keep one copy of all Plans and Specifications, including any Addenda and Contract Change Orders, on the work in good order available to the Engineer and his representatives.

Should the Contractor be in doubt as to the meaning of any provision in the Plans and Specifications, or should he find any errors or omissions therein, or should he find any errors or omissions in the layout or staking, he shall immediately notify the Engineer. The Engineer will promptly investigate and will furnish the Contractor with any additional instructions as may be required.

Unless otherwise noted in the Special Conditions, upon completion of all Contract work, the Contractor shall provide the Engineer with one complete set of Plans and Specifications with all "As Built" changes or modifications marked and annotated.

3.11 CONSTRUCTION STAKING

Unless otherwise noted in the Special Conditions, the Engineer will set such construction stakes and marks as he determines are necessary to establish the lines and grades required for the completion of the work specified in the Contract Documents. Whenever the Contractor requires construction stakes, he shall notify the Engineer of his requirements at least five days in advance of starting operations that require such stakes.

Property corners, bench marks, reference points and stakes shall be carefully preserved by the Contractor. In case such stakes or marks are destroyed or damaged, they will be replaced at the Engineer's earliest convenience. The Contractor shall be charged for the cost of replacing or restoring stakes and marks which are destroyed or damaged by his operations. This charge will be deducted from any monies due or to become due to the Contractor under the Contract.

3.12 PERMITS AND REGULATIONS

Permits and licenses of a temporary nature necessary for the prosecution of the work shall be obtained by the Contractor at his expense. Unless otherwise specified in the Special Conditions, permits and licenses for permanent structures or permanent changes in existing facilities will be secured and paid for by the Owner. Copies of any permits and licenses which are obtained by the Owner will be on file at his office and will be available for inspection by the Contractor. The Contractor shall acquaint himself with, and abide by, any requirements of these documents. The Contractor shall obtain any supplemental agreements or bonds required by any encroachment permit, and he shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work. If the Contractor observes that the Plans and Specifications are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in the Contract Documents for changes in the work. If the Contractor performs any work, knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Engineer, he shall bear all costs arising therefrom.

3.13 LANDS FOR WORK

The Owner shall provide the lands, easements and rights-of-way upon which the work under this Contract is to be done. Unless he specifically makes other arrangements, the Contractor shall confine his operations to the limits of the Owner's land and to the limits of the easements and rights-of-way. The Contractor shall provide land required for the erection of temporary construction facilities and storage of his material. The Contractor is advised that if additional working space is required outside the limits of the rights-of-way provided, such additional area must be obtained directly from the property owners by the Contractor for use during the construction period. The Owner shall be furnished with copies of **written** agreements or otherwise notified **in writing** if additional working space is acquired.

3.14 SUSPENSION OF WORK

The Owner may at any time suspend the work, or any part thereof, by giving one day's notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the Owner to the Contractor to do so. The Owner will reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of such suspension, except that no reimbursement will be made if the suspension is due to non-conformance with the Contract Documents on the part of the Contractor. If the work or any part thereof shall be stopped by notice in writing, and if the Owner does not give notice in writing to the Contractor to resume work within 30 days of the date fixed in written notice to suspend, the Contractor may abandon the suspended portion of the work and will be entitled to payment for all work acceptably done on the abandoned portions.

3.15 THE OWNER'S RIGHT TO DO WORK

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of the Contract, the Owner, after 3 days' written notice to the Contractor, may, without prejudice to any other course of action he may have, perform or have performed by other forces, all or any portion of the work and may deduct the cost thereof from the monies due or to become due the Contractor under this Contract.

3.16 THE OWNER'S RIGHT TO TERMINATE CONTRACT

If the Contractor should be adjudged bankrupt, or should make a general assignment for the benefit of his creditors, or if a receiver should be appointed because of his insolvency, or if he should persistently or repeatedly refuse or should fail to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for materials or labor, or persistently disregard laws, ordinances or the instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certification of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 7 day's written notice, 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 he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price exceeds the expenses of finishing the work, including compensation for all attributable administrative costs and for damages incurred through the Contractor's default, such excess shall be paid to the Contractor. If such expenses exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expenses incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer.

3.17 REMOVAL OF EQUIPMENT

In the case of annulment of this Contract before completion for any cause, the Contractor, if notified to do so by the Owner, shall promptly remove any part or all of his equipment and supplies from the Owner's property. If not promptly done, the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor.

3.18 CORRECTION OF WORK

The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to conform to the Contract Documents whether incorporated in the work or not. The Contractor shall, at his own expense, promptly replace such materials and perform all work made necessary by such

replacement, including making good all work of others destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, the Owner may remove and store the material at the expense of the Contractor. If the Contractor does not pay for the expense of the removal within 10 days' time thereafter, the Owner may, upon 10 days' written notice, sell such materials at auction or at private sales and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

3.19 DEDUCTIONS FOR UNCORRECTED WORK

If the Engineer deems it inexpedient to correct work injured or done not in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore.

3.20 USE OF COMPLETED PORTIONS

The Owner 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 may not have expired, but 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 or delays the work, the Contractor shall be entitled to extra compensation, or extension of time or both, as the Engineer may determine.

3.21 CONTRACTOR CLAIMS

Appropriate claims shall be submitted and reviewed in accordance with Section 20104 of the Public Contracts Code. For any claim subject to this Section, the following requirements apply:

3.21A The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided in the Contract for the filing of claims.

3.21B(1) For claims of less than fifty thousand dollars ($50,000), the Owner shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner may have against the Contractor.

3.21B(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the Owner and the Contractor.

3.21B(3) The Owner's written response to the claim, as further documented, shall be submitted to the Contractor within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

3.21C(1) For claims of over fifty thousand dollars ($50,000) and less than or equal to three hundred seventy-five thousand dollars ($375,000), the Owner shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner may have against the Contractor.

3.21C(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the Owner and the Contractor.

3.21C(3) The Owner's written response to the claim, as further documented, shall be submitted to the Contractor within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

3.21D If the Contractor disputes the Owner's written response, or the Owner fails to respond within the time prescribed, the Contractor may so notify the Owner, in writing, either within 15 days of receipt of the Owner's response or within 15 days of the Owner's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the Owner shall schedule a meet and confer conference within 30 days for settlement of the dispute.

3.21E Following the meet and confer conference, if the claim or any portion remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

3.21F This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

It is hereby mutually agreed that the Contractor shall not be entitled to payment of additional compensation for any cause, including any act or failure to act by the Engineer, or of any event, thing or occurrence, unless he shall have given the Engineer due written notice of potential claim, provided however, that compliance with this Section shall not be a prerequisite as to matters within the scope of the protest provisions in Section 1.02, nor to any claim which is based on differences in measurements or errors of computation of Contract quantities.

The written notice of potential claim shall set forth the reasons the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. The required notice must have been given to the Engineer prior to the time the Contractor performed the work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Engineer, or in all other cases within 15 days after the event, thing or occurrence giving rise to the potential claim.

In the event of an emergency endangering life or property, the Contractor shall act as stated in Section 4.04, and after execution of the emergency work, shall present an accounting of labor, materials, and equipment in connection therewith. The procedure for any payment that may be due for emergency work will be as specified in Section 1.02.

The Engineer shall, within a reasonable time after their presentation to him, state his decisions in writing on all claims of the Owner or the Contractor. All such decisions of the Engineer shall be final.

It is the intention of this Section that differences between the parties arising under and by virtue of the Contract be brought to the attention of the Engineer at the earliest possible time so that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that he shall have no right to additional compensation for any claim that may be based on any act, failure to act, event, thing or occurrence for which no written notice of potential claim was filed.

3.22 CLEANING UP

The work area shall be kept in a neat and orderly condition during construction. The Contractor shall remove and dispose of all trash, debris and waste material resulting from his operations. The Contractor shall, at his own expense, promptly remove from the Owner's property, and from all other lands affected by his work, all temporary structures, rubbish and waste materials resulting from his operations. He shall leave such lands in a neat and orderly condition which is at least as good as the condition prior to his operations.

4.00 INSURANCE AND LIABILITY

4.01 CONTRACTOR'S LIABILITY INSURANCE

The Contractor shall maintain insurance to protect him from claims under workman's compensation acts and from any other claims for damages for personal injury, including death, which may arise from operations under this Contract, whether such operations are controlled by him, a subcontractor or by anyone directly or indirectly employed by either of them. The Owner shall be named as coinsured in all such insurance policies and the coverage shall include concurrent negligence of the Owner or his agents, employees, or representatives whether such concurrent negligence be active or passive, including specifically any liability based upon a violation of any non-delegable duties. Certificates of insurance and the certificate required by Labor Code Section 1861 shall be filed with the Engineer prior to commencing the work, and shall be subject to his approval for adequacy of protection.

The Contractor specifically obligates himself and hereby agrees to protect, hold free and harmless, defend and indemnify the Owner, the Engineer and his consultants, and each of their officers, employees and agents, from any and all liability, penalties, costs, losses, damages, expenses, causes of actions, claims or judgments, including attorney's fees, which arise out of or are in any way connected with the Contractor's performance of his work under this Contract. To the extent legally permissible, this indemnity and hold harmless agreement by the Contractor shall apply to any acts or omissions, whether active or passive, on the part of the Contractor or his agents, employees, representatives, or subcontractors, or his subcontractor's agents, employees and representatives, resulting in liability irrespective of whether or not any acts or omissions of the parties to be indemnified hereunder may have also been a contributing factor to the liability.

As a further precaution toward this end, the Contractor shall procure and maintain, in full force and effect during the performance of the work contemplated thereunder, insurance in his favor and also in favor of the Owner, with an insurance carrier approved by the Owner, as follows:

Liability for Personal Injury or Property Damage in the amount of $1,000,000.00 for any occurrence.

The Contractor shall, before the commencement of the work, take out and maintain in full force and effect, compensation insurance with an insurance carrier or carriers under an insurance policy or policies, satisfactory to the Owner covering his full liability under the "Worker's Compensation Insurance and Safety Act" of the State of California to any employee who may be injured during the course of said work and to the dependents of any employee who may be killed during the course of said work.

Such policy or policies shall expressly provide therein that they shall not be canceled by the insurer until 10 days after written notice of the intended cancellation thereof shall have first been given to the Owner by the insurer.

The Contractor shall file with the Owner, immediately after the signing of the Contract, certificates of all insurance. These certificates shall be fully executed and shall state that the policies cannot be canceled until 10 days after written notification of such intent of cancellation has been given to the Owner. All policies shall be with Insurance Companies acceptable to the Owner.

In case of the breach of any provision of this Section, the Owner may take out and maintain at the expense of the Contractor such insurance as the Owner 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 Contract.

4.02 FIRE INSURANCE

The Contractor shall take out and maintain fire insurance on the entire structure on which work under this Contract is to be done. This insurance will be in the amount of 100 percent of the insurable value of the structure, including items of labor and materials during construction, and 100 percent of the insurable value of the completed structure. The coverage shall be maintained by the Contractor until final acceptance of the work by the Owner.

The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for whom it may concern, except in cases which require payment of all or a portion of said insurance to be made to a mortgagee as his interest may appear.

The Contractor, on his written request, shall be named jointly with the Owner in all policies, all of which shall be open to his inspection. If the Owner fails to show them on request, or if he fails to effect or maintain as above, the Contractor may insure his own interests and charge the cost thereof to the Owner. If the Contractor is damaged by failure of the Owner to maintain such insurance, he may recover as stipulated in the Contract for recovery of damages.

The Trustee shall deposit any money received from insurance in an account separate from all his other funds and he shall distribute it in accordance with such agreement as the parties in interest may reach. If after loss no special agreement is made, replacement of injured work shall be ordered and executed as provided for under changes in the work.

The Trustee shall have power to adjust and settle any loss with the insurers unless the Contractor shall object in writing within 3 days of the occurrence of loss, and thereupon arbitrators shall be chosen. The Trustee shall in that case make settlement with the insurers in accordance with the directions of the arbitrators, who shall also, if distribution by arbitration is required, direct such distribution.

EXCLUSION: This insurance does not cover any tools owned by mechanics, any tools, equipment, scaffoldings, stagings, towers, or supplies, and any temporary structures erected for the Contractor's operations.

4.03 PRESERVATION OF PROPERTY

The Contractor shall take whatever precautions necessary to prevent damage to all existing improvements, including aboveground and underground utilities, trees and shrubbery that are not specifically shown to be removed, fences, signs, mail boxes, survey markers and monuments, building and structures, the Owner's property, adjacent property and any other improvements or facilities within or adjacent to the work. If such improvements or property are injured or damaged by the Contractor's operations, they shall be replaced or restored, at the Contractor's expense, to a condition at least as good as the condition prior to the start of the Contractor's operations.

The Contractor shall examine all bridges, culverts, and other structures over which he will move his materials and equipment, and before using them, he shall properly strengthen such structures, where necessary. The Contractor will be held responsible for any and all injury or damage to such structures caused by his operations.

The fact that any pipe or other underground facility is not shown, or not accurately shown on the Plans, shall not relieve the Contractor of his responsibility under this Section. It shall be the Contractor's responsibility to ascertain the existence of any underground improvements or facilities which may be subject to damage by his operations.

4.04 PROTECTION OF WORK

The Contractor shall continuously maintain adequate protection of all his work from damage. He shall make good any such damage, injury or loss, except as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents. He shall provide and maintain all passage-ways, guard fences, lights and other facilities for protection required by public authority or local conditions.

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 Engineer, is hereby permitted to act at 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 for emergency work shall be determined as specified under Section 1.02.

4.05 PUBLIC SAFETY

The Contractor shall be responsible for furnishing and maintaining all flagmen, warning signs, barricades, emergency lighting, shoring, etc. necessary to protect the public and workmen employed on the project. Safety provisions shall conform to all applicable federal, State, County and local laws, ordinances and codes and, in particular, to the rules and regulations established by OSHA and the California Division of Industrial Safety.

4.06 ACCIDENTS

The Contractor shall provide at the site such equipment and medical facilities as are necessary to give first-aid service to anyone who may be injured.

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

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

5.00 LABOR AND MATERIALS

5.01 HOURS OF LABOR

The Contractor shall forfeit, as penalty to the Owner, $25.00 for each workman employed in the execution of the Contract by him, or by any subcontractor under him, for each calendar day any workman is required or permitted to labor more than 8 hours in violation of the provisions of the Labor Code and in particular, Section 1810 to Section 1817 thereof, inclusive.

5.02 EMPLOYMENT OF APPRENTICES

The Contractor's attention is directed to Section 1777.5 of the Labor Code; provisions of said section pertaining to employment of indentured apprentices are hereby incorporated by reference into these Specifications. As applicable, the Contractor or any subcontractor employed by him in the performance of the Contract work shall take such actions as necessary to comply with the provisions of said Section 1777.5.

5.03 LABOR DISCRIMINATION

Attention is directed to Section 1735 of the Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, color or religion of such persons and every contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter."

5.04 PREVAILING WAGE

The Contractor shall forfeit as penalty to the Owner, $50.00 for each calendar day or portion thereof, for each workman paid less than stipulated prevailing rates for any work done under the Contract by him or by any subcontractor under him, in violation of the provisions of the Labor Code and in particular, Section 1770 to Section 1780 thereof, inclusive.

The Owner will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the Prevailing Wages set forth in the Contract Documents. The possibility of wage increases is one of the elements to be considered by the Contractor in determining his Bid, and will not be considered as the basis of a claim against the Owner on the Contract.

The Contractor and each Subcontractor shall keep an accurate record showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week and the actual per diem wages paid to each journeyman, apprentice, worker or other employee by him or her in

connection with the work. These payroll records shall be certified and made available for inspection at all reasonable hours at the principal office of the Contractor and furnished by the Contractor to the Owner and others upon request in accordance with the provisions of Labor Code Section 1776. The Contractor's attention is called to the penalties provided for in Section 1776 for the failure to comply with its provisions.

5.05 MATERIALS

Unless otherwise specifically stated in the Special Conditions, the Contractor shall furnish all materials necessary for the execution and completion of the work. Unless otherwise specified, all materials shall be new and shall be manufactured, handled and installed in a workmanlike manner to ensure completion of the work in accordance with the Contract Documents. The Contractor shall furnish satisfactory evidence as to the kind and quality of materials.

Where materials are to be furnished by the Owner, the type, size, quantity and location at which they are available will be stated in the Special Conditions.

In certain instances, the Owner may have available power, water or other utilities or materials which the Contractor may wish to use. If the Owner intends to furnish these free of charge, it will be so stated in the Special Conditions. In the absence of such specific statement, the Contractor shall furnish all utilities and materials at his own expense.

5.06 RECORDS OF MATERIALS PURCHASED

If required by the Engineer, the Contractor shall furnish duplicate invoices to the Engineer for all materials furnished to the project.

5.07 PATENTS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the Owner and the Engineer from all suits at law, or actions of every nature for, or because of the use of any patented materials, equipment, devices, or processes.

5.08 OWNERSHIP OF REMOVED MATERIALS

Unless otherwise specifically stated in the Special Conditions or Technical Specifications, any existing equipment or material removed by the Contractor during the course of the work shall remain the property of the Contractor.

5.09 SUBSTITUTION OF MATERIALS

Where materials and equipment are specified in the Technical Specifications or are shown on the Plans as similar and equal to a certain proprietary brand, the intent is to establish the minimum quality and performance acceptable. If the Contractor proposes to substitute materials or equipment of another proprietary brand but of equal quality, he may submit a request to the Engineer for approval of the proposed substitution. No substitution may be made without prior approval and the Engineer shall be the final judge of equality.

If any tests are necessary for evaluation of the proposed substitution by the Engineer, the Contractor shall furnish all necessary test materials and shall pay the cost of the tests.

5.10 SHOP DRAWINGS AND MATERIAL DATA

Unless otherwise specifically stated in the Special Conditions or Technical Specifications, the Contractor shall submit a minimum of four separately bound copies of shop drawings and material data to the City Engineer for approval. A complete submittal shall include all drawings and data sheets for all bid item materials and all necessary appurtenances to provide a complete installation of each material. These drawings shall show any necessary details in fabrication or erection, which are not shown on the Plans furnished by the Owner and shall verify details and dimensions of equipment. **Facsimile submittals will not be accepted.** Material and/or equipment shall not be fabricated, assembled, or shipped until the shop drawings or material data have been approved by the City Engineer. The Contractor shall verify these dimensions before starting any work dependent on or affected by them.

The City Engineer will retain three copies of the shop drawings and material data, and will return one copy to the Contractor. If the Contractor desires additional copies, more than four copies must be submitted.

5.11 TESTS

Unless otherwise specified in the Special Conditions, the Owner will pay for the required testing of materials. The Contractor will furnish all samples at no cost to the Owner. In the event samples are submitted which fail to pass the specified tests, the Contractor will pay for all subsequent tests. The cost of such re-testing will be deducted from payments due the Contractor.

6.00 MEASUREMENT AND PAYMENT

6.01 MEASUREMENT OF QUANTITIES

Where the Contract provides for payment on a lump sum price basis, no measurement of quantities will be made. Where the Contract provides for payment on a unit price basis, the quantities of work performed will be computed by the Engineer on the basis of measurements taken by the Engineer, and these measurements shall be final and binding.

All work computed under the Contract shall be measured by the Engineer according to United States Measurements and Weights. Methods of measurement are specified in the Special Conditions and in the Technical Specifications.

6.02 SCOPE OF PAYMENT

The Contractor shall accept the compensation, as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the work, from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the acceptance by the Owner and for all risks of every description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work; and for completing the work according to the Contract Documents. Neither the payment of any estimate nor any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

No compensation will be made for loss of anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

6.03 CHANGES IN THE WORK

The value of changes in the work, including extra work, shall be determined in accordance with Section 1.02 through 1.05.

6.04 FORCE ACCOUNT PAYMENT

Where work is to be paid for by Force Account, the Contractor shall be paid on the basis of the actual cost of labor, material, and equipment, furnished by him as shown on paid vouchers, plus 15 percent. However, the Owner reserves the right to furnish such materials and equipment as he deems expedient, and the Contractor shall have no claim for overhead and profit on the cost or such material and equipment.

The cost of labor as referred to above shall include the cost of the base wages paid to workmen, plus any additional payment paid to, or on behalf of, workmen as required by State or federal laws plus any benefits, subsistence and travel allowance as may be required by collective bargaining agreements.

The cost of material as referred to above shall be the net cost to the purchaser, whether Contractor, subcontractor or other forces, from the supplier thereof.

The cost of equipment as referred to above, shall conform to current equipment rental rates as determined by the California State Transportation Agency's Department of Transportation, Division of Construction. This applies to both rental equipment and equipment owned by the Contractor.

6.05 RECORDS OF FORCE ACCOUNT WORK

The Contractor shall maintain his records in a manner to provide a clear distinction between the direct costs of extra work paid for on a Force Account basis and the costs of other operations. The Contractor shall furnish the Engineer report sheets in duplicate of each day's extra work no later than the working day following the performance of the work. The daily report sheets shall itemize 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 workmen, 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 vendor's invoices. Such invoices shall be submitted with the daily report sheets, or if not available, they shall be submitted with subsequent daily report sheets. Should vendor's invoices not be submitted within 15 days after acceptance of the work, the Owner reserves the right to establish the cost of such material at the lowest current wholesale prices at which the materials are available in the quantities concerned delivered to the location of the work.

Said daily report sheets shall be signed by the Contractor or his authorized agent.

The Engineer will compare his records with the daily report sheets furnished by the Contractor, make any necessary adjustments, and compile the costs of work paid for on a Force Account basis on daily extra work report forms. When these daily extra work reports are agreed upon and signed by both parties, they shall become the basis of payment for the work performed.

6.06 PAYMENTS WITHHELD

The Owner may withhold or, because of subsequently discovered evidence, nullify the whole or a part of any payment to such extent as may be necessary to protect himself from loss due to:

a. Defective work not remedied.
b. Claims filed or reasonable evidence indicating probable filing of claims.
c. Failure of the Contractor to make payments properly to subcontractors or for material or labor.
d. A reasonable doubt that the Contract can be completed for the balance then unpaid.
e. Damage to another Contractor.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

The Contractor may, in accordance with the provisions of Public Contracts Code Section 22300, substitute securities for any monies which the Owner may withhold to insure performance under this Contract.

6.07 PROGRESS PAYMENTS

Once each month, the Engineer will make an estimate in written form of the total amount of work done and of the acceptable materials furnished and delivered by the Contractor on the site and not used to the time of such estimate, and the value thereof. To assist the Engineer in determining the value of acceptable materials which are on hand but not used, the Contractor shall furnish the Engineer with copies of invoices for all such materials. The Owner shall retain 5 percent of such estimated value of work done, and 50 percent of the value of materials so estimated to be on hand but not used.

This retention will serve as part security for the fulfillment of the Contract by the Contractor. The Owner shall pay monthly to the Contractor the balance not retained of the aforesaid, after deducting there from all previous payments and all sums to be retained.

When in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract, or when in his judgment the total amount of the work done since the last estimate amounts to less than $1,000.00, no pay estimate will be prepared and no progress payment will be made.

No estimates or payment shall be construed to be an acceptance of any defective work or improper materials.

The Contractor may, in accordance with the provisions of Government Code Section 4590, substitute securities for any monies which the Owner may withhold to insure performance under this Contract.

6.08 FINAL PAYMENT

Within 10 days after the completion of the work and its acceptance by the Owner, the Engineer will make a final estimate in writing of the quantities of work done and the value thereof, and will prepare a Notice of Completion to be filed by the Owner. At this time, a semi-final payment will be made to the Contractor provided that such payment is warranted under the terms of Section 6.07. The amount of this payment shall be based on the total value of work acceptably performed under the Contract, subject to the same conditions and retentions as payments previously made under the monthly estimates.

Within 20 days after the date of the final estimate, the Contractor shall submit to the Engineer either his written approval of the final quantities, and value of work as determined by the Engineer, or a written statement of any and all claims for additional compensation claimed to be due under the Contract. No claim for which a notice of potential claim is required will be considered unless the Contractor has complied with the notice provisions of Section 3.21, nor will any claim be considered that was not included in said written statement of claims.

Failure of the Contractor to submit claims within the specified 20-day period, regardless of whether or not he files written approval, shall constitute his acceptance of the quantities and value of work determined by the Engineer in the final estimate. No claim will be considered if filed after the specified 20-day period.

In the event the Contractor files claims within the specified 20-day period, the Engineer will, within 10 days after receipt of said claims, consider and investigate the Contractor's claims and make his final determination. Should he find any revision to be warranted as a result of his investigation, the Engineer will immediately notify the Owner and the final pay estimate will be revised accordingly.

Thirty-five days after the date of filing the Notice of Completion, the Owner will pay the entire sum found to be due, after deducting all previous payments and all amounts to be retained under the provisions of the Contract. As a condition of such payment, the Owner may require the Contractor to furnish a release of all claims against the Owner arising by virtue of the Contract. Payment will be withheld for any contract items for which a release is not furnished.

All prior partial estimates and payments shall be subject to correction in the final estimate and payments.

6.09 PAYMENT OF TAXES

The Contract prices paid for the work include full compensation for payment of federal, State or local taxes.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

1.00 SCOPE OF THE WORK

1.01 GENERAL WORK DESCRIPTION

The work to be done under this Contract consists of roadway excavation, placement of aggregate base and HMA paving, construction of curb, gutter, residential driveway cuts, storm drainage, adjusting utility covers to grade, pavement markings, roadside signs and all necessary appurtenances, complete.
All construction shall conform to the requirements of the Contract Documents entitled:

CONTRACT DOCUMENTS
FOR
ROAD M ½ REHABILITATION PROJECT

The intent of these contract documents is to provide for a completed work, and all items incidental and appurtenant to the specified items shall be included in the prices bid for the specified items.

1.02 DEFINITION OF TERMS

Wherever the words “City” or “Owner” appear in these documents, they shall be understood to mean the City of Orland, California.

Wherever the word "Contractor" appears in these documents, it shall be understood to mean the party or parties constructing the improvements for acceptance by the Owner.

Wherever the word "Engineer" or "City Engineer" appears in these documents, it shall be understood to mean *Rolls, Anderson & Rolls*, Chico, California, acting either directly or through duly authorized agents.

Wherever the words “Standard Detail(s)” appear in these documents, they shall be understood to mean the City of Orland Land Division Standards and Improvement Standards.

Wherever the words “State Standard Specification(s)” or “State Standard Plan(s)” appear in these documents, they shall be understood to mean the State of California Department of Transportation Specifications and State of California Department of Transportation Standard Plans.

1.03 SPECIFICATIONS AND PLANS

The work embraced herein shall be done in accordance with the City of Orland Land Division Standards and Improvement Standards, State of California Standard Specifications dated 2023, the State of California Standard Plans dated 2023, and these Special Conditions. References to the State of California Standard Specifications include material and workmanship specifications only. All measurement and payment sections of the State of California Standard Specifications are specifically **NOT** included in these Specifications.

Should a conflict arise between the City of Orland Land Division Standards and Improvement Standards and the Special Conditions, the Special Conditions shall govern.

Should a conflict arise between the Standard Specifications and the Special Conditions, the Special Conditions shall govern.

Should a conflict arise between the General Conditions and the Special Conditions, the Special Conditions shall govern.

Where Standard Specifications or testing methods have been referred to, such as ASTM or AASHTO, the intent is to refer to the latest applicable issue or revision of such specifications or testing methods.

2.00 PROGRESS AND COMPLETION OF THE WORK

2.01 AWARD OF CONTRACT
Refer to Section 8.00 of the Instructions to Bidders. The Award of Contract, if made, will be made within 30 days of the opening of Bids.

2.02 TIME OF COMPLETION
The Contractor shall diligently prosecute the work to completion within 75 CALENDAR DAYS from the issuance of the Notice to Proceed by the Owner.

2.03 LIQUIDATED DAMAGES
The Contractor shall pay to the Owner the sum of $1,100.00 per day, for each and every calendar day's delay in finishing the work in excess of the number of calendar days prescribed above.

3.00 CONTROL OF THE WORK

3.01 PREVAILING WAGE
The successful bidder shall post a copy of the applicable wage rates on the job site during the construction period. Contractors and subcontractors shall submit certified payrolls to the Department of Industrial Relations in accordance with State of California requirements.

3.02 PERMITS AND LICENSES
No permits will be issued by the Owner for this work. It shall be the responsibility of the Contractor to secure all permits and licenses necessary, as well as pay all fees required for the completion of the work. The Contractor shall comply with all laws and regulations applicable to the work.

3.03 COORDINATION
The Owner and public utility companies reserve the right to enter upon the work for the purpose of making changes necessitated by the improvements being constructed under this Contract. The Owners of the public utilities will coordinate such work with the Contractor and all parties shall cooperate to the fullest extent possible.

The Contractor shall protect from damage all utilities and other facilities that are to remain in place, be installed, relocated or otherwise rearranged.

3.04 SHOP DRAWINGS AND MATERIAL DATA
The Contractor shall provide shop drawings and material data, in accordance with the General Conditions, to the City Engineer within 15 days of the execution of the contract. Complete submittal packages shall be reviewed and approved prior to the issuance of the Notice to Proceed.

For this project submittals shall include, but not be limited to, mix designs, pipe materials, pipe joint details, special fittings or adaptors, pre-cast concrete structures, imported bedding and backfill materials, and all technical design data required by the Engineer to verify product compliance with the Contract Documents.

3.05 UNDERGROUND SERVICE ALERT (USA)
The Contractor shall notify the Underground Service Alert at least 72 hours before excavating.

3.06 EXISTING UTILITIES
Existing underground utilities are indicated on the drawings, based upon record information. The depths of existing utilities are unknown. The Contractor shall verify the exact locations in the field to avoid damage to existing facilities.

The Contractor shall cooperate with utility companies in locating facilities and shall exercise care in working adjacent to or crossing such facilities to avoid damage. Any damage to existing facilities caused by the Contractor's operation shall be repaired by the Contractor at his expense.

3.07 RIGHTS OF WAY

The Contractor shall confine his operations to the limits of the rights-of-way provided. The Contractor is advised that if additional working space is required outside the limits of the rights-of-way provided, such additional area must be obtained directly from the property owners by the Contractor for use during the construction period. The Owner shall be furnished with copies of **written** agreements or otherwise notified **in writing** if additional working space is acquired.

3.08 HOURS OF OPERATION

The Contractor shall restrict his activities to the hours between 7:00 a.m. and 5:00 p.m. Monday through Friday, unless otherwise approved by the Owner.

3.09 NOISE CONTROL

All equipment used by the Contractor shall have noise muffling devices approved for use in residential areas.

3.10 DUST CONTROL

Where dust is created, either by the Contractor's vehicles or other vehicles, it shall be controlled by the Contractor through watering or preferably by cleaning up the material causing the dust. Dust control shall be continued as necessary until the work is accepted by the Owner.

3.11 CONSTRUCTION WATER

The Owner will furnish water for dust control, cleaning operations, and testing from the Owner's existing system. No charge will be made for such water. However, it shall not be used wastefully, and it shall be the Contractor's responsibility to see that it is delivered to the place it is needed. The Contractor shall make a written request to the City of Orland Public Works Department for the installation of a hydrant meter prior to beginning work. The Contractor shall only use water from hydrants that have been fitted with hydrant meters. The Contractor shall furnish and use only proper hydrant wrenches when obtaining water from fire hydrants. No fire hydrant shall be obstructed in case of fire in the area served by the hydrant.

3.12 SANITATION

The Contractor shall provide temporary sanitation facilities at the work site, and maintain such facilities throughout the period of work on the project.

3.13 TESTING

All required testing of materials and construction methods will be provided by the Owner. Should tests show materials or methods to be unacceptable, however, and re-testing of the same material is required, the cost of such re-testing will be deducted from payments due the Contractor.

3.14 LANDSCAPE RESTORATION

All landscaping and irrigation facilities disturbed by the work shall be restored to its original condition by the Contractor. Any irrigation facilities in conflict with proposed improvements shall be replaced, repaired or relocated and tested by the Contractor. Testing of the irrigation facilities shall be done while the Public Works Director or his representative is present.

The Contractor shall take care to minimize damage to adjacent landscaping. Sod shall be installed where established grass has been removed. The Contractor shall restore landscaping as trenching and backfilling operations are completed. Restored landscaping shall be watered and maintained for thirty (30) days after placement.

No measurement of quantities will be made. Payment for restoring landscaping to existing conditions or as specified by the Engineer shall be included in the prices bid for the Bid Items.

3.15 OWNERSHIP OF REMOVED OR SURPLUS MATERIAL

Excavated concrete structures, pipe, iron and asphalt shall become the property of the Contractor, and removed from the site.

Miscellaneous construction materials, debris, rubble, backfill screenings, or deleterious material not suitable for backfill shall become the property of the Contractor, and removed from the site.

3.16 CLEANUP

The work area shall be kept in a neat and orderly condition during construction. The Contractor shall remove and dispose of all trash, debris and waste material resulting from his operations.

Upon completion of the work, the Contractor shall remove all debris, surplus material, equipment and supplies, and shall leave the entire work area in a neat, orderly condition.

3.17 CONSTRUCTION STAKING

Contractor shall provide construction staking for all items shown on the improvement plans. Staking shall be provided as follows to establish the lines and grades required for the completion of the work specified in the Contract Documents.

1. Roadway Rough Grading: may be completed using conventional survey methods or GPS.

2. Roadway Finish Grading (including curb and gutter): maximum of 50-foot intervals, all grade breaks, begin and end of curves and returns, and radius points.

3. Water Utilities: maximum of 100-foot intervals, all connection points, tees, crosses and fire hydrants.

4. Sewer Utilities: maximum of 100-foot intervals, all connection points, manholes, cleanouts and ends of laterals.

5. Storm Drain Utilities: maximum of 100-foot intervals, all connection points, manholes, drop inlets, area drains, changes in direction and ends of leach trenches.

6. Irrigation Utilities: maximum of 100-foot intervals, all connection points, changes in direction, valves, tees and stubs.

Property corners, bench marks, reference points and stakes shall be carefully preserved by the Contractor. In case such stakes or marks are destroyed or damaged, they shall be replaced at no additional cost to the owner.

4.00 WORK ZONE SAFETY

4.01 POLICY

The Contractor shall be **solely** responsible for safety on the job. Inspection of the work being performed or acceptance of work completed does not imply any approval or acceptance by the Owner of safety measures used by the Contractor.

The Contractor shall furnish, erect, and maintain at all times, substantial barricades, fences, signs, or other adequate protection.

The Contractor shall furnish, erect, and maintain at all times adequate sheeting, shoring, and bracing of all excavations in accordance with OSHA and California Industrial Safety Regulations. The Contractor shall be **solely** responsible for the adequacy and sufficiency of the safety equipment used.

The work shall be carried out in an orderly and systematic manner to present as little inconvenience as possible to public traffic. A minimum of one traffic lane shall be maintained on adjacent streets at all times.

5.00 INSURANCE REQUIREMENTS

5.01 GENERAL

Fire Insurance, as specified in Section 4.02 of the General Conditions is not required for this project.

The Contractor shall procure and maintain for the duration of the Contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the Contractor's bid.

5.02 MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

General Liability and Umbrella or Excess Liability Insurance covering all operations by or on behalf of the Contractor providing insurance for bodily injury liability, and property damage liability for the limits of liability indicated below and including coverage for premises, operations and mobile equipment; products and completed operations; broad form property damage (including completed operations); explosion, collapse and underground hazards; personal injury; and contractual liability.

Automobile Liability Insurance, including coverage for all owned, hired and non-owned automobiles.

Workers' Compensation Insurance as required by the State of California and Employer's Liability insurance.

5.03 MINIMUM LIMITS OF INSURANCE

The Contractor shall maintain no less than:

1. General Liability:
   a) $1,000,000.00 per occurrence (combined a single limit for bodily injury and property damage).
   b) $2,000,000.00 aggregate for products-completed operations.
   c) $2,000,000.00 general aggregate. This general aggregate limit shall apply separately to the Contractor's work under this Contract.
   d) $5,000,000.00 umbrella or excess liability. Umbrella or excess policy shall include products liability and completed operations coverage. Further, the umbrella or excess policy shall contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.

2. Automobile Liability: $1,000,000.00 combined single limit each accident for bodily injury and property damage. The umbrella or excess liability coverage required above shall also apply to automobile liability.

3. Employers Liability:
   a) $1,000,000.00 per accident for bodily injury by accident.
   b) $1,000,000.00 policy limit for bodily injury by disease.
   c) $1,000,000.00 for each employee for bodily injury by disease.

5.04 DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the City, its officers, officials, employees, agents and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

5.05 OTHER INSURANCE PROVISIONS

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The City, its officers, officials, employees, agents and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees, agents or volunteers.

2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, agents or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

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

4. Coverage for such additional insureds shall not extend to liability:
   a) arising from any defective or substandard condition of a City roadway which existed prior to the time the Contractor commenced work, unless such condition has been changed by the work or the scope of the work requires the Contractor to maintain existing City roadway facilities and the claim arises from the Contractor's failure to maintain; or,
   b) for claims occurring after the work is completed and accepted unless these claims are directly related to alleged acts or omissions of the Contractor which occurred during the course of the work; or,
   c) to the extent prohibited by Section 11580.04 of the Insurance Code.

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

6. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City of Orland.

5.06 WORKERS COMPENSATION AND EMPLOYERS LIABILITY COVERAGE

The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, employees, agents and volunteers for losses arising from work performed by the Contractor for the City.

5.07 ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers that are acceptable to the City of Orland.

5.08 VERIFICATION OF COVERAGE

Contractor shall furnish the City with original endorsements affecting coverage required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be on forms provided by the City and all endorsements are to be received and approved by the City before work commences. As an alternate to the City's forms, the Contractor's insurer may provide complete, certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications.

5.09 SUBCONTRACTORS

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

If the Contractor fails to maintain such insurance, the City may take out such insurance to cover any damages, for which the City might be held liable on account of the operations under this contract, and deduct and retain the amount of the premiums for such insurance from any sums due the Contractor under this contract. Nothing herein contained shall be construed as limiting in any way the extent to which the Contractor may be held responsible for payment of damages resulting from his operations, or those of any subcontractor under him.

5.10 NO PERSONAL LIABILITY

Contractor shall indemnify and hold harmless City and its officers, officials, employees, agents and volunteers from and against claims, damages, losses and expenses including attorney fees arising out of the performance of the work described herein, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, except where caused by the active negligence, sole negligence, or willful conduct of the City.

TECHNICAL SPECIFICATIONS


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

1.00 GENERAL

1.01 MEASUREMENT AND PAYMENT

A. All measurements will be based on the actual completed work performed in strict accordance with the specifications.

B. Payment items for the work of this contract for which contract lump sum payments and unit price payments will be made are listed in the bid schedule and described below. All costs for items of work, which are not specifically mentioned to be included in a particular job or unit price payment item, are to be included in the listed job item most closely associated with the work involved. The unit price and payment made for each item listed constitutes full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

C. The Contractor shall submit a Schedule of Values that represents the cost of the work for each lump sum bid item with a value over $5,000. The breakdown shall not exceed the lump sum value for that bid item. The Schedule of Values shall be approved prior to submitting the first progress payment, whether or not the request for payment includes any lump sum items. The Schedule of Values shall be broken down into separate work activities that adequately describe the work, with a cost associated with each activity. The minimum detail of each breakdown shall be a cost for; materials freight on board, installation, testing and acceptance. The Schedule of Values shall not be used to determine the value of deleted or changed work, but shall be used solely for determining the value of progress payments in accordance with the General Conditions.

1.02 BID ITEM DESCRIPTIONS

A. Bid Item No. 1 – Mobilization/Demobilization

1. Description:
    a. Mobilization shall include all activities and costs for transportation of personnel, equipment, and operating supplies to and from the site; establishment of portable sanitary and refuse facilities; location, provision and installation of field offices & equipment/materials, storage yards for excavation equipment, buildings, and other necessary facilities for the Contractor's operations at the site; premiums paid for performance and payment bonds, including coinsurance and reinsurance agreements as applicable; temporary project signage; developing and providing construction water supply, pre-construction audio video survey, construction survey, and as-built project documents.
    b. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not included in the contract from the site; including the disassembly, removal and site cleanup, of offices, equipment, buildings, restoration of facilities, roads, fences, facilities etc. modified or disturbed during the course of the project and other facilities assembled on the site for this contract.
    c. Contractor will be responsible to provide his own security for equipment, materials, fuel, tools, etc. that he may have on site.
    d. The Contractor shall provide all necessary equipment & materials; all tools, accessories, power, fuel, materials, supplies, lighting, water, and other support equipment; and experienced personnel necessary to execute the work in an orderly an efficient manner.
    e. Bid item includes all items necessary to complete the Project that are not covered under any other Bid Item.
2. Measurement:
    a. The Owner makes partial payments for Mobilization/Demobilization costs which shall adhere to Public Contract Code § 10264, modified as follows, and not to exceed the following:

i. When 5 percent of the original contract amount is earned, 20 percent of the amount bid may be paid.

ii. When 10 percent of the original contract amount is earned, 40 percent of the amount bid may be paid.

iii. When 20 percent of the original contract amount is earned, 60 percent of the amount bid may be paid.

iv. When 50 percent of the original contract amount is earned, 80 percent of the amount bid may be paid.

v. When 100 percent of the original contract amount is earned, 100 percent of the amount bid may be paid.

3. Payment:

a. Payment for Mobilization/Demobilization will be made at the lump sum price bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals and for doing all the work necessary to complete Mobilization/Demobilization as required by these specifications.

B. Bid Item No. 2 – Traffic Control

1. Description:

a. Bid item includes all activities and costs for providing a traffic control plan, permits, temporary gates and fences, barricades, cones, delineators, construction area signs, message boards, flashing arrow signs, traffic control measures, and other safety measures to control vehicular traffic on access routes to the work site and at the work site during the project.

b. Bid item includes providing all labor, materials, transportation, supplies, tools, equipment, installation, removal, maintenance and traffic control in accordance with the Specifications and Plans.

2. Measurement:

a. The Owner makes payments for Traffic Control costs based on monthly progress estimates of the percentage of contract work completed.

3. Payment:

a. Payment for Bid Item will be made at the lump sum price bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals and for doing all the work necessary to provide the traffic control system as shown on the plans, as required by these specifications, and as directed by the Engineer.

C. Bid Item No. 3 – Water Pollution Control

1. Description:

a. The Contractor shall comply with all local, state and federal requirements for erosion control, site dust control, and other environmental compliance items identified in the General and Special Conditions. Contractor shall install, maintain, and remove all necessary measures to comply with the requirements of the applicable regulatory agencies.

2. Measurement:

a. The Owner makes payments for Water Pollution Control costs based on monthly progress estimates of the percentage of contract work completed.

3. Payment:

a. Payment for Water Pollution Control will be made at the lump sum price provided in the Bid, which shall include full compensation for furnishing all permits, fees, materials, labor, tools, equipment, and incidentals, and for doing all the work involved in erosion control, completely, including all inspections, maintenance, and

removal of erosion control items as shown on the plans, as required by these specifications, and as directed by the Engineer.

D. Bid Item No. 4 – Clearing, Grubbing and Demolition

1. Description:
   a. The Contractor shall clear and grub the entire area enclosed by the project, which includes demolition, disposal, hauling, clearing, grubbing, and stripping as required to install and/or remove and dispose of all items as necessary to complete the Work.
2. Measurement:
   a. The Owner makes payments for Clearing, Grubbing and Demolition costs based on monthly progress estimates of the percentage of contract work completed.
3. Payment:
   a. Payment for Bid Item will be made at the lump sum price bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals and for doing all the work necessary to complete the Bid Item as shown on the plans, as required by these specifications, and as directed by the Engineer.

E. Bid Item No. 5 – Roadway Excavation

1. Description:
   a. The Contractor shall remove and dispose of existing asphalt pavement, excavate and dispose of roadway excavation materials to subgrade depth, and grade, compact and prepare the subgrade in accordance with the Drawings and Specifications. Limits of roadway excavation shall include the proposed roadway prism including curb and gutter, valley gutter, paved shoulders and shoulder backing.
2. Measurement:
   a. The Owner makes payments for Roadway Excavation costs based on monthly progress estimates of the percentage of contract work completed.
3. Payment:
   a. Payment for Bid Item will be made at the lump sum price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in removal and disposal of existing asphalt pavement and subgrade materials and to prepare the subgrade as shown on the plans, as required by these specifications, and as directed by the Engineer.

F. Bid Item No. 6 – Relocate Existing Mailbox

1. Description:
   a. The Contractor shall remove and salvage existing mailbox and post, dispose of existing concrete foundation, backfill excavation and relocate the existing mailbox with new concrete foundation in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each existing mailbox relocated as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in removal and relocation of existing mailbox and post, disposal of existing post foundation concrete, and backfill of excavations as required by these specifications, and as directed by the Engineer.

G. Bid Item No. 7 – Install 18”x18” Catch Basin

1. Description:
   a. The Contractor shall furnish and install concrete catch basin and grate including connection to existing and proposed pipes, perform excavation and backfill, and grout finish interior joints in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each Catch Basin installed as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of Catch Basin as required by these specifications, and as directed by the Engineer.

H. Bid Item No. 8 – Install City Std. 401 Drop Inlet

1. Description:
   a. The Contractor shall furnish and install Drop Inlet including connection to existing and proposed pipes, perform excavation and backfill, and grout finish interior joints in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each Drop Inlet installed as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of Drop Inlet as required by these specifications, and as directed by the Engineer.

I. Bid Item No. 9 – Install Storm Drain Leach Trench

1. Description:
   a. The Contractor shall furnish and install piping, fabric, drain rock, perform excavation and backfill in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made on a lineal foot basis, measured along the top of pipe as situated in its final position from end of pipe to end of pipe.
3. Payment:
   a. Payment for Bid Item will be made at the price per lineal foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of Leach Trench as required by these specifications, and as directed by the Engineer.

J. Bid Item No. 10 – Install 10-inch Dia. HDPE Storm Drain Pipe

1. Description:
   a. The Contractor shall furnish and install piping, perform excavation and backfill in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made on a lineal foot basis, measured along the top of pipe as situated in its final position from end of pipe to end of pipe.
3. Payment:
   a. Payment for Bid Item will be made at the price per lineal foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools,

equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of 10-inch Diameter Storm Drain Pipe as required by these specifications, and as directed by the Engineer.

K. Bid Item No. 11 – Adjust Manhole Frame and Cover to Finish Grade

1. Description:
   a. The Contractor shall neatly remove asphalt concrete and subgrade materials, prepare and compact subgrade, raise manhole frame and cover to finish grade, and construct concrete collars in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each manhole frame and cover assembly adjusted as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in adjusting manhole frames and covers to grade, complete in place, including concrete and bar reinforcement, as shown on the plans, as required by these specifications, and as directed by the Engineer.

L. Bid Item No. 12 – Adjust Utility Valve Frame and Cover to Finish Grade

1. Description:
   a. The Contractor shall neatly remove asphalt concrete and subgrade materials, prepare and compact subgrade, raise utility valve frame and cover to finish grade, and construct concrete collars in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each utility valve frame and cover assembly adjusted as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in adjusting utility valve frames and covers to grade, complete in place, including concrete and bar reinforcement, as shown on the plans, as required by these specifications, and as directed by the Engineer.

M. Bid Item No. 13 – Install 12-inch Dia. HDPE Storm Drain Pipe

1. Description:
   a. The Contractor shall furnish and install piping, perform excavation and backfill in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made on a lineal foot basis, measured along the top of pipe as situated in its final position from end of pipe to end of pipe.
3. Payment:
   a. Payment for Bid Item will be made at the price per lineal foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of 12-inch Diameter Storm Drain Pipe as required by these specifications, and as directed by the Engineer.

N. Bid Item No. 14 – Water Main Connection

1. Description:
   a. The Contractor shall connect to existing water main including cutting, removal and disposal of existing water line, installation of water pipe fittings, connection restraints, install thrust blocks, connection to existing tracer wire, bacterial

disinfection, flushing, excavation and backfill in accordance with the Drawings and Specifications.

2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each water main connection made as a single unit.
      i. Installation of a water pipe tee is counted as one connection.
      ii. Connections made as the result of a water facility relocation shall be paid for under the Bid Item to relocate said facility.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in Water Main Connection and backfill of excavations as required by these specifications, and as directed by the Engineer.

O. Bid Item No. 15 – Install 8-inch Dia. Gate Valve

1. Description:
   a. The Contractor shall install Gate Valve in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each Gate Valve made as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installation of Gate Valve, tracer wire, pipe extension, valve box adjusted to grade, concrete collar, and backfill of excavations as required by these specifications, and as directed by the Engineer.

P. Bid Item No. 16 – Install 8-inch Dia. Water Main

1. Description:
   a. The Contractor shall furnish and install piping with tracer wire, bacterial disinfection, flushing, excavation and backfill in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made on a lineal foot basis, measured along the top of pipe as situated in its final position from end of pipe to end of pipe inclusive of fittings.
3. Payment:
   a. Payment for Bid Item will be made at the price per lineal foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, disinfection, flushing and backfill as required by these specifications, and as directed by the Engineer.

Q. Bid Item No. 17 – Install City Std. 406 Sewer Manhole

1. Description:
   a. The Contractor shall construct Sewer Manhole including excavation, subgrade preparation, connection to existing and proposed sewer lines, install manhole frame and cover to finish grade, and construct concrete collar, and perform testing in accordance with the Drawings and Specifications.
2. Measurement:

a. Measurement of Bid Item will be made as a field count of each Sewer Manhole installed as a single unit.

3. Payment:

a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installation of Sewer Manhole, complete in place as shown on the plans, as required by these specifications, and as directed by the Engineer.

R. Bid Item No. 18 – Install 8-inch Dia. Sewer Main

1. Description:
   a. The Contractor shall furnish and install piping, perform excavation and backfill in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made on a lineal foot basis, measured along the top of pipe as situated in its final position from end of pipe to end of pipe inclusive of fittings.
3. Payment:
   a. Payment for Bid Item will be made at the price per lineal foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of 8-inch Diameter Sewer Pipe as required by these specifications, and as directed by the Engineer.

S. Bid Item No. 19 – Install City Std. 503 Sewer Service

1. Description:
   a. The Contractor shall install sewer service including excavation, connection to existing or proposed sewer main, installation of fittings, backfill, curb stamping and pipe end marker in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each Sewer Service installed as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation, connection and backfill of Sewer Service as required by these specifications, and as directed by the Engineer.

T. Bid Item No. 20 – Irrigation Pipe Connection

1. Description:
   a. The Contractor shall connect to existing irrigation piping including installation of water pipe fittings, connection restraints, flushing, excavation and backfill in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each water main connection made as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in Irrigation Pipe Connection, and backfill of excavations as required by these specifications, and as directed by the Engineer.

U. Bid Item No. 21 – Install 18-inch Dia. Gate Valve

1. Description:
   a. The Contractor shall install Gate Valve in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made as a field count of each Gate Valve installed as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installation of Gate Valve, pipe extension, valve box adjusted to grade, and backfill of excavations as required by these specifications, and as directed by the Engineer.

V. Bid Item No. 22 – Install 18-inch Dia. Irrigation Main

1. Description:
   a. The Contractor shall furnish and install piping, perform excavation, backfill and place pipe markers in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Bid Item will be made on a lineal foot basis, measured along the top of pipe as situated in its final position from end of pipe to end of pipe inclusive of fittings.
3. Payment:
   a. Payment for Bid Item will be made at the price per lineal foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation and backfill of 18-inch Diameter Irrigation Main as required by these specifications, and as directed by the Engineer.

W. Bid Item No. 23 – Furnish and Install Class 2 Aggregate Base

1. Description:
   a. The Contractor shall furnish and place class 2 aggregate base at the project site, including importing, spreading, rough and fine grading, and compaction, in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of class 2 aggregate base material will be made on the basis of weight, as determined by the scale weight of each load of material. Materials shall be weighed in accordance with the provisions of “Section 9” of the State Standard Specifications. The weight of water in the material at the time of weighing, in excess of one percentage point over the optimum moisture as determined by ASTM Test D-1557, will not be paid for. The actual moisture content of the material will be determined by ASTM Test D-2216.
3. Payment:
   a. Payment for Bid Item will be made at the price per ton bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals and for doing all the work involved in furnishing, placing, shaping, compacting and finishing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

X. Bid Item No. 24 – Furnish and Install Hot Mix Asphalt

1. Description:
   a. The Contractor shall furnish and place hot mix asphalt at the project site, including importing, spreading, and compacting, in accordance with the Drawings and Specifications.

2. Measurement:
    a. Measurement of asphalt concrete will be made on the basis of weight, as determined by scale weight of each load of material, in accordance with the provisions of Section 9 of the State Standard Specifications.
3. Payment:
    a. Payment for furnishing and applying liquid asphalt and asphaltic emulsion shall be included in the prices bid for hot mix asphalt, and no separate payment will be made.
    b. Payment for furnishing and applying prime coat and paint binder shall be included in the prices bid for hot mix asphalt, and no separate payment will be made.
    c. Payment for Bid Item will be made at the price per ton bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, in furnishing, spreading and compacting hot mix asphalt as shown on the plans, as required by these specifications, and as directed by the Engineer.

Y. Bid Item No. 25 – 2-inch Thick Asphalt Sidewalk and Driveway Conforms

1. Description:
    a. The Contractor shall furnish and place hot mix asphalt conforms at the project site, including importing, spreading, and compacting, in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of asphalt concrete will be made as a field measurement of the square footage based on the average length and width per each location.
3. Payment:
    a. Payment for furnishing and applying liquid asphalt and asphaltic emulsion shall be included in the prices bid for hot mix asphalt, and no separate payment will be made.
    b. Payment for furnishing and applying prime coat and paint binder shall be included in the prices bid for hot mix asphalt, and no separate payment will be made.
    c. Payment for Bid Item will be made at the price per square foot bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, in furnishing, spreading and compacting hot mix asphalt as shown on the plans, as required by these specifications, and as directed by the Engineer.

Z. Bid Item No. 26 – Install City Std. 202 Rolled Curb and Gutter

1. Description:
    a. The Contractor shall construct concrete curb and gutter at the project site in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of rolled curb and gutter will be made on a lineal foot basis, measured along the face of curb line.
3. Payment:
    a. Payment for aggregate base will be made under Bid Item No. 23.
    b. Payment for Bid Item will be made at the price per linear foot bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

AA. Bid Item No. 27 – Install City Std. 202 6” Barrier Curb and Gutter

1. Description:

a. The Contractor shall construct concrete curb and gutter at the project site in accordance with the Drawings and Specifications.

2. Measurement:
   a. Measurement of 6” barrier curb and gutter will be made on a lineal foot basis, measured along the face of curb line.
3. Payment:
   a. Payment for aggregate base will be made under Bid Item No. 23.
   b. Payment for Bid Item will be made at the price per linear foot bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

BB. Bid Item No. 28 – Install City Std. 204 Sidewalk

1. Description:
   a. The Contractor shall excavate, remove and dispose of existing materials to subgrade depth; grade, compact and prepare the subgrade; furnish, place and grade bedding materials; and construct concrete sidewalk at the project site in accordance with the Drawings and Specifications.
2. Measurement:
   a. Payment for aggregate base will be made under Bid Item No. 23.
   b. Measurement of sidewalk will be made on a square foot basis, measured along the face of curb line or sidewalk centerline, multiplied by the nominal width, exclusive of curb and gutter.
3. Payment:
   a. Payment for Bid Item will be made at the price per square foot bid in the Proposal, which shall include full compensation for excavation and subgrade preparation, furnishing and placing bedding, furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

CC. Bid Item No. 29 and 30 – Install City Std. 205 Residential Driveway and City Std. 206 Commercial Driveway

1. Description:
   a. The Contractor shall excavate, remove and dispose of existing materials to subgrade depth; grade, compact and prepare the subgrade; furnish, place and grade bedding materials; and construct concrete driveway at the project site in accordance with the Drawings and Specifications.
2. Measurement:
   a. Payment for aggregate base will be made under Bid Item No. 23.
   b. Measurement of Commercial and Residential Diveway will be made on a square foot basis, measured along the face of curb line or sidewalk centerline, multiplied by the nominal width, exclusive of curb and gutter.
3. Payment:
   a. Payment for Bid Item will be made at the price per square foot bid in the Proposal, which shall include full compensation for excavation and subgrade preparation, furnishing and placing bedding, furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

DD. Bid Item No. 31 – Install City Std. 207 Curb Ramp

1. Description:
    a. The Contractor shall excavate, remove and dispose of existing materials to subgrade depth; grade, compact and prepare the subgrade; furnish, place and grade bedding materials; and construct concrete curb ramp with detectable warning surface at the project site in accordance with the Drawings and Specifications.
2. Measurement:
    a. Payment for aggregate base will be made under Bid Item No. 23.
    b. Measurement of Curb Ramp will be made on a square foot basis, measured along the face of curb line or sidewalk centerline, multiplied by the nominal width, exclusive of curb and gutter.
3. Payment:
    a. Payment for Bid Item will be made at the price per square foot bid in the Proposal, which shall include full compensation for excavation and subgrade preparation, furnishing and placing bedding, furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

EE. Bid Item No. 32 – Install Caltrans A87B Type E Asphalt Dike

1. Description:
    a. The Contractor shall construct asphalt curb dike at the project site in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of Type E Asphalt Dike will be made on a lineal foot basis, measured along the face of curb line.
3. Payment:
    a. Payment for aggregate base will be made under Bid Item No. 23.
    b. Payment for Bid Item will be made at the price per linear foot bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

FF. Bid Item No. 33 – Install Blue Reflective Marker

1. Description:
    a. The Contractor shall furnish and install Blue Reflective Marker in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of Bid Item will be made as a field count of each Marker installed as a single unit.
3. Payment:
    a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in preparing the surface and installing the Marker as required by these specifications, and as directed by the Engineer.

GG. Bid Item No. 34 and 35 – Install 4-inch Yellow Thermoplastic Stripe and 4-inch White Thermoplastic Stripe

1. Description:
    a. The Contractor shall install thermoplastic striping at the project site in accordance with the Drawings and Specifications.

2. Measurement:
    a. Measurement of thermoplastic striping will be made on a lineal foot basis, measured along the centerline of the stripe.
3. Payment:
    a. Payment for Bid Item will be made at the price per linear foot bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

HH. Bid Item No. 36 – Install Thermoplastic "STOP" Legend

1. Description:
    a. The Contractor shall install thermoplastic marking at the project site in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of thermoplastic "STOP" legend will be made as a field count of each legend installed as a single unit.
3. Payment:
    a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

II. Bid Item No. 37 and 38– Install Thermoplastic Basic Crosswalk and Continental Crosswalk Markings

1. Description:
    a. The Contractor shall install thermoplastic crosswalk markings at the project site in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of thermoplastic Basic Crosswalk marking will be based on a measurement of each thermoplastic marking length multiplied by the nominal width of the marking.
    b. Measurement of thermoplastic Continental Crosswalk marking will be based on a measurement of each thermoplastic marking length multiplied by the nominal width of the marking.
3. Payment:
    a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

JJ. Bid Item No. 39 – Install Roadside Sign (One Post)

1. Description:
    a. The Contractor shall furnish and install Roadside Sign and post including excavation and placement of sign post footing in accordance with the Drawings and Specifications.
2. Measurement:
    a. Measurement of Bid Item will be made as a field count of each Roadside Sign and Post installed as a single unit.
3. Payment:

a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in excavation, installation of Roadside Sign and Post as required by these specifications, and as directed by the Engineer.

KK. Bid Item No. 40 – Install Wire Fence

1. Description:
   a. The Contractor shall install Wire Fence including posts, bracing, post footings, connections to existing fencing and all fencing materials at the project site in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Wire Fence will be made on a lineal foot basis, measured along the face of the fence line exclusive of gate openings.
3. Payment:
   a. Payment for Bid Item will be made at the price per linear foot bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

LL. Bid Item No. 41 – Install 16-foot-wide Double Gate

1. Description:
   a. The Contractor shall install Double Gate including gate posts, footings, hinges, latches, connections to existing fencing and all gate hardware and materials at the project site in accordance with the Drawings and Specifications.
2. Measurement:
   a. Measurement of Double Gate will be made as a field count of each double gate installed as a single unit.
3. Payment:
   a. Payment for Bid Item will be made at the unit price bid in the Proposal, which shall include full compensation for furnishing all materials, labor, tools, equipment, and incidentals, and for doing all the work involved in constructing the bid item as shown on the plans, as required by these specifications, and as directed by the Engineer.

2.00 MATERIALS (RESERVED)

3.00 WORKMANSHIP (RESERVED)

1.00 SCOPE

This section covers all work required to remove miscellaneous highway facilities, concrete and all objectionable material from the project site within the limits of the proposed construction. Removed facilities shall be disposed of, salvaged, relaid, reset, relocated or reconstructed as specified in these specifications or as shown on the plans.

2.00 DEFINITIONS

2.01 MISCELLANEOUS HIGHWAY FACILITIES shall include all structures, drainage, irrigation and sewer facilities, right of way and traffic control facilities, and any other miscellaneous improvements or facilities.

2.02 CONCRETE shall be defined as all or portions of mortared rubble masonry, brick or stone curbs, gutters and sidewalks; and portland cement concrete curbs, gutters, sidewalks, gutter depressions, driveways, aprons, slope paving, foundations, footings, and all other portland cement concrete or masonry construction. Concrete pipe and clay pipe will be considered as miscellaneous highway facilities to be removed, salvaged, relaid or disposed of.

3.00 WORKMANSHIP

3.01 GENERAL

The Contractor shall execute all work described within this specification in an orderly and careful manner with due consideration for any existing condition designated to remain. Provide protection to preserve existing items indicated to remain and to prevent injury or damage to persons or adjacent properties.

The Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property. The Contractor shall repair or replace all existing improvements within the right-of-way which are not designated for removal (e.g., curbs, sidewalks, driveways, fences, walls, signs, utility installations, pavement, structures, etc.) which are damaged or removed as a result of its operations.

The Contractor shall avoid any encroachment on adjacent properties. In the event of damage or loss to any existing condition designated to remain on adjacent properties, immediately make all repairs and replacements necessary to the approval of the City Engineer at no additional cost to the City.

Clearing, grubbing and demolition shall be performed in advance of grading operations and in accordance with the requirements specified in these Contract Documents.

The area shall be cleared of all vegetable growth such as brush, grass, weeds and all other objectionable material. Grubbing shall extend to the outside excavation and fill slope lines, except that where slopes are to be rounded, the areas shall extend to the outside limits of slope rounding. No payment will be made to the Contractor for clearing and grubbing outside the stated limits, unless such work is authorized by the Engineer.

All materials removed, which are not to be salvaged or reused, shall become the property of the Contractor and shall be removed from the site by the Contractor. The Contractor shall be responsible for obtaining a suitable disposal site in accordance with the Special Conditions.

Salvaged materials shall be delivered to the Owner's Public Works Department or other agreed upon site.

3.02 TRAFFIC STRIPES, PAVEMENT MARKINGS AND MARKERS

Traffic stripes and pavement markings shall be removed by any method that does not materially damage the existing pavement. Pavement marking images shall be removed in such a manner that the old message cannot be identified. Where grinding is used, the pavement marking image shall be removed by grinding a rectangular area. The minimum dimensions of the rectangle shall be the height and width of the pavement marking. Residue resulting from removal operations shall be removed from pavement surfaces by sweeping or vacuuming before the residue is blown by the action of traffic or wind, migrates across lanes or shoulders, or enters into drainage facilities. Traffic stripes shall be removed before any change is made in the traffic pattern.

Pavement markers, including underlying adhesive, shall be removed by such methods that will cause the least possible damage to the pavement or surfacing. Damage to the pavement or surfacing caused by pavement marker removal shall be repaired by the Contractor at the Contractor's expense by methods acceptable to the Engineer. During the removal of ceramic type pavement markers, screens or other protective devices shall be furnished to contain any fragments as provided for in State Standard Specifications. Fragments resulting from the removal of pavement markers shall be removed from the highway before the lane or lanes are opened to public traffic.

3.03 DRAINAGE FACILITIES: Existing culverts, storm drain pipelines, inlets, manholes, or other drainage structures, where shown on the plans, shall be removed and disposed of. Resulting openings into existing structures that are to remain in place shall be plugged with concrete conforming to Section 90 of the State Standard Specifications. The ends of culverts and storm drain pipelines shall be securely closed by a 0.5-foot-thick tight-fitting plug or wall of commercial quality concrete. Trenches, holes, depressions and pits caused by the removal of drainage facilities shall be backfilled with Class 2 aggregate base material as provided in the Technical Specification titled “Trench Excavation and Backfill.”

Drainage ditches to be abandoned shall be backfilled as specified on the improvement plans.

3.04 CONCRETE

A. General

Concrete removal operations shall be performed without damage to any portion that is to remain in place. Damage to the existing concrete, which is to remain in place, shall be repaired to a condition equal to that existing prior to the beginning of removal operations. The cost of repairing existing concrete damaged by the Contractor's operations shall be at the Contractor's expense.

Residue from sawcutting shall be picked up by means of a vacuum device. Residue shall not be allowed to flow across the pavement and shall not be left on the surface of the pavement. Gravel bags shall be placed in the gutter pan prior to sawcutting. Gravel bags shall remain in gutter pan until construction has been completed in that area.

B. Pavement

Concrete pavement, which has not been overlaid with asphalt concrete, shall be removed to neatly sawed edges. Saw cuts shall be made to a minimum depth of 1-1/2 inches. If a saw cut falls within 3 feet of a construction joint, cold joint, expansion joint, or edge, the concrete shall be removed to the joint or edge. The edges of existing concrete pavement adjacent to trenches, where damaged subsequent to saw cutting of the pavement, shall again be saw cut to neat, straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be either parallel to the original saw cuts or shall be cut on an angle that departs from the original saw cut not more than 1 inch in each 6 inches.

C. Concrete Curb, Gutters, Sidewalk, Cross Gutters, Curb Ramps And Driveways

Shall be removed at the locations shown on the plans or where directed by the Engineer. Removal shall be to the lines and elevations shown, specified, or determined by the

Engineer. Existing concrete shall be cut to a true line where new concrete is to join existing concrete. Concrete shall be removed to neatly sawed edges with saw cuts made through the entire thickness. Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than 30 inches in either length or width. If the saw cut in sidewalk or driveway would fall within 30 inches of a construction joint, expansion joint, or edge, the concrete shall be removed to the joint or edge, except that where the saw cut would fall within 12 inches of a score mark, the saw cut shall be made in and along the score mark. Curb and gutter shall be sawed on a neat line at right angles to the curb face.

3.05 ASHPALT CONCRETE

Shall be cut and removed to a true line at the location shown on the plans or where directed by the Engineer. Edges shall be saw cut full-depth. Removal performed by cold milling shall conform to this specification.

Residue from sawcutting shall be picked up by means of a vacuum device. Residue shall not be allowed to flow across the pavement and shall not be left on the surface of the pavement. Gravel bags shall be placed in the gutter pan prior to sawcutting. Gravel bags shall remain in the gutter pan until construction has been completed in that area. Asphalt concrete removal operations shall be performed without damage to any portion that is to remain in place. Damage to the existing asphalt concrete, which is to remain in place, shall be repaired to a condition equal to that existing prior to the beginning of removal operations. The cost of repairing existing concrete damaged by the Contractor's operation shall be at the Contractor's expense.

3.06 COLD MILLING

The type of pavement and depth to be cold milled shall be as shown on the Plans or specified in the Special Conditions. The presence of pavement fabric or steel reinforcement within the depth to be cold milled is unknown. The surface after cold milling shall be uniformly grooved or ridged. The outside lines of the milled pavement shall be neat and uniform. The Contractor shall remove existing asphalt concrete overlay or slurry seal material within one-foot of the edge of concrete gutters adjacent to any area to be cold milled. The removal procedure and equipment to be used shall be approved by the Engineer.

The milled pavement shall be true to grade and cross section. When a straightedge is laid on the finished surface parallel to the centerline of the roadway, the surface shall not vary from the edge of the straightedge more than 3/8 inch at any point, except at intersections or at changes of grade. Any areas that are not within tolerance shall be brought to grade within one Working Day following initial cold milling.

Cold milling operations shall be performed without damage to the remaining pavement. Whenever cold milling is adjacent to existing concrete curbs, gutters or pavement, the Contractor shall protect these improvements from damage. Concrete curbs, gutters or pavement damaged during cold milling operations shall be repaired as directed by the Engineer. Replaced section of concrete curb, gutter or pavement shall be a minimum of 5 feet in length or to the next joint.

A. Milling Machines
Milling machines shall be specifically designed and constructed for cold milling of asphalt concrete, concrete, or composite pavement.

1) General. Milling machines shall conform to the following:
   (a) The cutting drum shall be a minimum of 24 inches wide, except for those mounted on a skid-steer loader, and shall be equipped with carbide-tipped cutting teeth placed in a variable pattern to produce the desired finish.
   (b) Be self-propelled and capable of removing the pavement to the depth shown on the Plans.

(c) Be equipped with a conveyor system that will immediately convey the milled material into a transport vehicle for disposal.
(d) Be capable of spraying water at the cutting drum to minimize dust.
(e) Be designed so that the operator can observe the milling operation at all times, without leaving the controls.
(f) Be adjustable for slope and depth.
(g) Be capable of milling, in one pass, to the maximum depth recommended by the manufacturer without producing fumes or smoke.

B. Milling to Specified Elevations
Milling machines used for milling to specified elevation shall conform to 3.05(A) and the following:
1) Be equipped with automatic grade controls that reference the existing pavement elevations or independent grade references.

C. Profile Milling
Milling machines used for profile milling shall conform to 404-2.1 and the following:
1) Be equipped with a minimum 20-foot paving ski with spring loaded feet attached to the bottom at not more than 18-inch increments. The upper portion of the ski shall be one-piece and manufactured such that the ski does not flex or bend by more than 3/16 inch when supported off of the surface of the pavement by an attachment located at the ski's longitudinal center of gravity. The grade control system of the milling machine shall be referenced to the center of the ski.

D. Full-Depth Milling
Milling machines used for full-depth milling shall conform to 404-2.1 and the following:
1) Be capable of milling to a minimum depth of10 inches (25b mm) in a single pass. The Contractor shall provide smaller machines if required to cold mill areas that are inaccessible to larger machines.

E. Cold Milling To Specified Elevations
Milling to specified elevations is the controlled removal of a portion of the existing pavement and underlying base or subgrade material. The finished elevations and depth of removal shall be as shown on the Plans.

Independent grade references shall be those required to achieve the specified elevations shown on the Plans.

F. Profile Milling
Profile milling is the controlled removal of a portion of the existing pavement to a nominal depth using longitudinal grade controls to remove surface irregularities in the pavement and improve ride ability. The grade shall be as shown on the Plans.

During profile milling operations, the center of the ski shall be on a line coincident with the transverse centerline of the milling machine's cutting drum. A ski shall be attached to each side of the milling machine cutting drum during the first pass, and on one side of the milling machine on subsequent, adjacent passes with a joint matching grade control on the other side.

The resultant milled surface shall not deviate from the grade shown on the Plans, using a straightedge, by more than 1/4 inch at any point.

G. Full-Depth Milling
Full depth milling is the removal of the full depth of the existing pavement as shown on the Plans or specified in the Special Provisions. When full-depth milling is specified, the Contractor shall continuously control the depth of milling to stay no more than 1/2 inch below

the full depth of the existing pavement. In areas of resurfaced trenches, individual excavations or bore holes, the required depth of milling shall be the same as that of the adjacent pavement. The Contractor shall remove existing asphalt concrete overlay from gutters adjacent to any area specified to be cold milled, as directed by the Engineer.

H. Cold Milling Of Composite Pavement.
Composite pavement consists of underlying concrete pavement which has been overlaid with asphalt concrete pavement. The thickness of each existing pavement material shall be as shown on the Plans. The area and depth to be cold milled shall be as shown on the Plans.

I. Work Site Maintenance.
A motorized street sweeper shall follow within 50 feet of the cold milling machine unless otherwise approved by the Engineer.

J. Disposal Of Millings.
Unless otherwise specified, millings shall be considered the property of the Contractor and shall be disposed of off the Work site by the Contractor.

K. Traffic Signal Loop Detectors.
The Contractor shall not mill within 12 inches of any existing loop detectors that are shown to be protected in place on the Plans or in the Special Conditions. Traffic signal loop detectors that were shown to be protected in place but are damaged or removed shall be replaced at the Contractors expense.

L. Pavement Transitions.
Structures and vertical joints within the cold-milled areas that are transverse to through traffic shall be ramped with temporary asphalt concrete as shown on the Plans or specified in the Special Conditions. Ramps shall be constructed the same day as the existing pavement is cold milled and removed prior to placement of the permanent paving pavement.

3.07 UTILITIES

The Contractor shall assume every parcel is served by a service connection for each type of utility.

The Contractor shall contact the appropriate regional notification center and obtain an inquiry identification number at least two (2) working days, but not more than 14 days prior to commencing any excavation required for the Work. Caltrans and certain other agencies are not required to become a member of a regional notification center. The Contractor shall contact non-member agencies directly and request they locate and mark their subsurface installations. When any proposed excavation is within 10 feet of a "high priority subsurface installation" the Contractor shall coordinate with the operator.

Before starting the Work, the Contractor shall physically locate subsurface installations within 24 inches of any side of excavations required for the Work. The Contractor shall determine the horizontal and vertical location, alignment, depth, material type, and size of each subsurface installation. The Contractor shall provide the subsurface installation location data to the Engineer prior to beginning work.

The Contractor shall notify the Engineer in writing immediately after identifying potential physical conflicts between existing subsurface installations and the Work. The written notification shall include;

A. date of locating,
B. method of locating,
C. type, size, and material of subsurface installation,
D. horizontal location,

E. elevation (or depth from existing pavement or ground surface) of the top and bottom of the subsurface installation, and
F. presumed owner.

The Contractor shall complete excavation, backfill, and placement of temporary resurfacing on the same Day. Backfill shall conform to the applicable technical specification. Temporary resurfacing shall conform to applicable technical specification. Permanent resurfacing shall be placed within 10 Working Days unless otherwise specified in the Special Conditions or directed by the Engineer. Permanent resurfacing shall conform to applicable technical specification.

3.08 SIGNS, SIGN POSTS, AND SIGN FOUNDATIONS

Existing signs, sign posts, and sign foundations where shown on the plans shall be removed and disposed of. Holes, depressions and pits caused by the removal of signs, sign posts, and sign foundations shall be backfilled with Class 2 aggregate base material as provided in in the Technical Specification entitled “Trench Excavation and Backfill”, of these Technical Specifications unless otherwise noted on the plans or directed by the Engineer. Existing signs, sign posts, and sign foundations shall not be removed until replacement signs have been installed or until the existing signs are no longer required for the direction of public traffic, unless otherwise directed by the Engineer.

3.09 FENCE

Where shown on the plans, existing fences shall be removed and rebuilt to conform to the new construction work. Fences shall be rebuilt with the same or better materials and shall be painted to match the existing fence.

3.10 LANDSCAPING AND IRRIGATION

When a portion of a sprinkler system within the right-of-way must be removed, the remaining lines shall be capped. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.

Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed due to Contractor's operations; they shall be restored or replaced in as nearly the original condition and location as is reasonably possible. Lawns shall be reseeded and covered with suitable mulch.

The Contractor shall give reasonable notice to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, sprinklers, and other improvements, within the right-of-way which are designated for removal and would be destroyed because of the Work.

3.11 SURVEY MARKERS

Pursuant to Division 3, Chapter 15 of the Business and Professions Code, the Contractor shall not disturb survey monuments that "control the location of subdivisions, tracts, boundaries, roads, streets, or highways, or provide horizontal or vertical survey control" until they have been tied out by a Registered Land Surveyor or Registered Civil Engineer authorized to practice land surveying within the State of California.

The Contractor shall submit to the Engineer a minimum of 7 Days prior to the start of the Work a list of controlling survey monuments which may be disturbed. The Agency will:

A. Set survey points outside the affected work area that reference and locate each controlling survey monument that may be disturbed,
B. File a Corner Record or Record of Survey with the County Surveyor after setting the survey Points to be used for re-establishment of the disturbed controlling survey monuments, and File a Corner Record or Record of Survey with the County Surveyor after re-establishment of the disturbed controlling survey monuments.

1.00 SCOPE

This section covers trench excavation and backfill for utility trenches, structures and appurtenances.

2.00 MATERIALS

2.01 IMPORTED BEDDING MATERIAL shall be clean, washed sand or Class 2 aggregate base.

2.02 IMPORTED BACKFILL MATERIAL shall be Class 2 aggregate base.

2.03 AGGREGATE BASE shall conform to the specification titled “Aggregate Base.”

2.04 HOT MIX ASPHALT shall conform to the specification titled “Hot Mix Asphalt.”

2.05 CONCRETE for concrete collars shall be Class B concrete and concrete for thrust blocks and/or encasing pipe shall be Class C concrete in accordance with the specification titled “Concrete Work.”

2.06 SLURRY CEMENT BACKFILL shall consist of a fluid, workable mixture of commercial quality concrete sand, cement and water. Not less than 94 pounds of cement shall be used for each cubic yard of material produced. Cement shall be portland cement conforming to Section 90 of the State Standard Specifications, except that testing will not be required.

2.07 LEAN CONCRETE BACKFILL shall consist of a fluid, workable mixture of the following ingredients:

	Weights Per Cubic Yard (Saturated, Surface-Dry)	Yield, Cu. Ft.
ASTM C-150 / TYPE II CEMENT, LB	94	0.48
CONCRETE SAND, LB	1,500	8.84
3/8" BY #8 GRAVEL, LB	1,704	10.19
WATER, LB	100	1.60
TOTAL AIR, %	21.8 ± 3.0	5.88
TOTAL		27.00
WATER/CEMENT RATIO, LBS/LB		1.07
CONCRETE UNIT WEIGHT, PCF		125.90

The final mix design and mix consistency shall be subject to the approval of the City Engineer.

2.08 TEMPORARY ASPHALT PAVING shall be minor hot mix asphalt conforming to Section 39 of the State Standard Specifications.

3.00 EXCAVATION

3.01 GENERAL

The Contractor shall excavate whatever substance encountered to the lines and grades shown on the Plans. All material suitable for use as backfill shall be piled in an orderly manner a sufficient distance from the side of the trench to avoid overloading and to prevent sliding into the

trench. The Contractor shall do such grading as is necessary to prevent surface water from entering the excavation.

Except with the specific approval of the Engineer, no more than 200 feet of open trench shall be excavated in advance of laying the pipe. Not more than 50 feet of trench excavation shall remain unbackfilled at the end of each day's work. The remainder of the trench shall be backfilled, compacted, and opened to traffic. All operations shall be carried out in an orderly fashion. Backfilling, compacting, and cleanup work shall be accomplished as sections of the pipe installation are approved and traffic through the work shall be impeded or obstructed as little as possible.

Where it is necessary to cross fences, temporary gates or other barriers, or satisfactory obstructions shall be installed by the Contractor as required to keep livestock and/or household pets from entering or leaving the property. All cut fences shall be restored to original condition upon completion of backfilling of the trench.

Where it is necessary to cross irrigation or drainage ditches, the backfill in the bottom and banks of such ditches shall be carefully placed and compacted to avoid settlement. Shape of the banks and bottom shall be restored and left in good condition.

If explosives are used for excavation, the Contractor shall obtain the necessary permits and comply with all local regulations. The utility companies or agencies supplying either sewer service, water, electricity, telephone service, or gas shall be informed if blasting is to be done in the vicinity of their facilities.

3.02 WIDTH OF TRENCH

Except where otherwise specifically permitted, banks of trenches shall be vertical, and shall be of uniform width from top to bottom. Trenches shall be a minimum of 12 inches wider than the external diameter of the pipe. The maximum width of the trench, measured at the top of the pipe, shall not exceed the width allowed for various strengths of pipe as may be specified elsewhere in the applicable sections of these Standard Specifications.

If no maximum width is elsewhere specified, the width measured at the top of the pipe shall not exceed the external diameter of the pipe, exclusive of bells and collars, plus 24 inches.

3.03 STRIPPING OF TOPSOIL

Where the trench crosses cultivated, residential, or meadow land not in a roadway, the top 12 inches of soil shall be stripped and stockpiled separately from the balance of the excavated material so that later it may be placed in the top of the trench backfill.

3.04 BRACING OF TRENCHES

Where required to prevent caving of the trench, the Contractor shall furnish and install bracing and sheeting as necessary to protect the excavation and to meet safety regulations. If required by the Engineer, the Contractor shall install sheeting and bracing as required to permit the Engineer safe access to the trench for inspection of the work. However, this requirement does not relieve the Contractor of the responsibility for maintaining the trench to meet safety regulations.

3.05 DEPTH OF TRENCH

The bottom of the trench shall be carried to the lines and grades shown on the Plans with proper allowance for the thickness of the pipe and for the type of bedding specified. Any part of the trench excavated below the proper grade shall be corrected with approved bedding material compacted to 95 percent relative density, at the Contractor's expense.

3.06 APPURTENANCES

Excavations for valve vaults and other similar structures shall be large enough to provide proper working room. Any over-depth in excavation shall be corrected with concrete or other approved material.

3.07 REMOVAL OF WATER

The Contractor shall remove and dispose of all water entering the excavation. Disposal of water shall be done in a manner to prevent damage or nuisance to adjacent properties. Water removed from the excavation shall not be disposed of in storm drainage facilities.

Straw waddles, gravel bags, sediment traps, or other devices shall be provided to prevent silt and sediment from entering storm drainage facilities. Placement and maintenance of devices shall be in accordance with the plans, any Storm Water Pollution Prevention Plan (SWPPP) developed for the project, and as directed by the Engineer.

Sufficient pumping equipment shall be provided to maintain the trench in a dry condition during the bedding and initial backfilling of the pipe.

4.00 TYPES OF BEDDING

4.01 NATIVE BEDDING AND SHADING

Native materials shall not be used as pipe bedding or pipe shading.

4.02 IMPORTED BEDDING

Imported bedding material shall be installed in a layer the full width of the trench and of proper thickness to form the bed for the pipe. After the imported bedding has been placed and spread, it shall be compacted to proper grade to not less than 95% relative density.

4.03 CONCRETE ENCASEMENT

Shall be installed at the locations and in the manner shown on the Plans. The pipe shall be temporarily supported on masonry blocks. Supports shall be set accurately to grade with a minimum of two supports per joint of pipe. After the pipe has been laid and approved for covering, the pipe shall be bedded and encased in concrete as detailed on the Plans. Great care shall be taken not to float or shift the pipe during the concreting operation.

5.00 BACKFILLING

5.01 GENERAL

No backfilling shall be done until the installation to be covered has been inspected and approved for covering. Backfilling shall be carried out in an orderly fashion and, in general, shall be done as soon as approval has been given to cover the pipe. Compaction of the backfill shall proceed simultaneously with backfilling operations.

All excess backfill material shall be removed from within the right-of-way and disposed of by the Contractor. The location of the disposal site shall be the responsibility of the Contractor and shall be subject to the approval of the Engineer. Removal of excess material shall be done immediately following backfilling.

Where trenches cross city streets, backfilling shall be completed immediately following excavation. No trenches across streets shall remain open overnight. All crossings shall be backfilled, compacted, and open to traffic at the end of each day's work. Major road crossings shall be excavated and backfilled in half widths of the traveled way so that at least one-half of the roadway is open to controlled traffic at all times during the work.

5.02 BEDDING AND COVERING PIPE

The bed for the pipe shall be final-graded by hand to the line and grade to which the pipe is to be laid, making proper allowance for the thickness of the pipe. The bed shall be hand-raked ahead of the pipe laying operation to remove any stones or lumps which will interfere with smooth and proper bedding. Bell holes shall be hand-dug at the location of the joints and shall be of sufficient size to allow proper making of the joint and to prevent the collar or bell of the pipe from bearing on the bottom of the trench. After the pipe has been laid and approved for covering, backfill shall be placed evenly on both sides of the pipe the full width of the trench. This material shall be placed by hand in layers and each layer shall be compacted to 95% relative compaction by use of approved tampers. For pipe 10 inches in nominal diameter or less, the first layer shall be half the outside diameter in thickness, and shall be tamped by hand. The thickness of the next layer shall be half of the diameter of the pipe plus 12 inches. For pipe 12 inches and larger in nominal diameter, the backfill material shall be placed in layers not more than 8 inches thick. Particular care shall be taken to attain the required compaction in the material supporting the underside of the pipe. Compaction by jetting or ponding shall not be permitted.

5.03 TRENCH BACKFILL ABOVE THE PIPE COVER

In public roads, backfill and compaction shall be done in accordance with the terms of the City Improvement Standards. The following requirements are minimums and do not relieve the Contractor of the responsibility of complying with any more stringent requirements of the City Standards.

The trench shall be backfilled in layers with suitable imported material which may be placed by machine. Material shall be placed in 8-inch thick layers and compacted by machine.

Prior to commencing backfilling operations, the Contractor shall notify the Engineer of the method of compaction which he intends to use. No method will be approved until the Contractor has demonstrated, under actual field conditions, that such method will produce the degree of compaction required.

The trench backfill shall be compacted to a relative density of not less than 95 percent.

Immediately after backfilling, all excess material shall be removed and disposed of in an approved disposal area.

5.04 SLURRY CEMENT BACKFILL

Where shown on the Plans, and at locations approved by the Engineer, the trench shall be backfilled with slurry cement from the top of the pipe bedding envelope to the bottom of the trench resurfacing structural section.

Immediately after backfilling, all excess material shall be removed and disposed of in an approved disposal area.

6.00 TESTS

Where a degree of relative compaction is specified, compaction tests will be made in accordance with the Standard ASTM D 1557, Method C. All densities shall be expressed as a relative compaction in terms of the maximum density obtained in the laboratory by the foregoing standard procedure.

Field density tests shall be performed in accordance with ASTM D 2922, Direct Transmission Method, using the nuclear gauge, or ASTM D 1556, using the sand cone.

The Owner will pay for compaction tests to verify that the Contractor has met all compaction requirements. However, the cost of all failing tests required due to the Contractor's failure to meet the specifications shall be paid for by the Contractor.

7.00 PROTECTION OF PAVING

During the entire construction period, the Contractor shall protect existing pavement. Track-laying equipment shall be equipped with pavement pads when used on pavement. Any pavement damaged, cracked, or broken by the Contractor's operation shall be removed and replaced to at least the original condition. Damaged pavement shall be restored to the satisfaction of the Engineer.

8.00 REMOVAL AND REPLACEMENT OF PAVING AND BASE

8.01 GENERAL

Only such paving shall be removed as is necessary to excavate the trench and install the pipe. Cuts at utility boxes, vaults or structures shall be no larger than necessary to install the structure.

8.02 PLACING AGGREGATE BASE

Where base material is required, the aggregate base shall be placed and compacted in one even layer to the depth shown on the Plans, and extending the full width of the trench. Segregation shall be avoided and extra care shall be taken in compacting the base near the sides of the trench. Relative compaction shall be not less than 95 percent.

8.03 TEMPORARY PAVEMENT

Where weather conditions or time preclude placing permanent pavement, temporary pavement shall be installed. Temporary pavement 2 inches thick shall be placed and maintained wherever excavation is made through pavement, sidewalk or driveways. In sidewalk areas the temporary pavement shall be at least 1 inch thick; in all other areas it shall be at least 2 inches thick.

Temporary pavement shall be placed as soon as the condition of the backfill is suitable to receive it and shall remain in place until the condition of the backfill is suitable for permanent pavement. Temporary pavement shall be installed flush with the existing surface, maintained in a smooth and uniform condition, and removed prior to placing permanent pavement.

The temporary pavement may be furnished from stockpiles or directly from the plant, and may be laid cold. Prior to placing temporary pavement, the Contractor shall level and compact the backfill on which the pavement is to be placed. The grade of the backfill on which the pavement is to be placed shall provide the full thickness of temporary pavement specified. The temporary pavement shall be placed, rolled, maintained, removed, and disposed of by the Contractor.

8.04 PERMANENT PAVEMENT

Paving shall be replaced in accordance with these Specifications, the Public Works Improvement Standards, and the details shown on the Plans. Pavement shall be replaced in all streets and driveways as soon as possible after completion of backfilling. In no case shall any section of trench in public roads remain unpaved more than one week from the date that the excavation was made. Where trenches cross roadways, pavement shall be replaced the same day the excavation was made.

Unless otherwise specified, surface improvements damaged or removed as a result of the Contractor's operations shall be reconstructed by the Contractor to the same dimensions, except for the pavement thickness, and with the same type of materials. Trench and excavation pavement shall be 1 inch greater in thickness than existing pavement.

A. Subgrade for trench pavement shall conform to City standard details. Aggregate base, when encountered within the structural section area, shall be compacted to a minimum relative density of 95 percent and compacted in lifts in accordance with this specification. The thickness of aggregate base shall be equal to that existing adjacent to the excavation.

B. Preparation For Permanent Paving

Edges of existing paving shall be neatly cut along straight lines, and cut edges shall be vertical. All loose pieces or cracked sections of existing paving shall be removed. All vertical edges shall be coated with liquid asphalt-emulsion (tack coat). The tack coat shall conform to the specification titled "Hot Mix Asphalt". The tack coat when cured or cooled shall be of sufficient thickness to uniformly and completely cover the vertical surfaces of the existing asphalt concrete. Excess tack on the horizontal surface of the aggregate base or subgrade shall be spread uniformly over the surface and may require the application of a blotting sand to prevent bleed through. Areas that are not sufficiently coated shall have the tack re-applied. The Contractor shall ensure that the tack coat is not damaged during the placement of the asphalt concrete.

C. Placing Permanent Paving

The asphalt concrete shall be spread at a temperature suitable for workability and to a depth that will compact to the required thickness as shown on the Plans. No material shall be spread when the outside temperature is less than 45 degrees Fahrenheit and rising.
For trenches 8 feet or greater in width, the final lift of HMA shall be placed with a paving machine or a full width spreader box. When the total tonnage required for the final lift of HMA is greater than 110 tons, a paving machine shall be used.

For trench widths 3 feet or greater and less than 8 feet, the final lift shall be placed with a narrow paving machine or a spreader box when the total tonnage required for the final lift of HMA is greater than 17 tons.

For trenches less than 3 feet wide and individual excavations or bore holes having an area of less than 50 square feet, the final lift shall be placed in such a manner as to obtain the specified density and smoothness.

After spreading, the material shall be thoroughly compacted using steel wheel rollers and be free of irregularities. Pneumatic tire rollers or truck tires shall not be used to compact any of the lifts. Rolling equipment shall consist of power rollers equivalent to tandem rollers weighing not less than 7.5 tons.

Trenches of any width backfilled with CLSM or trench backfill slurry will not require aggregate base. HMA shall be replaced to the full-depth of existing asphalt concrete plus 1 inch.
The minimum compaction after rolling shall be 95 percent of the maximum density. Trenches less than 3 feet wide, individual excavations or bore holes having an area less than 50 square feet, and trenches of any width not parallel to the centerline of the street shall match the smoothness of the existing pavement, except the final pavement surface tolerances shall be 0 to plus 1/8 inch based on the existing pavement on either side of the excavation. Final pavement below the existing surface will not be accepted.

Finish courses with deviations exceeding the above requirements shall be removed and replaced. Removal shall be to a minimum depth of 1-1/2 inches for the full-width of the trench. The minimum length of removal along the trench shall extend 4 feet beyond the ends of the deviations, but in no case exceed the limit of the original excavation.

8.05 FOG SEAL

Hot mix asphalt shall be sealed with a fog seal coat in accordance with Section 37 of the State Standard Specifications. Fog seal coat shall be applied at a rate such that the original emulsion will be spread at a rate of 0.06 gallons per square yard.

9.00 CLEAN UP

The Contractor shall clean up and dispose of all trash, debris, and excess material, and shall remove his equipment from the site of the work as completed.

10.00 GUARANTEE

The Contractor shall guarantee the work against settlement for a period of one year.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

1.00 SCOPE

This section covers the removal and disposal of existing asphalt pavement, the excavation and disposal of roadway excavation materials, and the preparation of the roadway subgrade.

Roadway excavation includes the removal of all materials to the design subgrade elevation, based upon the design structural section and the design cross-slopes.

2.00 MATERIALS

None.

3.00 WORKMANSHIP

Paving and other materials within the roadway prism shall be completely removed from the site. Care shall be exercised in removal of all items to avoid damage to existing improvements including but not limited to existing curb and gutter, utility lines, and utility boxes.

All existing pavement shall be neatly cut along the limits as shown on the plans and as directed by the City Engineer.

Roadway excavation shall be performed in accordance with Section 19 of the State Standard Specifications and these Technical Specifications.

The roadway subgrade shall be scarified to a minimum depth of 0.5-feet below the design subgrade elevation, unless shown otherwise on the plans, moisture-conditioned, and compacted to the following densities:

A. Non-Cohesive Soils
   Compact to a minimum of 95 percent of the maximum density as determined by ASTM D 1557, Procedure C, for a minimum depth of 0.5 feet below subgrade.

B. Cohesive Soils
   Compact to a minimum of 92 percent of the maximum density as determined by ASTM D 1557, Procedure C, for a minimum depth of 0.5 feet below subgrade.

Field density tests shall be performed in accordance with ASTM D 2922, Direct Transmission Method, using the nuclear gauge, or ASTM D 1556, using the sand cone.

If unsuitable subgrade material is encountered, the Contractor shall remove the unsuitable material as directed by the Engineer at a negotiated unit price and replace with Class 2 aggregate base at the unit price bid in the Proposal.

1.00 SCOPE

This section covers the furnishing, placement and compaction of aggregate base material, complete.

2.00 MATERIALS

2.01 AGGREGATE BASE

Shall be Class 2, 3/4-inch maximum, conforming to the requirements of Section 26 of the State Standard Specifications.

3.00 WORKMANSHIP

Aggregate base material shall be spread, watered, compacted and finished in accordance with the requirements of Section 26 of the State Standard Specifications and as specified herein.

The maximum compacted thickness of any one layer shall not exceed 0.5-foot. The aggregate base shall be compacted to at least 95 percent of the maximum density, as determined by ASTM D 1557, Procedure C. Field density tests shall be performed in accordance with ASTM D 2922, Direct Transmission Method, using the nuclear gauge, or ASTM D 1556, using the sand cone.

1.00 SCOPE

This section covers the furnishing, placement and compaction of hot mix asphalt (HMA) paving material, complete.

2.00 MATERIALS

2.01 HOT MIX ASPHALT (HMA)

Shall be 1/2-inch maximum size, medium grading, Type A or B, conforming to the requirements of Section 39 of the State Standard Specifications.

2.02 ASPHALT BINDER

Shall be PG 64-10 conforming to the requirements of Section 92 of the State Standard Specifications.

2.03 PRIME COAT

Shall be SC-250 and conform to “Section 94” of the State Standard Specifications.

2.04 PAINT BINDER (TACK COAT)

Shall be an asphaltic emulsion, Grade SS1, and conform to “Section 94” of the State Standard Specifications.

3.00 WORKMANSHIP

Paint binder shall be applied to all vertical surfaces of existing pavement, curbs, gutters, construction joints and to pavement to be resurfaced. Before placing HMA, apply paint binder in one (1) application. Application rates and procedures shall conform to “Section 39” of the State Standard Specifications.

Prime coat shall be applied to all aggregate base surfaces to receive HMA. Apply at least 0.20 gallons of prime coat per square yard of designated area. Do not apply more prime coat than can be absorbed completely by the aggregate base in 24 hours. Before paving, prime coat must cure for 48 hours. Close traffic to areas receiving prime coat. Do not track prime coat onto pavement surfaces beyond the job site.

HMA shall be transported, placed, spread and compacted in conformance with the provisions of Section 39 of the State Standard Specifications. HMA shall be spread in one operation with a self-propelled spreader ready for compaction without further shaping. Hot mix asphalt shall be placed in maximum 0.25-foot-thick compacted layers.

Compaction shall be performed with three (3) self-propelled, reversible rollers, each with a separate operator, as follows:

A. One vibratory roller specifically designed to compact HMA. The roller must be capable of at least 2,500 vibrations per minute and must be equipped with amplitude and frequency controls. The roller's gross static weight must be at least 7.5 tons.
B. One oscillating type pneumatic-tired roller at least 4 feet wide. Pneumatic tires must be of equal size, diameter, type, and ply. The tires must be inflated to 60 psi minimum and maintained so that the air pressure does not vary more than 5 psi.
C. One steel-tired, 2-axle tandem roller. The roller's gross static weight must be at least 7.5 tons.

First coverage of breakdown compaction shall be completed before the surface temperature drops below 250 degrees F. Breakdown and intermediate compaction shall be completed before the surface temperature drops below 200 degrees F. Finish compaction shall be completed before the surface temperature drops below 150 degrees F.

HMA compaction coverage is the number of passes needed to cover the paving width. A pass is one (1) roller's movement parallel to the paving in either direction. Overlapping passes are part of the coverage being made and are not a subsequent coverage. Do not start a coverage until completing the prior coverage.

Start rolling at the lower edge and progress toward the highest part.

Perform breakdown compaction of each layer of HMA with three (3) coverages using a vibratory roller. The speed of the vibratory roller in miles per hour must not exceed the vibrations per minute divided by 1,000. If the thickness of the HMA layer is less than 0.08 foot, turn the vibrator off. The Engineer may order fewer coverages if the thickness of the HMA layer is less than 0.15 foot.

Perform intermediate compaction of each layer of HMA with three (3) coverages using a pneumatic-tired roller at a speed not exceeding 5 mph.

Perform finish compaction of HMA with one (1) coverage using a steel-tired roller.

Hot mix asphalt shall be finished level with, or not more than 0.02-foot above, existing gutters. In no case shall the finished hot mix asphalt be lower than the edge of the gutter.

At lines of conformance to existing paving the finish course shall be feather-edged to provide a smooth transition to existing paving.

A fog seal coat shall be applied to the finished surface of the hot mix asphalt. Paint binder, SS1, shall be applied to the surface of the pavement in conformance with the provisions of Section 37 of the State Standard Specifications. The application rate (residual asphalt) shall be 0.06 gallons per square yard. Provisions shall be made by the Contractor, to keep traffic from tracking the fresh fog seal until it has cured.

1.00 SCOPE

This heading covers concrete work, complete.

2.00 MATERIALS

2.01 PORTLAND CEMENT shall be Type II and conform to ASTM Specification C150. All cement shall be protected from moisture until used.

2.02 CONCRETE AGGREGATES

A. Concrete aggregate shall conform to ASTM Specification C33. The sieves used in Sieve Analysis shall be square mesh wire cloth. Both coarse and fine aggregate shall be tested for soundness by ASTM Method C88 when in the judgment of the Engineer such tests are necessary to determine the quality of the materials.

B. Fine aggregate shall consist of natural sand having hard, strong and durable particles. It shall not contain more than 2 percent by weight of clay, shale, schist, alkali, or other deleterious substances. The grading of fine aggregate shall range uniformly from coarse to fine.

C. Coarse aggregate shall consist of clean, hard, sound crushed rock or washed gravel. It shall not contain more than 2 percent by weight of clay, shale, schist, alkali, or other deleterious substances. The grading of coarse aggregate shall range uniformly from coarse to fine.

D. Storage fine and coarse aggregate shall be stored and measured separately. Aggregate shall be stored on the job so that various sizes do not become intermixed. They shall be protected from contamination with dust, dirt, or other foreign materials.

E. Moisture content of aggregate shall be such that no visible separation of moisture and aggregate will take place during transportation from the proportioning plant to the point of mixing. Aggregate containing excess moisture shall be stockpiled prior to use and sufficiently dried.

F. Variations in moisture content shall not exceed one percent of the weight of the aggregate in a saturated surface dry condition. Variations in specific gravity of any group of sizes shall not exceed one percent. Variations in grading of separate groups of sizes of aggregate shall not exceed 5 percent. Variations exceeding these maximums shall constitute cause for delaying the use of the materials until batch weights and mixing water can be adjusted.

G. Aggregate size the primary size of aggregate specified and used on any project shall be the maximum consistent with the dimensions and form of the section being placed, the location and spacing of the reinforcing bars, and with the method of compaction, but shall not be less than 3/4 inch.

2.03 WATER shall be clean and free of oil, acid, alkali, organic matter or other deleterious substances.

2.04 REINFORCING STEEL

A. Bars shall be of intermediate grade steel and shall conform to ASTM Specification A615. All bars shall be deformed and deformations shall conform to ASTM Specification A615.

B. Welded wire fabric or mesh shall conform to ASTM Specification A185.

2.05 ADMIXTURES shall be used only where specifically required or where written approval has been granted by the Engineer.

2.06 EXPANSION JOINT FILLER shall be of the preformed nonextruding type and shall conform to ASTM Specification D544, Type V, bituminous fibre, and shall be the full depth of the abutting concrete.

3.00 WORKMANSHIP

3.01 REINFORCING STEEL

A. Placement

Unless an exception is made in writing by the Engineer, the Contractor shall submit for approval detailed drawings showing bending and placing of all reinforcing steel and shall not begin work until the drawings have been approved by the Engineer.

Steel reinforcement shall be accurately placed and positively secured and supported by concrete blocks, metal chairs, spacers, or by metal hangers. The clear spacing between parallel bars shall not be less than 1.50 times the nominal diameter for round bars, but in no case shall the clear distance be less than 1.50 inches nor less than 1.33 times the maximum size aggregate. Reinforcing steel shall be in position before concreting is begun.

Steel shall not be bent nor straightened in a manner that will injure the materials. Kinked bars shall not be used. Heating of steel for bending shall not be permitted.

All steel dowels must be placed and securely anchored before concrete is poured.

Reinforcing shall not be placed in slabs and beams until after the concrete in the walls and columns has been placed, unless specifically indicated on drawings.

B. Splicing

In slabs, beams, and girders, splices at the points of maximum stress shall be avoided. Bars in horizontal members shall have a maximum lap at splices sufficient to develop the strength of the bars. Wherever possible, splices of adjacent bars shall be staggered. Unless stress governs, the splice of wire fabric shall be at least one mesh wide.

Spliced bars in walls may be either separated or wired together. Deformed bars shall be lapped 24 bar diameters.

C. Cleaning Reinforcement

Steel shall be cleaned of any oil, grease, rust, concrete or other deleterious substances before it is placed in the forms. Any deleterious substances that get on the steel after placing shall be removed before pouring concrete.

3.02 CONCRETE PROPORTIONING AND MIXING

A. Proportions

Amounts of cement and water and strength requirements shall be as follows:

Class of Concrete	Class A	Class B	Class C
Minimum cement per cubic yard concrete	564 lbs. (6 Sack)	470 lbs. (5 Sack)	395 lbs. (4.2 Sack)
Maximum total water per sack of cement including free moisture		54 Lbs.	62 Lbs.
Minimum compressive strength at 28 days	3,000 psi	2,500 psi	2,000 psi

The class of concrete used shall be specified on the drawings. However, if no class is shown, Class A concrete shall be used.

Cement shall be measured in the sack or weighed; broken sacks will not be allowed unless cement is batched by weight. Aggregate shall be proportioned by weight.

Proportions of fine and coarse aggregate shall be furnished by the Engineer or by an approved testing laboratory, and may be varied from time to time by the Engineer to produce a smooth, dense, workable mixture that will work readily into corners and angles without excessive spading or vibrating.

B. Amount Of Water And Slump Test
The amount of water required for the proper consistency of concrete shall be determined by means of the slump test, made in accordance with ASTM Method C143.

The amount of water given in the above table is a maximum. The maximum allowable slump shall be as follows:

Thin sections and columns	Not more than 5"
Heavy sections, footings & slabs	Not more than 3"
Concrete placed under water	Not more than 8" Not less than 6"
Pavements	Not more than 3"
Curbs, gutters, walks, alley aprons	Not more than 4"
Extruded curb and gutter	Not more than 2"
Manholes, drop inlets, catch basins	Not more than 5"
Concrete not otherwise specified	Not more than 5"

The amount of water may be varied in accordance with the dampness of the materials and the requirements of the workability of the aggregate within the limits of the slump tests given above.

C. Measuring Water
The equipment for measuring and supplying the water to the mixer shall be so constructed and arranged that the amount of water to be added to the mixture can be measured positively and that the predetermined quantity of water required can be discharged rapidly in one operation into the mixing drum. The equipment shall be designed so that water from the source of supply cannot enter the measuring tank while the water is being discharged from the measuring tank into the mixer. Tanks or other equipment for measuring and discharging water into the mixer shall be sufficiently accurate that the amount of water delivered to the mixer for any batch shall not vary more than one percent from the required quantity of water for any position of the mixer. The tanks or other equipment shall be arranged to permit checking the amount of water delivered by discharging into measured containers.

D. Job Mixing
The capacity of the mixer shall be adequate to handle one or more full sack batches. No split sack batches will be permitted, unless all materials are weighed. At no time shall the mixer be loaded beyond its capacity. The capacity of the mixer shall be considered to be the rated capacity as given in the manufacturer's catalog, provided that a quantity equal to the rated capacity can be thoroughly mixed in the prescribed time period and that there is no loss of

ingredients during the mixing. Each batch shall be mixed not less than 1.50 minutes after all ingredients are in the mixer and until the mixture is uniform and homogeneous. It shall be completely discharged. The peripheral speed of concrete mixing drums shall be approximately 200 feet per minute. The mixer shall be equipped with an automatic time lock on the discharge control arranged to start the time cycle on the stroke of the material skip or on the closing of the hopper gate.

E. Transit Mixing

Transit-mixed concrete shall be in accordance with ASTM C94 and be of not less than 10 minutes at a peripheral drum speed of approximately 200 feet per minute. Mixing shall be continued until discharge is complete. At least three minutes of the mixing period shall be at the job site. The transit mixer shall be equipped with water measuring devices consisting of either accurately calibrated water tanks or water meters. Transit-mixed concrete will be rejected if not placed within 1.50 hours after water is first added to the batch.
Should the Contractor elect to utilize transit mixing equipment he shall make advance arrangements to prevent delays in delivery and placing of the concrete. An interval of more than 45 minutes between any two consecutive batches or loads, or a delivery and placing rate of less than 8 cubic yards of concrete per hour, shall constitute cause for shutting down the work for the remainder of the day, and if so ordered by the Engineer, the Contractor shall make, at his own expense, a construction joint at the location and of the type directed by the Engineer in the concrete already placed.

F. Forms

Forms shall conform to the shape, lines and dimensions called for on the Plans and shall be substantial and mortar tight. All vertical surfaces shall be formed, except where specifically authorized to the contrary. Temporary openings at the bottom of the wall forms and temporary openings at the base of all columns and piers shall be provided as required for cleaning and to facilitate inspection.

Drip beads, feature grooves and other concrete details shall be carefully formed with surfaced material which shall be thoroughly coated with oil or other approved products before concrete is poured. Method of forming shall be selected for ease of stripping without damage to details. All exterior corners shall be chamfered 3/4 inch unless otherwise specifically shown.

Bolts or form clamps shall be of sufficient strength and number to prevent spreading of forms. They shall be of a type which can be entirely removed or cut back one inch below the finished surface of the concrete. All forms for outside surfaces shall be constructed with stiff wales at right angles to the studs and all form clamps shall extend through and fasten to such wales. Forms shall be so constructed that side forms where surface finishing is required can be removed without disturbing supporting forms.

Where woodwork comes into contact with concrete, proper anchors shall be provided. End studs of frame walls shall be bolted and dovetailed nailing blocks shall be provided for trim and other woodwork. Anchors in jambs of openings shall be spaced not more than two feet on centers.

Anchor bolts shall be positively positioned and anchored in the forms with templates and checked by the Engineer before concrete is poured.

If there is any question regarding the strength of forms, the recommendations of the manufacturer of the form ties shall be followed.

Non-supporting forms may be removed in 48 hours and supporting forms in not less than 21 days unless approval for earlier removal is granted by the Engineer. Forms shall be carefully removed so as not to endanger the structure or damage the surface.

G. Concrete Conveying And Depositing

Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent segregation or loss of material. Concrete shall not be deposited in a manner which shows segregation to occur, and shall be deposited as nearly as practicable in its final position to avoid segregation during rehandling.

No concrete which has partially hardened or been contaminated by foreign material shall be deposited on the work, nor shall retempered concrete be used. When concreting is started it shall be carried on as a continuous operation until the section is completed, maintaining the top surface level.

All concrete shall be compacted with mechanical vibrators in a manner satisfactory to the Engineer. At least two satisfactory vibrators shall be on the job during every pour and more if required by the Engineer. If it is deemed necessary by the Engineer, surfaces that are to be exposed shall be spaded and hammered to obtain a good surface. Concrete shall not be permitted to fall from a height greater than 6 feet without the use of adjustable length pipes or "elephant trunks." The use of chutes in conveying and depositing concrete will be allowed only at the discretion of the Engineer, and wherever they are used, they shall be laid at an inclination that will permit the flow of concrete of the required consistency. Where necessary to prevent separation, chutes shall be provided with baffle boards or a reversed section at the outlets. Columns shall be poured through pipes of adjustable length and not less than 6 inches in diameter. The use of additional water in mixing the concrete to promote free flow in chutes of low inclination will not be allowed.

For columns and walls, concrete shall be allowed to set at least 4 hours before caps, girders, floor slabs, or other connecting members are poured so that the column may obtain its shrinkage before the superstructure is placed.

Where it is necessary to deposit concrete under water, concrete shall be placed by use of a tremie tube. Care shall be exercised to see that the lower end of the tremie tube does not rise above the surface of the concrete during the pour, to avoid contamination with water. Depositing of concrete under water shall be permitted only with the approval of the Engineer, where it is not possible to de-water.

H. Cold Weather Work

Concrete shall not be mixed nor placed while the atmospheric temperature is at or below 35° Fahrenheit unless means are employed to heat the aggregate and water, and satisfactory provisions have been made for protecting the work. All concrete shall be effectively protected from frost action for a period of five days after placing and will not be accepted before the expiration of a thirty-day period during which the temperature of the concrete does not fall below 40° Fahrenheit.

The concrete shall be maintained at a temperature of at least 50° Fahrenheit for not less than 72 hours after placing or until it has thoroughly hardened.

The temperature of the concrete as it leaves the mixer shall not be less than 50° Fahrenheit, nor more than 120° Fahrenheit. Upon written notice from the Engineer, all concrete which may have become damaged by frost action shall be replaced by the Contractor at his own expense.

I. Construction Joints And Expansion Joints

Construction joints in structural concrete shall be level or vertical and shall be of the type and location as the Engineer directs or as shown on the Plans. Joints not indicated on the Plans shall be so made and located as to least impair the strength of the structure and shall conform to the typical details.

The horizontal surface of all construction joints shall be cleaned and roughened by removing the entire surface and exposing clean aggregate solidly embedded in mortar matrix in accordance with the following procedure. The contact surface must be thoroughly cleaned by chipping or sand blasting the entire surface not earlier than 5 days after initial pour or by an approved method that will assure equal bond such as a thorough hose washing of the surface not less than 2 nor more than 4 hours after the concrete is placed (depending on setting time). All wash and chalklike material shall be entirely cleaned from the surface.

In the event that the contact surface becomes coated with earth, sawdust, etc., after being cleaned, the entire surface so coated shall be recleaned.

All construction joints shall be slushed with neat cement grout immediately ahead of the pour.

Water stops shall be installed in construction joints where shown on the Plans. Where no construction joint is shown on the Plans, but is permitted by the Engineer, water stops shall be installed as directed by the Engineer.

Unreinforced slabs, walks, curbs, etc., shall have construction joints at not to exceed 12-foot centers and expansion joints at not to exceed 48-foot centers. Reinforced slabs, walks, curbs, etc., shall have construction joints at not to exceed 20-foot centers and expansion joints at 40-foot centers. Expansion joint material shall be placed along all walls and around each column and projection.

4.00 CONCRETE FINISHING

4.01 STRUCTURES

Forms shall be removed as soon as permissible and, immediately thereafter, tie rod holes, rock pockets, and other defects shall be chipped to expose sound aggregate and mortar and then shall be dashed with neat cement paste and dry packed with moistened 1 to 2 cement sand mortar thoroughly tamped in.

After patches have thoroughly hardened, surfaces that are to be exposed or painted in the finished structures shall be rubbed mechanically or by hand with carborundum stones to eliminate traces of forms and patch work. A brush coat of thin cement mortar consisting of one part cement and one part sand that will pass a No. 16 screen or at the option of the Engineer a neat cement wash shall be applied if necessary to give a uniform appearance. In either case, five percent calcium chloride shall be used. When the cement film has set sufficiently so that the sand particles and cement will not draw out of surface pin holes, but before final set has taken place, the entire surface shall be rubbed with fine carborundum stones (No. 25 to No. 30) until a smooth, even surface of even texture, color and appearance is obtained. No greater amount of mortar shall be applied in advance of rubbing than can be completely rubbed before final setting takes place. Immediately following the rubbing process, the finished surface shall be thoroughly washed with water.

4.02 SLABS, WALKS, STEPS, CURBS and GUTTERS

After concrete for slabs or sidewalks has been placed between the side forms, a strikeoff guided by the side forms shall be used to bring the surface to the proper section to be compacted. After screeding off, the surface shall be tamped with a heavy tamper consisting of a grid of metal bars until a layer of mortar not less than 3/8-inch thick has been brought to the surface.

The surface shall be rescreeded to a true surface, worked with a wood float as settling progresses and troweled with a steel trowel a sufficient number of times to produce a smooth, hard finish. After troweling, the surface shall be broomed if required. Care shall be taken to obtain a true surface on slabs, especially at walls and joints. Slab surfaces shall not vary more than 1/4-inch at any point from an 8-foot straight edge. The use of topping or dusting with dry

cement and sand shall not be permitted unless it is desired to apply an integral color. No more slabs shall be poured in one day than can be finished to a satisfactory surface.

If colored slabs are called for in the Plans, the finish shall be as specified except that the coloring shall be applied in the finished process in strict accordance with the Manufacturer's directions. Treads of steps and stairs shall be worked with a wood float to an even surface, troweled to a smooth surface with a steel trowel and given a light brush finish. Use of topping or dry cement and sand will not be permitted. Edges and corners shall be rounded and the tread shall be scored with not less than four grooves the length of all treads near the edge. Forms on risers and other exposed vertical surfaces shall be removed not more than six hours after concrete has been placed. Risers and vertical surfaces shall be brushed with grout and troweled smooth or finished as directed by the Engineer.

Curbs and gutters shall be screeded to true cross section and grade. The screed shall be operated parallel to the line of the curb. The surface shall then be worked with a wood float as setting progresses, troweled smooth and given a fine brush finish parallel to the line of the curb. Corners shall be rounded. The forms on the face of the curb shall be removed not more than 6 hours after concrete has been placed. The face shall be brushed with grout, troweled smooth and brushed to match the rest of the curb. The face of the finished curb shall be true and straight and the top surface of the curb and gutter shall be of uniform height and free from irregularities. The surface shall not vary more than 1/8-inch from the edge of a 10-foot straight edge except at grade changes and curves.

4.03 CURING

All concrete shall be protected from injury and shall be kept continuously wet for a period of ten days after pouring. The use of curing compounds will not be permitted without the approval of the Engineer.

Concrete slabs and walks shall be covered with "Sisal-Kraft" paper, sand, or sawdust as soon as they are hard enough to walk on and shall be kept continuously wet for ten days after pouring. Care shall be taken to prevent exposed slabs from becoming stained.

5.00 TESTS

During progress of the work, compression tests shall be made at the discretion of the Engineer of samples of the concrete using the molded cylinder method. Materials for the samples will be furnished at the expense of the Contractor. Testing will be done by the Owner or authorized laboratory at the expense of the Owner.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

1.00 SCOPE

This heading covers the furnishing and placement of prime coat and paint binder, complete.

2.00 MATERIALS

2.01 PRIME COAT shall be grade SC-250 liquid asphalt conforming to the requirements of Section 93 of the State Standard Specifications.

2.02 TACK COAT shall be an asphaltic emulsion, Type and Grade SS1, conforming to the requirements of Section 94 of the State Standard Specifications.

3.00 WORKMANSHIP

Tack coat shall be applied to all vertical surfaces of existing pavement, curbs, gutters, construction joints and to pavement to be resurfaced. Application shall be in conformance with the provisions of Section 39 of the State Standard Specifications and shall be applied at the rate of not less than 0.10 gallons per square yard. Tack coat may be omitted between layers of new hot mix asphalt during the same work shift if no dust, dirt, or extraneous material is present and the surface temperature is at least 140 degrees F.

Prime coat shall be applied to all aggregate base surfaces to receive hot mix asphalt concrete. Application shall be in conformance with the provisions of Section 39 of the State Standard Specifications and shall be applied at the rate of not less than 0.20 gallons per square yard. Do not apply more prime coat than can be absorbed completely by the aggregate base in 24 hours. Before paving, prime coat must cure for 48 hours. Close traffic to areas receiving prime coat. Do not track prime coat onto pavements surfaces beyond the job site.

Fog seal coat shall be applied to the finished surface of the hot mix asphalt concrete. Tack coat, SS1, shall be applied to the surface of the pavement in conformance with the provisions of Section 37 of the State Standard Specifications. The application rate shall be 0.10 gallons per square yard. Provisions shall be made by the Contractor, to keep traffic from "tracking" the fresh fog seal until it has cured.

1.00 SCOPE

This section consists of adjusting existing utility frames and covers to grade.

Adjust frames and covers of existing structures, boxes, vaults or other facilities to grade in conformance with Section 15, "Existing Facilities," of the State Standard Specifications and these Technical Specifications.

2.00 MATERIALS

2.01 CONCRETE for collars shall be Class A and conform to the Technical Specification “Concrete Work”.

2.02 REINFORCING STEEL for collars shall conform to the Technical Specification “Concrete Work”.

2.03 HOT MIX ASPHALT (HMA) shall conform to the Technical Specification “Hot Mix Asphalt”.

2.04 In the event that existing frames or covers are damaged they shall be replaced with one of the following:

A. Manhole frame and cover shall be South Bay Foundry SBF 1900 BPH, Phoenix Iron Works P-1090 or approved equal. Cover shall be marked “Storm Drain” or “Sanitary Sewer”.

B. Manhole frame and cover (bolt down) shall be South Bay Foundry SBF 1900 BS, Phoenix Iron Works P-1002 or approved equal. Cover shall be marked “Storm Drain” or “Sanitary Sewer”.

2.05 PRECAST GRADE RINGS shall conform to ASTM C-478.

2.06 SEWER CLEANOUT FRAME AND COVER shall be South Bay Foundry SBF 1249, Phoenix Iron Works P-7004 or approved equal.

2.07 VALVE BOX COVER shall be Brooks Products 3-RT, Christy G5 or approved equal.

3.00 WORKMANSHIP

Lower covers of existing facilities before cold planing, placing or replacing HMA surfacing. Temporarily fill utility depressions with HMA before opening the lane to public traffic.

Contractor shall place temporary reference marks, as needed, to identify locations of utilities that will be raised to finish grade after HMA has been placed.

After completion of paving activities, adjust utility frames and covers within the HMA surface to grade as shown on the plans. HMA pavement shall be neatly cut to a smooth vertical edge in a true circle to provide a uniform edge for the new concrete collar. The layout and dimensions of concrete collars shall conform to City Standards.

Covers that have previously been paved over and not raised shall be located as accurately as possible by the Contractor prior to pavement removal. The edges of the facility shall be carefully exposed prior to removing pavement for the concrete collar.

1.00 SCOPE

This section covers the installation, maintenance, and removal of water pollution control items, complete.

2.00 MATERIALS

2.01 FIBER ROLLS shall consist of wood excelsior, rice or wheat straw, or coconut fiber that is rolled or bound into a tight tubular roll.

2.02 SILT FENCE shall be woven polypropylene with a minimum width of 36 inches and a minimum tensile strength of 100 pounds. The fabric shall conform to ASTM D4632 and shall have an integral reinforcement layer. The reinforcement layer shall be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric shall be between 0.1 sec^{-1} and 0.15 sec^{-1} in conformance with ASTM D4491.

2.03 CRUSHED AGGREGATE shall be a minimum of 3 inches and maximum of 6 inches in size conforming with Section 72-2 of the State Standard Specifications.

2.04 TEMPORARY ENTRANCE FABRIC shall conform with Section 96 of the State Standard Specifications and be woven Type B or non-woven Type B.

2.05 GRAVEL BAGS shall consist of the following items:

A bag that is woven polypropylene, polyethylene or polyamide fabric, minimum unit weight 4 ounces per square yard, mullen burst strength exceeding 300 psi in conformance with ASTM D3786, and ultraviolet stability exceeding 70 percent in conformance with the requirements in ASTM D4355. The use of burlap is not acceptable. Each bag shall have a length of 18 inches, width of 12 inches, thickness of 3 inches, and mass of approximately 33 pounds. Alternative bag sizes shall be approved by the Engineer.

Fill material shall be non-cohesive, Class 1 or Class 2 permeable material free from clay and deleterious material, conforming to the Section 68 of the State Standard Specifications. The requirements for the Durability Index and Sand Equivalent do not apply. Fill material is subject to approval by the Engineer.

2.06 WOOD STAKES shall be untreated fir, redwood, cedar, or pine and cut from sound timber. Stakes shall be straight and free of loose or unsound knots and other defects which would render stakes unfit for use and shall be pointed on the end to be driven into the ground.

2.07 STAPLES used to fasten silt fence material to stakes shall be not less than 1.75 inches long and shall be fabricated from 0.06 inch or heavier wire. The wire used to fasten the tops of stakes together when joining two sections of fence shall be 0.12 inches or heavier wire. Galvanizing of the fastening wire is not required.

2.08 STRAW shall conform with Section 21 of the State Standard Specifications.

3.00 GENERAL

3.01 DEFINITIONS

A. Active Areas are construction areas where soil-disturbing activities have already occurred and continue to occur or will occur during the ensuing 21 days.

B. BMPs are Best Management Practices.

C. Non-Active Areas are construction areas (formerly active areas) that will be idle for at least 21 days.

D. Disturbed Soil Areas (DSAs) are areas of exposed, erodible soil that are within the construction limits and that result from construction activities.

E. Rainy Season is defined as October 15th through April 15th.

F. Sediment Control Measures are intended to complement and enhance the soil stabilization measures and reduce sediment discharge from construction areas. Sediment controls are designed to intercept and settle out soil particle that have been detached and transported by the force of water.

G. Soil Stabilization Measures consist of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Soil stabilization BMPs protect the soil surface by covering and/or binding soil particles.

3.02 WATER POLLUTION CONTROL IMPLEMENTATION

Water pollution control measures, or BMPs, shall be implemented on a year-round basis at an appropriate level to minimize or prevent soil erosion and sediment discharges from leaving the construction site and/or entering a stormwater drainage system or receiving water. BMPs shall consist of an effective combination of both soil stabilization and sediment control measures.

Active DSAs, during the rainy season, shall include soil stabilization measures installed prior to all predicted rain events and sediment control measures installed at all times. Active DSAs, during the non-rainy season, shall include soil stabilization measures and sediment control measures installed prior to predicted rain events.

Non-active DSAs, during the rainy season shall include soil stabilization measures installed within 14 days of cessation of soil disturbing activities or 1 day prior to all predicted rain event, whichever occurs first and sediment control measures installed at all times. Non-active DSAs, during the non-rainy season, shall include soil stabilization measures and sediment control measures installed within 14 days of cessation of soil disturbing activities or 1 day prior to all predicted rain event, whichever occurs first.

3.03 INSPECTIONS

Shall be conducted by the Contractor at the following minimum frequencies:

A. Prior to a forecast storm.
B. After a rain event that causes runoff from the construction site.
C. At 24-hour intervals during extended rain events.
D. Weekly during the rainy season.
E. Every 2 weeks during the non-rainy season.
F. At any other time(s) or intervals of time specified in these Technical Specifications.

3.04 REPORTING

The Contractor shall notify the Engineer immediately if a one of the following occurs:

A. Stormwater from a DSA is discharged to a storm drain system or waterway without treatment by an effective combination of temporary erosion and sediment control BMPs.
B. Non-stormwater is discharged to a storm drain system or waterway without treatment by an effective combination of temporary erosion and sediment control BMPs.
C. Stormwater is discharged to a waterway or storm drain system where the control measures (BMPs) have been overwhelmed or not properly maintained or installed.
D. A discharge of hazardous substances occurs.
E. Stormwater is discharged to a waterway or storm drain system containing hazardous substances.
F. A discharge occurs that may endanger health or the environment.

4.00 WORKMANSHIP

4.01 FIBER ROLLS

Fiber rolls shall be installed as required to intercept runoff, reduce runoff flow velocity, release runoff as sheet flow, and provide removal of sediment from runoff. Potential areas for fiber rolls include: along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow, below the toe of exposed and erodible slopes, down-slope of exposed soil areas, around temporary stockpiles, along the perimeter of the project. Fiber rolls may be used for drain inlet protection if they can be properly anchored and if approved by the Engineer.

Fiber rolls shall be installed along level contours and shall be spaced as follows:

Slope inclination of flatter than 10:1:	50 feet
Slope inclination of 4:1 to 10:1:	20 feet
Slope inclination of 4:1 to 2:1:	15 feet
Slope inclination of 2:1 or greater:	10 feet

Before placing fiber roll, remove obstructions including rocks, clods, and debris greater than 1 inch in diameter from the ground.

In locations to receive fiber rolls, excavate a concave 2 to 4 inch furrow and place excavated material on downhill side, place fiber roll within furrow ensuring there are no gaps under the fiber roll, drive wood stakes through the middle of the fiber roll 6 inches from the end of the roll and spaced at a maximum of 4 feet on center at all other locations. Stakes shall be driven into the soil so that the top of the stake is less than 2 inches above the top of the fiber roll. Wood stakes shall be 1 inch by 2 inch and a minimum length of 24 inches. If more than one fiber roll is placed in a row, the rolls shall be overlapped, not abutted, by a minimum of 18 inches.

Fiber rolls shall be inspected prior to forecast precipitation, following precipitation, and at least daily during prolonged rainfall. Split, torn, unraveling, or slumping fiber rolls shall be repaired or replaced. Fiber rolls shall be repaired or adjusted when rills and other evidence of concentrated runoff is visible. Sediment along fiber rolls shall be removed when the sediment accumulation reaches 1/3 of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the Engineer.

Fiber rolls may be left in place at the approval of the Engineer. If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

4.02 SILT FENCE

Silt fence shall be installed as required to intercept and slow the flow of sediment-laden sheet flow runoff. Potential areas for silt fence include: below the toe of exposed and erodible slopes, down-slope of exposed soil areas, around temporary stockpiles, and along the perimeter of the project.

The bottom of silt fence shall be keyed-in a minimum of 6 inches. Trenches shall not be excavated wider and deeper than necessary for proper installation of silt fence. Excavation of trenches shall be performed immediately before installation of silt fence. Silt fences shall be located at least 3 feet from the toe of slopes unless otherwise approved by the Engineer. Silt fence shall be installed along level contours. Wood stakes shall be 2 inch by 2 inch and a minimum length of 48 inches.

Silt fences shall be inspected prior to forecast precipitation, following precipitation, and at least daily during prolonged rainfall. Undercut, split, torn, slumping, or weathered silt fence shall be repaired or replaced. Sediment along silt fences shall be removed when sediment accumulation

reaches 1/3 of the barriers height. Removed sediment shall be incorporated in the project at locations designated by the Engineer. Silt fences that are damaged and become unsuitable for their intended purpose, as determined by the Engineer, shall be removed and replaced by the Contractor.

Once silt fences are not required for the project, the Contractor shall remove and dispose of the fences. The Contractor shall fill and compact holes and trenches, remove sediment accumulation, and grade fence alignment to blend with adjacent ground.

4.03 STABILIZED CONSTRUCTION ENTRANCE/EXIT

Prior to beginning construction, the Contractor shall locate a staging area. The location of the staging area shall be approved by the Engineer. The staging area shall be adequate to store materials, equipment, portable restroom facilities, concrete washout area, stockpiles, solid waste, and hazardous waste. If the approved staging area is unimproved, a stabilized construction entrance/exit (SCE) shall be installed and all access and egress shall be limited to this location. The location of the SCE shall be approved by the Engineer.

The SCE location shall be prepared by removing vegetation to ground level and clearing debris, grading ground to a uniform plane to prevent runoff from leaving the project, removing sharp objects that may damage fabric, and compacting the top 1 foot of soil to at least 90 percent relative compaction. The SCE shall be crushed aggregate over temporary entrance fabric that is a minimum 50 feet long, 20 feet wide, and 1 foot thick. As the SCE approaches the existing road the width shall be increased to accommodate vehicle turning movements. Overlap sides and end of fabric by at least 12 inches. Do not drive on fabric until crushed aggregate has been placed.

The SCE shall be inspected routinely for damage and to assess the effectiveness. The SCE shall be repaired if fabric is exposed, depressions in the SCE surface develop, or if aggregate is displaced. Remove crushed aggregate and separate and dispose of sediment as necessary and as directed by the Engineer.

Once the SCE is not required for the project, the Contractor shall remove and dispose of all materials and backfill and repair ground disturbance, including holes and depressions.

4.04 STRAW MULCH

Straw mulch shall be installed on disturbed soil areas as required prior to the onset of precipitation for soil stabilization. Potential areas for straw mulch are: exposed soil areas and exposed temporary stockpiles.

Straw mulch shall be applied by a straw blower or by hand. Straw shall be applied at a minimum rate of 4,000 pounds per acre. The mulch shall be anchored to the soil with a tackifier or by using mechanical methods (crimping, punch roller, track walking). If stabilizing emulsion is used, roughen soil by rolling with a crimping or punching-type roller or by track walking before placing mulch. The quantity of tackifier must be as recommended by the manufacturer. The ratio of water to fiber and tackifier in the mixture must be as recommended by the manufacturer. Straw mulch shall be evenly distributed on the soil surface. Straw mulch shall not be placed onto the traveled way, sidewalks, drainage channels, walls, fences, or existing vegetation. Straw mulch with tackifier shall not be applied during or immediately before precipitation, if water is standing on or moving across the soil surface, if the soil is frozen, or if the air temperature is below 40°F during the tackifier curing period unless allowed by the manufacturer and approved by the Engineer.

Straw mulch shall be inspected prior to forecast precipitation, following precipitation, and at least daily during prolonged rainfall. Straw mulch shall evenly cover DSAs without any exposed soil areas. Reapply straw mulch within 24 hours of discovering visible erosion. Straw mulch disturbed or displaced by the Contractor’s vehicles, equipment, or operations must be reapplied. The Contractor shall repair any damaged mulch areas and re-mulch any exposed areas.

Once straw mulch is not required for the project, the Contractor shall remove and dispose of all mulch. Straw mulch can be mechanically blended into the soil with track laying equipment, disking, or other approved method. Areas damaged during activities shall be re-graded per the Plans.

4.05 WIND EROSION CONTROL

All exposed soil areas shall be watered to prevent excessive amounts of dust. Watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is complete for the day. All clearing, grading, earth moving or excavation activities shall cease when winds exceed 25 miles per hour averaged over 1 hour. The area disturbed by demolition, clearing, grading, earth moving, or excavation operations shall be minimized at all times. Haul trucks shall be covered with tarpaulins or other effective covers at all times.

4.06 STREET SWEEPING AND VACUUMING

Visible sediment tracking shall be swept and/or vacuumed daily. Street sweeping must be done at paved roads at job site entrance and exit locations, and at paved areas within the job site that flow to storm drains. All paved areas shall be kept clear of sediment and debris.

4.07 VEHICLE AND EQUIPMENT CLEANING

Onsite vehicle and equipment washing or cleaning is discouraged. When vehicle/equipment washing/cleaning must occur onsite, the Contractor is required to notify and receive approval from the Engineer prior to each occurrence. Washing/cleaning areas shall be located away from storm drain inlets, drainage facilities, or watercourses.

4.08 VEHICLE AND EQUIPMENT FUELING

Onsite vehicle and equipment fueling shall only be used where it's impractical to send vehicles and equipment offsite for fueling. When fueling must occur onsite, the Contractor shall select and designate an area to be used, subject to approval of the Engineer. Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on fueling trucks and shall be disposed of properly after use. Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless fueling is performed over an impermeable surface in a dedicated fueling area. If a spill occurs, the Contractor shall notify the Engineer and immediately cleanup the spill and properly dispose of contaminated soil and cleanup materials.

Dedicated fueling areas shall be protected from stormwater run-on and runoff, and shall be located at least 50 feet from downstream drainage facilities. Fueling areas shall be protected with berms and/or dikes to contain spills. Fueling must be performed on level-grade areas. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips. Fueling operations shall not be left unattended. Fuel tanks shall not be "topped off". Vehicles and equipment shall be inspected on each day of use for leaks. Leaks shall be repaired immediately or problem vehicles or equipment shall be removed from the project site.

4.09 VEHICLE AND EQUIPMENT MAINTENANCE

Vehicle and equipment maintenance shall not occur within the project.

4.10 PAVING AND GRINDING OPERATIONS

Substances used to coat asphalt transport trucks, asphalt trucks, and asphalt spreading equipment shall not contain soap and shall be non-foaming and non-toxic. Plastic materials shall be placed under asphaltic concrete paving equipment while not in use. Sand, gravel, spilled asphalt, or other materials from paving operations shall not enter storm drainage facilities and shall be recovered by the Contractor and disposed of as directed by the Engineer.

Removed pavement material shall be collected and properly disposed of by the Contractor. Residue from portland cement concrete and asphalt concrete grinding/sawcutting operations shall be picked up by means of a vacuum system or sweeping and shall not be allowed to flow into the

storm drainage system. Pavement removal, pavement grinding and sawcutting operations shall not be conducted in the rain.

All thermoplastic striper and pre-heater equipment shutoff valves shall be inspected to ensure that they are working properly to avoid leaking. The pre-heater shall be filled carefully to prevent spilling of thermoplastic. The Contractor shall not pre-heat, transfer, or load thermoplastic near storm drain facilities or watercourses. Thermoplastic waste shall be properly disposed of by the Contractor.

4.11 STORM DRAIN INLET PROTECTION

Storm drain inlets and catch basins located downstream of construction activities shall have water pollution control devices installed to capture sediment. The number and locations of control devices shall be as directed by the Engineer.

Storm drain inlet protection shall consist of filter fabric placed on the grate with either a gravel bag barrier or combination of fiber rolls with gravel bags placed upstream of grate to filter stormwater and collect sediment.

Inspect all inlet protection devices before and after every rainfall event, and weekly during the rest of the rainy season. During extended rainfall events, inspect inlet protection devices at least once every 24 hours. Sediment shall be removed when the sediment accumulation reaches 3/4 of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the Engineer.

4.12 SPILL PREVENTION PLAN

The Contractor shall provide a Spill Prevention Plan to the Engineer for approval prior to beginning any work.

1.00 SCOPE

This section consists of providing a traffic control system.

2.00 MATERIALS

2.01 CONSTRUCTION AREA TRAFFIC CONTROL DEVICES

Flagging, signs, and temporary traffic control devices furnished, installed, maintained, and removed when no longer required shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and the 2014 Edition of the California Manual on Uniform Traffic Control Devices.

2.02 PORTABLE CHANGEABLE MESSAGE SIGNS

Shall comply with Section 12, "Portable Changeable Message Signs," of the Standard Specifications.

3.00 WORKMANSHIP

3.01 TRAFFIC CONTROL PLAN

The Contractor shall submit a traffic control plan conforming to the requirements of Part 6 of the 2014 Edition of the California Manual on Uniform Traffic Control Devices (CAMUTCD), which shall be approved by the Engineer prior to beginning work.

3.02 MAINTAINING TRAFFIC

Maintaining traffic shall conform to the provisions in Section 7, "Public Convenience," Section 7, "Public Safety," and Section 12, "Temporary Traffic Control," of the Standard Specifications and this Technical Specification.

Closure is defined as the closure of a traffic lane or lanes, including shoulder, within a single traffic control system.

Closures shall conform to the provisions in "Traffic Control System for Lane Closure" of this Technical Specification.

Work that interferes with public traffic shall be limited to the hours when lane closures are allowed, except for work required under Section 7, "Public Convenience," and Section 7, "Public Safety."

The full width of the traveled way shall be open for use by public traffic for Designated Legal Holidays and Special Days.

Designated Legal Holidays are: January 1st, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, and December 25th. When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday. When November 11th falls on a Saturday, the preceding Friday shall be a designated legal holiday.

Local authorities shall be notified at least 5 business days before work begins. The Contractor shall cooperate with local authorities to handle traffic through the work area and shall make arrangements to keep the work area clear of parked vehicles.

No work on local streets is allowed between 12:00 a.m. and 7:00 a.m. and between 6:00 p.m. and 12:00 a.m.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.

When work vehicles or equipment are parked within 6 feet of a traffic lane to perform active construction, the shoulder area shall be closed with fluorescent orange traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 25-foot intervals to a point not less than 25 feet past the last vehicle or piece of equipment. A minimum of 9 traffic cones or portable delineators shall be used for the taper. A W20-1 (ROAD WORK AHEAD) or W21-5b (RIGHT/LEFT SHOULDER CLOSED AHEAD) or C24(CA) (SHOULDER WORK AHEAD) sign shall be mounted on a crashworthy portable sign support with flags. The sign shall be placed where designated by the Engineer. The sign shall be a minimum of 48" x 48" in size. The Contractor shall immediately restore to the original position and location a traffic cone or delineator that is displaced or overturned, during the progress of work.

If minor deviations from the lane requirement charts are required, a written request shall be submitted to the Engineer at least 15 days before the proposed date of the closure. The Engineer may approve the deviations if there is no significant increase in the cost to the State and if the work can be expedited and better serve the public traffic.

3.03 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE

A traffic control system shall consist of closing traffic lanes in conformance with the provisions in Section 12, "Temporary Traffic Control," of the Standard Specifications, the CAMUTCD and this Technical Specification.

The provisions in this section will not relieve the Contractor of responsibility for providing additional devices or taking measures as may be necessary to comply with the provisions in Section 7, "Public Safety," of the Standard Specifications.

During traffic stripe operations and pavement marker placement operations using bituminous adhesive, traffic shall be controlled, at the option of the Contractor, with either stationary or moving lane closures. During other operations, traffic shall be controlled with stationary lane closures.

If components in the traffic control system are displaced or cease to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the components to the original condition or replace the components and shall restore the components to the original location.

3.04 STATIONARY LANE CLOSURE

When lane closures are made for work periods only, at the end of each work period, components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the Contractor so elects, the components may be stored at selected central locations, designated by the Engineer within the limits of the highway right of way.

Each vehicle used to place, maintain and remove components of a traffic control system on multilane highways shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining or removing the components. Vehicles equipped with Type II flashing arrow sign not involved in placing, maintaining or removing the components when operated within a stationary type lane closure shall only display the caution display mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion. The flashing arrow sign shown on the plans shall not be used on the vehicles which are doing the placing, maintaining and removing of components of a traffic control system and shall be in place before a lane closure requiring the sign's use is completed.

3.05 PORTABLE CHANGEABLE MESSAGE SIGNS

Portable Changeable Message Signs shall be deployed on State Route 32 to advise approaching drivers of the construction work at each alley. Approaching drivers must be able to read the entire

message for all phases at least twice at the posted speed limit before passing portable changeable message sign. You may use more than 1 portable changeable message sign to meet this requirement.

Only display the message shown on the plans or ordered by the Engineer or specified in this Technical Specification.

The text of the message displayed on portable changeable message sign must not scroll, or travel
horizontally or vertically across the face of the message panel.

Continuously repeat the entire message in no more than 2 phases of at least 3 seconds per phase.

If useable shoulder area is at least 15 feet wide, the displayed message on portable changeable message sign must be minimum 18-inch character height. If useable shoulder area is less than 15 feet wide, you may use a smaller message panel with minimum 12-inch character height to prevent encroachment in the traveled way.

Start displaying a road closed message on portable changeable message signs 5 days before closing each alley indicating the name of the road to be closed, the date of the closure and the times that the closure will begin and end.

Place portable changeable message sign in advance of the first warning sign for:
1. Each stationary lane closure

Place portable changeable message sign as far from the traveled way as practicable where it is legible to traffic and does not encroach on the traveled way. Place portable changeable sign before or at the crest of vertical roadway curvature where it is visible to approaching traffic. Avoid placing portable changeable message sign within or immediately after horizontal roadway curvature. Where possible, place portable changeable message sign behind guardrail or temporary railing (Type K).

Except where placed behind guardrail or temporary railing (Type K) use traffic control for shoulder closure to delineate portable changeable message sign.

Remove portable changeable message sign when not in use.

Contractor shall obtain an encroachment permit from Caltrans prior to placing portable changeable message signs within the State Route 32 right-of-way.

3.06 TEMPORARY PAVEMENT DELINEATION

Temporary pavement delineation shall be furnished, placed, maintained, and removed in conformance with the provisions in Section 12-3.01, "General," of the Standard Specifications and these special provisions. Nothing in these special provisions shall be construed as reducing the minimum standards specified in the CAMUTCD or as relieving the Contractor from the responsibilities specified in Section 7, "Public Safety," of the Standard Specifications.

When the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place before opening the traveled way to public traffic. Laneline or centerline pavement delineation shall be provided for traveled ways open to public traffic.

Work necessary, including required lines or markers, to establish the alignment of temporary pavement delineation shall be performed by the Contractor. Surfaces to receive application of paint or removable traffic tape temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement

delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with a new pattern of temporary pavement delineation or permanent pavement delineation, or as determined by the Engineer.

Temporary pavement markers and removable traffic tape that conflicts with a new traffic pattern or that is applied to the final layer of surfacing or existing pavement to remain in place shall be removed when no longer required for the direction of public traffic, as determined by the Engineer.

Temporary pavement delineation shall be used on or adjacent to lanes open to public traffic for a maximum of 14 days. Before the end of the 14 days, the permanent pavement delineation shall be placed. If the permanent pavement delineation is not placed within the 14 days, additional temporary pavement delineation shall be provided by the Contractor at no additional cost to the Department. The additional temporary pavement delineation to be provided shall be equivalent to the pattern specified for the permanent pavement delineation for the area, as determined by the Engineer.

Painted traffic stripe used for temporary delineation shall conform to Section 84-2, "Traffic Stripes and Pavement Markings," of the Standard Specifications, except for payment. The number of coats shall be, at the option of the Contractor, either one or two coats. The quantity of painted traffic stripe used for temporary delineation will not be included in the quantities of paint traffic stripe to be paid for.

3.07 TEMPORARY LANELINE AND CENTERLINE DELINEATION

When lanelines or centerlines are obliterated, the minimum laneline and centerline delineation to be provided shall be temporary pavement markers placed at longitudinal intervals of not more than 24 feet. The temporary pavement markers shall be the same color as the laneline or centerline the markers replace. Temporary pavement markers shall be, at the option of the Contractor, one of the temporary pavement markers listed for short term day/night use (14 days or less) or long term day/night use (6 months or less) in "Prequalified and Tested Signing and Delineation Materials" of these special provisions. Temporary pavement markers shall be placed in conformance with the manufacturer's instructions and shall be cemented to the surfacing with the adhesive recommended by the manufacturer, except epoxy adhesive shall not be used to place pavement markers in areas where removal of the markers will be required.

Temporary laneline or centerline delineation consisting entirely of temporary pavement markers shall be placed on longitudinal intervals of not more than 24 feet.

Full compensation for furnishing, placing, maintaining, and removing temporary pavement markers used for temporary laneline and centerline delineation and for providing equivalent patterns of permanent traffic lines for these areas when required shall be considered as included in the contract prices paid for the items of work that obliterated the laneline and centerline pavement delineation and no separate payment will be made therefor.

Full compensation for furnishing, placing, and maintaining temporary painted laneline and centerline pavement delineation shall be considered as included in the contract prices paid for the items of work that obliterated the laneline and centerline pavement delineation and no separate payment will be made therefor.

A. SCOPE

This section covers pipe and fittings for the water system, complete.

B. MATERIALS

Water pipe shall be polyvinyl-chloride (PVC), or ductile iron. All pipe shall be National Sanitation Foundation approved. All pipe and fittings shall conform to the following specifications:

POLYVINYL CHLORIDE (PVC) PIPE shall be SR (Schedule Rated) in accordance with ASTM D1785 for Schedule 40 and Schedule 80 pipe, and shall have a maximum SDR of 18 for "Class 150" applications and a maximum SDR of 14 for "Class 200" applications.

Pipe 4-inches and larger shall comply with AWWA Specification C900 and shall be of cast-iron-pipe-equivalent diameters. Pipe 3-inches and smaller in diameter shall have either rubber ring or solvent welded joints. Pipe 4-inches and larger in diameter shall have solid cross-section rubber ring joints in accordance with ASTM F477.

Fittings shall be PVC with the same pressure rating and hydrostatic test pressure as the pipe, or cast iron fittings with rubber gaskets sized for PVC pipe.

DUCTILE IRON PIPE: Pipe shall be Class 50 minimum ductile iron pipe conforming to AWWA Specification C151. Pipe shall be bell and spigot with "push-on" rubber gasket joints conforming to AWWA Specification C111, unless otherwise specified. Pipe shall be cement-mortar lined in conformance with AWWA Specification C104 and bituminous coated.

Fittings shall comply with AWWA Specification C110, and shall be cement-mortar lined and bituminous coated as specified above. Fittings shall be supplied with bell and/or spigot configurations compatible with that of the pipe.

MECHANICAL COUPLINGS, including flexible couplings and flanged coupling adaptors, shall be as manufactured by Smith-Blair, Baker, Dresser, or approved equal. All mechanical couplings shall have the longest standard sleeve length.

LOCATOR CONDUCTORS shall be No. 12 direct burial insulated solid copper wire. The locator shall be attached to the top of the pipeline centerline. Locators at valve boxes shall be installed in accordance with the Standard Details.

CONCRETE: Concrete for thrust blocks shall be Class C concrete and shall conform to the applicable portions of Sections 51 and 90 of the State Standard Specifications.

C. WORKMANSHIP

GENERAL: All materials shall be stored and handled in a manner that will not damage the material or it's coating, and will keep the materials clean and free of contamination. Before installation, each article shall be inspected and any damaged or contaminated material shall be discarded. Any damaged coating shall be repaired. The interior and ends of the pipe and appurtenances shall be clean. When it is necessary to cut pipe, such cuts shall be neatly made.

LAYING: All pipe shall be laid on a smooth bed, prepared in accordance with the provisions specified in the section of these Specifications entitled, TRENCH EXCAVATION AND BACKFILL. As soon as possible after the installation of the pipe, sufficient backfill material shall be placed on the pipe to protect it from temperature changes. The ends of the pipeline shall be closed with watertight caps or plugs at all times, except when laying pipe. The Contractor shall take all necessary precautions to prevent contaminated water, oil, grease, dirt, rodents, or other contaminants from entering the pipeline.

JOINTS: Bell and spigot or mechanical joints shall be made up in accordance with the instructions of the manufacturer. Adjoining pipe sections shall be level and both bell and spigot shall be clean. The bell shall be lubricated and the rubber gasket properly installed. The spigot shall then be inserted and seated in correct position by use of a joint puller or other approved method. After seating, each joint shall be checked with a feeler gauge to ensure that the gasket is not twisted and that the spigot is seated to the proper depth. Any improper joints shall be taken apart and correctly made. The maximum installed deflection at joints shall not exceed that recommended by the manufacturer.

FITTINGS: Joints of bell and spigot or mechanical joint fittings shall be made up and sealed as specified for pipe joints. Joints of flanged fittings shall be made up true and square so that there is no strain on the pipe or fitting. Bolts shall be tightened uniformly around the joint.

ANCHORAGE: Concrete thrust blocks shall be provided in accordance with the Standard Details included in the Plans. Size of thrust blocks shall be approved by the Engineer. Concrete shall be carefully placed against the valve or fitting to avoid covering or obstructing bolts or connectors at the valve or fitting joints.

FLEXIBLE COUPLINGS: Flexible couplings shall be installed in accordance with the recommendations of the manufacturer. The finished joint shall be watertight under the test pressure of the pipeline. After completion of the connection, any exposed steel shall be painted with two coats of coal tar epoxy.

CONNECTIONS TO EXISTING SYSTEM: Where the new water main connects to existing valves or pipelines, new reducers, flanged coupling adaptors or transition couplings shall be installed to accommodate the new pipeline, as required.

SEWER LATERAL CROSSINGS: Crossings of sewer service laterals shall be made above the sewer lateral wherever possible. Depth of cover over the water main may be reduced to 30 inches where such reduction is necessary to allow crossing above sewer service laterals.

If it is necessary to cross below sewer service laterals, the water main shall be installed with at least 12 inches of vertical separation from the sewer lateral and no joints in the water main shall be placed within nine feet, horizontally, of the sewer service lateral.

D. HYDROSTATIC TESTS

All parts of the entire pipeline installation shall be tested at a pressure of 125 PSI. Tests shall be made in the presence of the City Engineer or his representative.

Before the test, the pipeline shall be sufficiently anchored to withstand the test pressure. During the filling of the line with water, precautions shall be taken to prevent air pockets at high points. Water may be allowed to stand in the line for several hours prior to the test. During the test, which shall be conducted for the time period determined by the Engineer, but not less than 30 minutes, the leakage shall not exceed 5 gallons per 24 hours per thousand feet of pipe per inch of nominal diameter. Test sections shall be as short as valve configurations permit. If any valved section of pipe shows greater leakage than specified, the Contractor shall locate and repair the leaks and shall retest that section of line at no additional cost to the Owner.

The Contractor shall provide all labor, tools, and equipment required to perform the hydrostatic tests.

E. FLUSHING AND STERILIZATION OF COMPLETED MAINS

GENERAL: In general, the methods outlined in AWWA C601 entitled, "Disinfecting Water Mains," should be used as a guide in performing this operation where applicable.

FLUSHING COMPLETED LINES: Preliminary flushing of completed lines prior to chlorination shall be accomplished as thoroughly as possible with the water pressure and outlets available. The flushing shall be done after the pressure tests have been made.

CHLORINATION OF COMPLETED LINES: Before being placed in service, the entire line shall be chlorinated. Chlorine shall be applied by one of the following methods: Liquid chlorine, gas-water mixture, fed-chlorine gas, or calcium hypochlorite water mixture, unless another method (such as Chlorine "HTH" Tablets) is approved by the Engineer. The chlorinating agent shall be applied at the beginning of each section adjacent to the feeder connection and shall be injected through a corporation cock, hydrant, or other connection ensuring treatment of the entire line. Water shall be fed slowly into the line with chlorine applied in amounts to produce a dosage of 40-50 parts per million. Portions of the existing mains which have been connected to a new line or otherwise contaminated by construction shall be included in the system sterilized. A residual of not less than 10 parts per million after 24 hours shall be produced in all parts of the line. During the chlorination process, all valves shall be operated.

If disinfection by chlorine "HTH" tablets is permitted by the Engineer, the tablets shall be secured to the top of the pipe with an approved adhesive.

Following chlorination and prior to discharge, the water shall be dechlorinated such that a residual of not more than 0.02 parts per million (instantaneous maximum) of chlorine is present in any water discharged.

FINAL FLUSHING: After chlorination, the water shall be flushed from the lines at the extremities until the replacement water tests are equal, chemically and bacteriologically, to those of the permanent water supply.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

A. SCOPE

This section covers valves, fire hydrants and appurtenances for the water system, complete.

B. MATERIALS

GATE VALVES, 2-INCHES AND LARGER, shall be Resilient Seated Gate Valves conforming to AWWA C509. Valves shall be rated for a minimum working pressure of 150 psi, and shall have end fittings to conform to the pipe or fittings being connected. Valves shall be Waterous "Series 500", Mueller "Resilient Seat", Clow "Resilient Wedge", or approved equal. Valves shall open counter-clockwise and shall be furnished with two-inch square operating nuts when installed underground.

VALVE BOXES shall be provided for all valves placed underground and shall be similar and equal to Brooks Products, Inc., No. 3-RT or Christy G5, with 8-inch PVC pipe extension sleeve; cover to be marked "WATER".

FIRE HYDRANTS shall conform to AWWA C502 and the following requirements: They shall have two 2 2-inch hose nozzles and one 4 2-inch pumper nozzle. Outlets shall be threaded National Standard and shall be equipped with protective screw-caps, attached to the hydrant barrel with security chains. Outlets shall be individually valved, and operating valve parts shall be brass or bronze, with O-ring seals. The hydrants shall have a National Standard 1-inch (1 2-inch Flat to Point) pentagon operating nut turning counter-clockwise to open. The hydrant bury shall be 6-inch heavy cast iron pipe with a machined flange top and a mechanical joint bottom connection. A 6-inch x 6-inch flanged extension riser, with a break-off groove shall be installed below the hydrant. A 6-inch break-off check valve shall be installed below the break-off riser.

Fire hydrants shall be Long Beach Iron Works AANACAPA@ Model 615, or approved equal. Break-off check valves shall be Long Beach Iron Works Model LB400, or approved equal. Hydrants shall be painted one coat red primer and two finish coats of yellow paint. Each hydrant location shall be marked by a blue reflective pavement marker 6" from street centerline on the side nearest the fire hydrant.

C. WORKMANSHIP

GENERAL: All valves and appurtenances shall be thoroughly cleaned before installation and shall be installed in strict accordance with the manufacturer's recommendations.

SETTING VALVES AND APPURTENANCES: Valves shall be set plumb and inspected in opened and closed positions to insure that all parts are in working condition. All underground valves shall be provided with valve boxes or vaults. Valve boxes in the street shall be anchored in accordance with the City of Gridley Improvement Standards.


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

A. SCOPE

This section covers service connections and appurtenances for the water system, complete.

B. MATERIALS

All service pipe, fittings and appurtenances shall, when applicable, conform to National Sanitation Foundation (NSF) and American Water Works Association (AWWA) standards and shall comply with ANSI/NSF Standard 61 Annex G. All fittings shall conform to ANSI/AWWA Standard C800. All service pipe, fittings and appurtenances shall conform to the following specifications:

SERVICE PIPE shall conform to the City of Gridley Development Standard Detail number W4.

SERVICE SADDLES shall conform to the City of Gridley Development Standard Detail number W4.

CORPORATION STOPS shall conform to the City of Gridley Development Standard Detail number W4.

METER VALVES shall conform to the City of Gridley Development Standard Detail number W4.

VALVES, SMALLER THAN 2-INCH DIAMETER shall conform to the City of Gridley Development Standard Detail number W4.

LOCATOR CONDUCTORS shall conform to the City of Gridley Development Standard Detail number W2.

METERS shall conform to the City of Gridley Development Standard Detail number W4.

METER BOXES shall conform to the City of Gridley Development Standard Detail number W4.

C. WORKMANSHIP

The Contractor shall notify and coordinate all temporary water shutdowns with the City of Gridley Public Works Department at least 5 days in advance of proposed water line work. The Contractor shall be responsible for providing notification of water shutdowns to affected residents and business owners at least 48 hours in advance of water shutdowns.

Service connection installation shall be in accordance with City of Gridley Development Standard Detail W4. New service lines, fittings and meters shall not be less than 1-inch diameter. New service lines, fittings and meters for services requiring a residential fire protection system shall not be less than 1-inch diameter. For double services, the service line from the main to the service tee shall not be less than 2-inch diameter, the service lines and fittings from the service tee to the meters shall not be less than 1-inch diameter, and the meters shall not be less than 1-inch diameter.

Service taps shall be made on the water main opposite all service meter locations as shown on the plans. Saddles and corporation stops shall be installed and service pipe installed to the meter box location.

An angle meter ball valve shall be installed at each meter location. Residential services requiring a residential fire protection system shall have a Residential Fire Service Connection installed at the meter.

The meter and AMR equipment will be provided by the City, and installed by the Owner at the time a Certificate of Occupancy is issued.

A. SCOPE

This section covers pipe and fittings for storm drains, complete.

B. MATERIALS

REINFORCED CONCRETE PIPE shall be integral bell and spigot pipe conforming to ASTM Specification C76 Class 3 "A" Wall design, with rubber gasket joints conforming to ASTM Specification C443.

Fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with that of the pipe.

CORRUGATED HIGH DENSITY POLYETHYLENE PIPE shall conform to ASTM Specification D2321, D2412, F405 and F667, and Section 64 of the State Standard Specifications. Provision must be made for contraction and expansion at each joint with a neoprene gasket.

Fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with that of the pipe.

Minimum "pipe stiffness" at 5% deflection shall be in accordance with Section 64 of the State Standard Specifications for all sizes when tested in accordance with ASTM Test Method D2412.

Maximum pipe deflection shall not exceed 5% of the nominal manufacturer's average inside pipe diameter, and shall be determined as specified in the paragraph of this specification entitled, "PIPE DEFLECTION TESTING."

DUCTILE IRON PIPE: Pipe shall be Class 50 minimum ductile iron pipe conforming to AWWA Specification C151. Pipe shall be bell and spigot with "push-on" rubber gasket joints conforming to AWWA Specification C111, unless otherwise specified. Pipe shall be cement-mortar lined in conformance with AWWA Specification C104 and bituminous coated.

Fittings shall comply with AWWA Specification C110, and shall be cement-mortar lined and bituminous coated as specified above. Fittings shall be supplied with bell and/or spigot configurations compatible with that of the pipe.

C. WORKMANSHIP

PREPARATION OF THE TRENCH: The trench shall be prepared to receive the pipe as specified in the section of these specifications entitled, TRENCH EXCAVATION AND BACKFILL. The excavation and preparation of the trench shall be completed a sufficient distance in advance of the pipe laying to prevent dislodged material from entering the pipe.

INSTALLATION OF THE PIPE: Before lowering into the trench, the pipe shall be inspected for defects, and all cracked or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Handling of the pipe shall be accomplished in a manner that will not damage the pipe.

At manholes, pipe shall be installed so that there is a joint at or not more than two feet from the manhole wall.

After lowering the pipe into the trench, the bell or coupling end and spigot shall be cleaned of any foreign matter and a suitable lubricant applied to the joint. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not to buckle or disturb previously laid pipe.

Each joint shall be inspected to insure that it is properly made before backfilling. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made. **The laid pipe shall be true to line and grade and, when complete, shall have a smooth and uniform invert, within □0.02 foot vertically and □0.05 foot horizontally of the Plan alignment and grade.**

BACKFILLING THE TRENCH: After the laid pipe has been inspected and approved by the Engineer, the trench shall be backfilled as required under the section of these specifications entitled TRENCH EXCAVATION AND BACKFILL.

CLEANING STORM DRAINS: The Contractor shall furnish an inflatable rubber ball of a size that will inflate to fit snugly into the pipe. The ball may, at the option of the Contractor, be used without a tag line; or a rope or cord may be fastened to the ball to enable the Contractor to know and control its position at all times. The ball shall be placed in the last inlet or manhole on the pipe to be cleaned, and water shall be introduced behind it. The ball shall pass through the pipe with only the force of the water impelling it. All debris flushed out ahead of the ball shall be removed at the first inlet or manhole where its presence is noted. In the event cemented or wedged debris, or a damaged pipe shall stop the ball, the Contractor shall remove the obstruction.

D. PIPE DEFLECTION TESTING

If flexible pipe material is used, the pipe installation shall be tested for excessive deflection after all backfill and resurfacing materials have been placed and the line has been cleaned.

A mandrel having an outside diameter of 95% of the average manufactured internal diameter shall be pulled through the pipeline. If the mandrel does not pass freely through the pipe, the pipe shall be re-excavated, bedded and backfilled to adequately support the pipe and reduce the pipe deflection to 5% or less. The pipeline shall then be retested for deflection.

A. SCOPE

This section covers the construction of storm drain manholes, drop inlets, field inlets, junction drop inlets, and junction boxes complete.

Excavation and backfill at manholes shall conform to the requirements of the section entitled, TRENCH EXCAVATION AND BACKFILL.

B. MATERIALS

CAST-IN-PLACE CONCRETE: All materials used in cast-in-place concrete shall be Class B concrete in accordance with the applicable portions of Sections 51 and 90 of the State Standard Specifications.

PRECAST CONCRETE MANHOLE SECTIONS: All precast sections, including riser sections, cones, grade rings, and flat slab tops, shall conform to ASTM C478, and the dimensions shown on the Standard Details. Cones shall be eccentric. Grade rings shall be a standard product, manufactured particularly for use in manhole construction, sized to fit the cones on which they are to be placed, and the wall thickness shall not be less than that of the cones. Grade rings shall be not less than 2 inches, nor more than 6 inches high. All precast components shall have tongue and groove ends.

All manhole construction materials shall be approved in advance by the Engineer. Precast manhole bases, including connection details, will require specific advance approval. Neoprene "boots" are not acceptable for connections to the manhole bases.

MANHOLE FRAMES AND COVERS: Principal dimensions shall be as shown on the Standard Details. Iron castings shall conform to ASTM A48, Class 30. Each cover shall have the words "STORM DRAIN" cast into the top with 2-inch high letters. Castings shall be of consistently high quality, and shall be free of material and manufacturing defects. Following cleanup and final machining, an asphaltic paint or similar protective coating shall be applied.

Covers shall have at least one blind pick hole or recessed lifting lug. Horizontal bearing surfaces shall be machined to smooth, plane surfaces providing for full contact between the frame and cover.

The minimum weight of the frame shall be 135 pounds.

HEAVY DUTY COVERS: Unless otherwise indicated on the Plans, covers shall be designed for heavy traffic duty and conform to the following minimum requirements:

Cover weight shall be not less than 130 pounds. Strength of the cover shall be verified by load tests. Load testing of covers shall be done by a recognized independent testing laboratory. The cover shall support a minimum load of 40,000 pounds applied at the center of the cover over a maximum bearing area of 50 square inches. During testing, the cover shall be supported in the same way as it would be under normal service conditions.

LIGHT DUTY COVERS: Light duty covers shall be bolt-down, pressure manhole type, and shall be used only where specifically called for on the Plans. Covers shall be fastened to the frame with a minimum of four stainless steel bolts and shall be gasketed for a watertight seal. Cover weight shall not be less than 125 pounds.

DROP INLET FRAMES AND GRATES: Frame and grate assemblies for drop inlets and field inlets shall conform to the Standard Details.

JOINT SEALING COMPOUND COMPONENTS shall be RAM-NEK primer and joint sealing compound, KENT-SEAL primer and joint sealant, or approved equal.

MANHOLE WATER STOPS shall be installed on PVC or ABS sewer pipe with stainless steel bands to make a watertight seal between the pipe wall and the concrete manhole base.

MORTAR shall be proportioned with one part portland cement to two parts clean, well-graded sand which will pass a 1/8-inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: Hydrated lime, 10 percent; diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the surfaces. Mortar mixed for longer than 30 minutes shall not be used.

C. WORKMANSHIP

CAST-IN-PLACE CONCRETE: Concrete work shall conform to the Standard Details and the applicable portions of Sections 51 and 90 of the State Standard Specifications.

GENERAL CONSTRUCTION: Manholes and drop inlets shall be constructed only when the temperature is above 32□ Fahrenheit. All work shall be protected against freezing. Water shall be removed from the excavation and the excavation maintained "dry" during construction of the manhole and during the time required for the concrete or mortar to develop sufficient strength to resist rupture by groundwater pressure. All pipes connected to manholes or drop inlets shall have a joint within 2 feet of the structure wall.

The subgrade for the manhole or drop inlet base shall be carefully prepared to provide a firm support for the structure, and prevent future settlement of the manhole or drop inlet. Particular care shall be taken with deep manholes and structures located in wet locations.

Pipe invert grades at storm drain manholes and drop inlets shall be set as shown on the Plans with an acceptable tolerance of ± 0.02 foot.

A groove shaped to match the tongue of the first precast concrete riser section of the manhole or drop inlet shall be formed in the base slab. A circular metal form suited to the particular precast manhole manufacturer's joint shall be used to form the groove.

Except as specified herein, all precast manhole sections shall be set in joint sealing compound. Joint sealing compound components shall be applied in the field. One brush coat of primer shall be applied to the tongue and groove surfaces to be sealed, then the preformed strip of sealing compound shall be pressed firmly to the dry, clean, primed joint surface (groove portion). Precast sections shall be set evenly in a full bed of sealing compound. After the precast sections have been placed, the interior joint surface shall be trimmed smooth with a trowel or sharp tool to remove any excess joint compound projecting into the manhole.

Grade rings may be set with mortar if necessary for adjustment of the final frame elevation. Mortar joints shall not be more than 3/4-inch thick. Excess mortar shall be trimmed flush. The outside of each mortar joint shall be sealed with an approved bituminous sealing compound.

MANHOLE LEAKAGE TESTING: All manholes shall be tested for leakage by filling with water. Leakage shall not be greater than 0.15 gallons per day per square foot of interior surface area. All visible leaks shall be repaired.

INSTALLATION OF FRAMES AND COVERS NOT IN ROADWAYS: Frames and covers shall be joined to the top of the manhole or structure so that the cover or grate, when placed, will be at the proper elevation as shown on the Plans. The finish grade at the tops of manholes or field inlets will be established after the excavation has been backfilled and compacted to true subgrade.

INSTALLATION OF FRAMES AND COVERS IN ROADWAYS: Roadways are defined as the paved part of all roads, driveways, and parking areas, public or private, and in addition, the unpaved shoulders of public roads. Concrete collars shall be installed around frames of manholes in roadways. Installation shall be as shown on the Standard Details.

After completion of the manhole, all plugs shall be completely removed from the pipes and all loose material shall be removed from the manhole.

PIPE STUBS for future connections shall be not more than 2 feet long and shall be plugged with standard gasketed plugs.

A. SCOPE

This section covers pipe and fittings for sanitary sewers, complete.

B. MATERIALS

PVC GRAVITY SEWER PIPE shall be integral bell and spigot pipe conforming to ASTM Specification D3033 or D3034, with a maximum dimensional ratio (DR) of 35. Provision must be made for contraction and expansion at each joint with a rubber ring gasket conforming to ASTM F477 and/or ASTM D3212.

Fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with that of the pipe. As shown on the Plans, all laterals shall be either 4-inch or 6-inch diameter. All laterals shall be furnished with end caps which shall be adequately installed and/or braced to resist blowout or leakage during the watertightness tests.

Minimum "pipe stiffness" at 5% deflection shall be 46 psi for all sizes when tested in accordance with ASTM Test Method D2412.

Maximum pipe deflection shall not exceed 5% of the nominal manufacturer's average inside pipe diameter, and shall be determined as specified in the paragraph of this specification entitled, "PIPE DEFLECTION TESTING."

CONNECTIONS: Connections to pipe stubs of a different pipe material, if any, shall be made with a suitable connector. Connectors shall be equivalent to full-circle stainless steel repair clamps with appropriate adaptors, and must be approved by the Engineer prior to installation.

C. WORKMANSHIP

PREPARATION OF THE TRENCH: The trench shall be prepared to receive the pipe as specified in the section of these specifications entitled, TRENCH EXCAVATION AND BACKFILL. The excavation and preparation of the trench shall be completed a sufficient distance in advance of the pipe laying to prevent dislodged material from entering the pipe.

INSTALLATION OF THE PIPE: Before lowering into the trench, the pipe shall be inspected for defects, and all cracked or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Belled ends shall be laid upgrade. Handling of the pipe shall be accomplished in a manner that will not damage the pipe.

At manholes, pipe shall be installed so that there is a joint at or not more than two feet from the manhole wall.

After lowering the pipe into the trench, the bell or coupling end and spigot shall be cleaned of any foreign matter and a suitable lubricant applied to the joint. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not to buckle or disturb previously laid pipe.

Each joint shall be inspected to insure that it is properly made before backfilling. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made. The laid pipe shall be true to line and grade and, when complete, the sewer shall have a smooth and uniform invert, within □0.02 foot vertically and □0.05 foot horizontally of the Plan alignment and grade.

Connections to pipe stubs of a different pipe material, if any, shall be made with a suitable connector. Connectors shall be equivalent to full-circle stainless steel repair clamps with appropriate adaptors, and must be approved by the Engineer prior to installation.

WYES AND LATERALS: The exact location of new laterals, if any, will be set in the field by the Engineer. Wye branches shall be fully supported by firm material. Pipe and bends shall be installed to the same standards as specified above. Plugs shall be installed at the ends of all laterals, and be adequately braced to withstand the watertightness tests without being dislodged or leaking. Lateral locations shall be marked with a redwood stake as shown on the Plans.

PLUGGING EXISTING SEWER: Existing sewers which are shown on these plans as PLUG END OF EXISTING SEWER PIPE, shall be cut to a neat straight perpendicular end and be plugged watertight with concrete and must be approved by the Engineer prior to installation and backfilling and be subject to all requirements of these specifications.

BACKFILLING THE TRENCH: After the laid pipe has been inspected and approved by the Engineer, the trench shall be backfilled as required under the section of these specifications entitled TRENCH EXCAVATION AND BACKFILL.

CLEANING SEWERS: The pipe shall be cleaned in the following manner:

The Contractor shall furnish an inflatable rubber ball of a size that will inflate to fit snugly into the pipe. The ball may, at the option of the Contractor, be used without a tag line; or a rope or cord may be fastened to the ball to enable the Contractor to know and control its position at all times. The ball shall be placed in the last cleanout or manhole on the pipe to be cleaned, and water shall be introduced behind it. The ball shall pass through the pipe with only the force of the water impelling it. All debris flushed out ahead of the ball shall be removed at the first manhole where its presence is noted. In the event cemented or wedged debris, or a damaged pipe shall stop the ball, the Contractor shall remove the obstruction.

D. WATERTIGHTNESS TEST

GENERAL: Tests for watertightness shall be made by the Contractor in the presence of the Engineer. The Contractor shall furnish all labor, tools, materials, and equipment required to make the tests. No testing for final acceptance of pipe will be done until the trench has been fully backfilled and acceptably compacted to finish grade, or if the sewer is under pavement, to the pavement subgrade. All sections of pipe shall be tested, and tests shall be made from manhole to manhole. The sewer shall be complete with laterals installed, lateral plugs adequately braced, and trenches backfilled prior to testing.

Where leakage is in excess of the specified rate, the sewer shall immediately be uncovered and the amount of leakage reduced by the Contractor to a quantity within the specified rate before the sewer is accepted. In addition, the Contractor shall repair all visible leaks.

The Engineer will determine whether the test is to be by exfiltration or by infiltration. In most instances an exfiltration test will be required. Exfiltration tests shall be made with air except where the use of water is approved by the Engineer.

EXFILTRATION TEST:

AIR TESTING shall be done immediately following cleaning of the pipe. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 psi greater than the average back pressure of any groundwater that may submerge the pipe. At least 2 minutes shall be allowed for temperature stabilization.

The rate of air loss shall then be determined by measuring the time interval required for the internal pressure to decrease from 3.0 to 2.5 psi greater than the average back pressure of any groundwater that may submerge the pipe.

The pipeline shall be considered acceptable when tested at an average pressure of 2.75 psi greater than the average back pressure of any groundwater that may submerge the pipe, if the section under test does not lose air at a rate greater than 0.0010 cubic feet per minute per square foot of internal pipe surface. Test time in seconds = 36.3 times the internal diameter of the pipe in inches.

TESTING WITH WATER shall be done by filling the upper manhole with water to a depth of at least 3 feet over the top of the pipe or groundwater level, whichever is higher, with the end plugged at the lower manhole. The rate of leakage shall be determined by measuring the amount of water required to maintain the water level in the upper manhole. The test shall be maintained for a period of at least 2 hours. The Engineer may, at his discretion, require a longer test period. Leakage shall not be in excess of the rate of 20 gallons per inch of pipe diameter per 1,000 feet of pipe per day.

INFILTRATION TEST: In the event that sufficient groundwater is present, an infiltration test may be made. In this case, the pipe shall be tested for watertightness by installing plugs at the upper end of the pipe and at the lower end on the exit side of a manhole. The rate of leakage will be determined by periodically removing and measuring the water accumulated at the lower manhole. Leakage shall not be in excess of the rate specified for water testing by exfiltration.

E. PIPE DEFLECTION TESTING

If flexible pipe material is used, the pipe installation shall be tested for excessive deflection after all backfill and resurfacing materials have been placed and the line has been cleaned.

A mandrel having an outside diameter of 95% of the average manufactured internal diameter shall be pulled through the pipeline. If the mandrel does not pass freely through the pipe, the pipe shall be re-excavated, bedded and backfilled to adequately support the pipe and reduce the pipe deflection to 5% or less. The pipeline shall then be retested for both deflection and watertightness.

A. SCOPE

This section covers sewer lateral pipe and fittings, complete.

B. MATERIALS

PVC LATERAL SEWER PIPE shall be integral bell and spigot pipe conforming to ASTM Specification D 3034, having a maximum dimensional ratio (DR) of 35, with rubber gasket joints conforming to ASTM Specifications F 477 and D 3212.

Fittings and accessories shall be as manufactured and furnished by the pipe supplier, or approved equal, and have bell and/or spigot configurations compatible with that of the pipe.

CONNECTIONS: Connections to pipe stubs of a different pipe material, if any, shall be made with a suitable connector. Connectors shall be stainless steel repair clamps with appropriate adaptors, similar and equal to Romac Industries, Inc., SS1 Transition Clamp Coupling for Sewer.

C. WORKMANSHIP

PREPARATION OF THE TRENCH: The trench shall be prepared to receive the pipe as specified in Section 3, “Trench Excavation and Backfill”, of these Technical Specifications. The excavation and preparation of the trench shall be completed a sufficient distance in advance of the pipe laying to prevent dislodged material from entering the pipe.

INSTALLATION OF THE PIPE: Pipe installation shall be in strict accordance with the manufacturer's instructions and recommendations, the City of Gridley Development Standard Detail number SS1, the Plans and this Section.

Before lowering into the trench, the pipe shall be inspected for defects, and all cracked or broken pipe shall be discarded. The ends and interior of the pipe shall be clean. Handling of the pipe shall be accomplished in a manner that will not damage the pipe.

After lowering the pipe into the trench, the bell or coupling end and spigot shall be cleaned of any foreign matter and a suitable lubricant applied to the joint. The joint shall be made in the manner recommended by the manufacturer. Care shall be taken not to buckle or disturb previously laid pipe.

Each joint shall be inspected to insure that it is properly made before backfilling. Care shall be taken to prevent any dirt or foreign matter from entering the open end of the pipe. Where it is necessary to cut pipe, such cuts shall be neatly made. The laid pipe shall be true to line and grade and, when complete, the sewer lateral shall have a smooth and uniform invert, within ±0.02 foot vertically and ±0.05 foot horizontally of the Plan alignment and grade. Where it is necessary to cut pipe, such cuts shall be neatly made.

All connections shall be made in a method approved and inspected by the City of Gridley Department of Public Works. Connections to pipe stubs of a different pipe material, if any, shall be made with a suitable connector. Connectors shall be equivalent to full-circle stainless steel repair clamps with appropriate adaptors. Calder couplings shall not be used. Connectors shall be similar and equal to a 12-inch long Romac Style LSS sewer clamp coupling, and must be approved by the Owner prior to installation.

BACKFILLING THE TRENCH: After the laid pipe has been inspected and approved by the Owner, the trench shall be backfilled as required under Section 3, “Trench Excavation and Backfill”, of these Technical Specifications.

END CAPS: All laterals shall be furnished with end caps and the end marked with a redwood stake as shown on the City of Gridley Development Standard Detail number SS1.

A. SCOPE

This section covers the construction of sewer manholes and rodholes, complete.

Excavation and backfill at manholes shall conform to the requirements of the section entitled, TRENCH EXCAVATION AND BACKFILL.

B. MATERIALS

CAST-IN-PLACE CONCRETE: All materials used in cast-in-place concrete shall be Class B concrete in accordance with the applicable portions of Sections 51 and 90 of the State Standard Specifications.

PRECAST CONCRETE MANHOLE SECTIONS: All precast sections, including riser sections, cones, grade rings, and flat slab tops, shall conform to ASTM C478, and the dimensions shown on the Standard Details. Cones shall be eccentric. Grade rings shall be a standard product, manufactured particularly for use in manhole construction, sized to fit the cones on which they are to be placed, and the wall thickness shall not be less than that of the cones. Grade rings shall be not less than 2 inches, nor more than 6 inches high. All precast components shall have tongue and groove ends.

All manhole construction materials shall be approved in advance by the Engineer. Precast manhole bases, including connection details, will require specific advance approval. Neoprene "boots" are not acceptable for connections to the manhole bases.

MANHOLE FRAMES AND COVERS: Principal dimensions shall be as shown on the Standard Details. Iron castings shall conform to ASTM A48, Class 30. Each cover shall have the word "SEWER" cast into the top with 2-inch high letters. Castings shall be of consistently high quality, and shall be free of material and manufacturing defects. Following cleanup and final machining, an asphaltic paint or similar protective coating shall be applied.

Covers shall have at least one blind pick hole or recessed lifting lug. Horizontal bearing surfaces shall be machined to smooth, plane surfaces providing for full contact between the frame and cover.

The minimum weight of the frame shall be 135 pounds.

HEAVY DUTY COVERS: Unless otherwise indicated on the Plans, covers shall be designed for heavy traffic duty and conform to the following minimum requirements:

Cover weight shall be not less than 130 pounds. Strength of the cover shall be verified by load tests. Load testing of covers shall be done by a recognized independent testing laboratory. The cover shall support a minimum load of 40,000 pounds applied at the center of the cover over a maximum bearing area of 50 square inches. During testing, the cover shall be supported in the same way as it would be under normal service conditions.

LIGHT DUTY COVERS: Light duty covers shall be bolt-down, pressure manhole type, and shall be used only where specifically called for on the Plans. Covers shall be fastened to the frame with a minimum of four stainless steel bolts and shall be gasketed for a watertight seal. Cover weight shall not be less than 125 pounds.

RODHOLE FRAME AND COVER shall be cast iron, conforming to ASTM A48, Class 30. The frame and cover shall be similar and equal to Phoenix Iron Works PL1005-Q, or approved equal and shall have the word "SEWER" cast into the cover with prominent letters.

JOINT SEALING COMPOUND COMPONENTS shall be RAM-NEK primer and joint sealing compound, KENT-SEAL primer and joint sealant, or approved equal.

MANHOLE WATER STOPS shall be installed on PVC or ABS sewer pipe with stainless steel bands to make a watertight seal between the pipe wall and the concrete manhole base.

PIPE, BENDS AND FITTINGS used in rodholes and drop manhole construction as well as manhole stubs shall conform to the applicable sections of these Standard Specifications for sewer pipe.

MORTAR shall be proportioned with one part portland cement to two parts clean, well-graded sand which will pass a 1/8-inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: Hydrated lime, 10 percent; diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the surfaces. Mortar mixed for longer than 30 minutes shall not be used.

C. WORKMANSHIP

CAST-IN-PLACE CONCRETE: Concrete work shall conform to the Standard Details and the applicable portions of Sections 51 and 90 of the State Standard Specifications.

GENERAL CONSTRUCTION: Manholes shall be constructed only when the temperature is above 32□ Fahrenheit. All work shall be protected against freezing. Water shall be removed from the excavation and the excavation maintained "dry" during construction of the manhole and during the time required for the concrete or mortar to develop sufficient strength to resist rupture by groundwater pressure. All pipes connected to manholes shall have a joint within 2 feet of the manhole wall.

The subgrade for the manhole base shall be carefully prepared to provide a firm support for the manhole, and prevent future settlement of the manhole. Particular care shall be taken with deep manholes and manholes located in wet locations.

Manhole inverts shall be formed as shown on the Standard Details, either by laying pipe through and cutting out the top portion before completion of the base of the manhole, or by forming a "U" shaped channel in the concrete base slab. Cut edges of pipe laid through the manhole shall be fully covered by concrete when the manhole invert is complete. The finished invert shall be smooth and true to grade. No mortar or broken pieces of pipe shall be allowed to enter the sewer pipe.
A groove shaped to match the tongue of the first precast concrete riser section of the manhole shall be formed in the base slab. A circular metal form suited to the particular precast manhole manufacturer's joint shall be used to form the groove.

Except as specified herein, all precast manhole sections shall be set in joint sealing compound. Joint sealing compound components shall be applied in the field. One brush coat of primer shall be applied to the tongue and groove surfaces to be sealed, then the preformed strip of sealing compound shall be pressed firmly to the dry, clean, primed joint surface (groove portion). Precast sections shall be set evenly in a full bed of sealing compound. After the precast sections have been placed, the interior joint surface shall be trimmed smooth with a trowel or sharp tool to remove any excess joint compound projecting into the manhole.

Grade rings may be set with mortar if necessary for adjustment of the final cover elevation. Mortar joints shall not be more than 3/4-inch thick. Excess mortar shall be trimmed flush. The outside of each mortar joint shall be sealed with an approved bituminous sealing compound.

MANHOLE LEAKAGE TESTING: All manholes shall be tested for leakage by filling with water. Leakage shall not be greater than 0.15 gallons per day per square foot of interior surface area. All visible leaks shall be repaired.

INSTALLATION OF FRAMES AND COVERS NOT IN ROADWAYS: Frames and covers shall be joined to the top of the manhole or structure so that the cover, when placed, will be at the proper

elevation and so that no ground or surface water may enter the manhole or structure. The finish grade at the tops of manholes will be established after the excavation has been backfilled and compacted to true subgrade.

INSTALLATION OF FRAMES AND COVERS IN ROADWAYS: Roadways are defined as the paved part of all roads, driveways, and parking areas, public or private, and in addition, the unpaved shoulders of public roads. Concrete collars shall be installed around frames of manholes in roadways. Installation shall be as shown on the Standard Details. Portland cement concrete shall be primed with an asphalt emulsion before it is overlaid with asphalt concrete.

After completion of the manhole, all plugs shall be completely removed from the sewers and all loose material shall be removed from the manhole.

LATERAL SEWER CONNECTIONS: Direct connections of laterals to manholes shall be installed only at terminal manholes, where specifically shown on the Plans, or where directed by the District Manager. The top of the lateral sewer pipe shall be a minimum of 0.2 feet higher than the top of the downstream main sewer pipe. The manhole invert shall be channeled for lateral sewers in the same manner as for main sewers.

PIPE STUBS for future connections shall be not more than 2 feet long and shall be plugged with standard gasketed plugs.

RODHOLES shall be constructed as shown on the Standard Details. The end of the bottom wye shall be tightly plugged. The frame shall be joined to the riser pipe so that groundwater will be prevented from entering the sewer.

DROP CONSTRUCTION AT MANHOLES shall be installed as shown on the Standard Details. Particular care shall be taken to support the entering pipe on well-compacted material.

1.00 SCOPE

This work shall consist of furnishing and applying thermoplastic traffic stripes and pavement markings, including glass beads and furnishing and placing pavement markers, complete.

2.00 MATERIALS

THERMOPLASTIC MATERIAL shall conform to State Specification PTH-02SPRAY, PTH-02HYDRO or PTH-02ALKYD. Glass beads to be applied to the surface of the molten thermoplastic material shall conform to the requirements of State Specification 8010-004 (Type II).

PAVEMENT MARKERS shall be as manufactured by Ray-O-Lite, model AA, or approved equal.

3.00 WORKMANSHIP

Workmanship shall conform to Section 84 and Section 85 of the State Standard Specifications.

APPENDIX A

CERTIFICATE OF INSURANCE


CITY OF
ORLAND
Proud History
Bright Future
INC. 1909
CALIFORNIA

Return Completed Certificate to
City of Orland
815 Fourth Street
Orland, CA 95963

CERTIFICATE OF INSURANCE
TO
CITY OF ORLAND
CALIFORNIA ("the City")
A Municipal Corporation

Only this Certificate of Insurance form will be accepted

This certifies to the City that the following described policies have been issued to the Insured named below are in force at this time.

Insured _____

Address _____

_____

Description of operation/locations/products insured (shown contract name and/or number, if any): _____

_____

POLICIES AND INSURERS	LIMITS Bodily Injury Property Damage	POLICY NUMBER	EXPIRATION DATE
Worker's Compensation _____ (Name of Insurer) Best's Rating _____	Employer's Liability $ _____		
Check policy type: Comprehensive General Liability ___ or Commercial General Liability ___ _____ (Name of Insurer) Best's Rating _____	"Claims Made" ___ "Occurrence" ___ Each Occurrence $ _____ Each Occurrence $ _____ Or Combined Single Limit $ $ _____ Aggregate $ _____		
Business Auto Policy Liability Coverage Symbol _____ _____ (Name of Insurer) Best's Rating _____	Each Person $ _____ Each Accident $ _____ $ _____ or Combined Single Limit $ _____		
Umbrella Liability _____ (Name of Insurer) Best's Rating _____	"Claims Made" ___ "Occurrence" ___ Occurrence/ Aggregate $ _____ Self-Insured Retention $ _____		

The following coverage or conditions are in effect:	Yes	No
The City, its officials, and employees are named on all liability policies described above as insureds as respects: (a) activities performed for the City by or on behalf of the named insured, (b) products and completed operations of the Named Insured, and (c) premises owned, leased or used by the Named Insured.		
Products and Completed Operations		
The undersigned will mail to the City 30 days' written notice of cancellation or reduction of coverage or limits.		
Cross Liability Clause (or equivalent wording)		
Personal injury, Perils A, B, and C		
Broad Form Property Damage		
X, C, U Hazards included		
Contractual Liability Coverage applying to this Contract		
Liquor Liability		
Coverage afforded the City, its officials, employees and volunteers as Insureds applies as primary and not excess or contributing to any insurance issued in the name of the City.		
Waiver of subrogation from Workers' Compensation Insurer.		
Environmental Liability Insurance		

All of the above policies expressly provide therein that they shall not be canceled by the insurer until 30 days written notice of the intended cancellation thereof has first been given to the City of Orland by the insurer.

Agency or Brokerage

Insurance Company

Address

Home Office

Name of Person to be Contacted

Authorized Signature Date

Telephone Number

Note: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of official of insurer.