



CITY OF COLUSA
Department of Public Works

**CONTRACT DOCUMENTS
FOR
Walnut Ranch Unit I, II, And III
Waterline Improvement Project and
Sanitary Sewer Improvement Project
Volume 1**

**PRE BID MEETING – April 16th, 10 AM, 2024, at City Hall
BID OPENING – April 30th, @ 2 PM, 2024, at City Hall**

Mayor:	Daniel Vaca
Mayor Pro Tem:	Ryan Codorniz
Council Members:	Greg Ponciano Denise Conrado
City Manager:	Jesse Cain

**CONTRACT DOCUMENTS
AND
SPECIFICATIONS
FOR
WALNUT RANCH UNIT I, II, AND III
WATERLINE IMPROVEMENTS PROJECT
PROJECT NO. 0610002-002C
SANITARY SEWER IMPROVEMENTS PROJECT
PROJECT NO. D2201019, C-06-8421-110
Volume 1
January 2024
FOR BIDDING
Prepared by:**



**CALIFORNIA
ENGINEERING
COMPANY INC**
ESTD 1996

CIVIL ENGINEERING
LAND SURVEYING
FUNDING PROCUREMENT
CONSTRUCTION ADMINISTRATION

www.cecusa.net p 530.751.0952
Yuba City and Willows, CA

CITY OF COLUSA
WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT &
SANITARY SEWER IMPROVEMENTS PROJECT
LICENSEE RESPONSIBLE FOR SPECIFICATIONS

Contract Documents prepared by or under the direction of the following registered persons:

David L. Swartz (Civil, LS)
CEC, Inc.
1110 Civic Center Blvd. Ste 404
Yuba City, CA 95993
530-751-0952



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ATTACHMENT: VOLUME 3 TECHNICAL SPECIFICATIONS

CITY OF COLUSA
DEPARTMENT OF PUBLIC WORKS

NOTICE TO CONTRACTORS

CONTRACT NOS. 0610002-002C, D2201019, C-06-8421-110

Sealed proposals for the work shown on the plans entitled:

**CITY OF COLUSA;
DEPARTMENT OF PUBLIC WORKS
PROJECT PLANS FOR:**

**WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT AND
SANITARY SEWER IMPROVEMENTS PROJECT**

IN

THE CITY OF COLUSA

will be received at the City of Colusa City Hall, 425 Webster St. Colusa, Ca 95932, until 2 PM on April 30th, , at which time they will be publicly opened and read.

Proposal forms for this work are included in a separate book entitled:

**CITY OF COLUSA
DEPARTMENT OF PUBLIC WORKS
PROPOSAL AND CONTRACT FOR**

**WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT AND
SANITARY SEWER IMPROVEMENTS PROJECT**

IN

THE CITY OF COLUSA

General work for this project consists of removal of existing water supply well, abandoning existing water piping, installation of new water mains, services, fire hydrants, valves and water meters, boxes and service tie-ins and associated appurtenances..

A non-mandatory pre-bid meeting is scheduled for April 16th, at 10 AM at Colusa City Hall, 425 Webster St. Colusa, Ca 95932. This meeting is to inform DBEs of subcontracting and material supply opportunities. Bidder's are encouraged to attend this meeting, which may include a site walk.

This project has a goal of 24% percent disadvantaged business enterprise (DBE) participation.

A preconstruction conference will be required for this project. A time and date will be determined after contract award.

THIS PROJECT IS SUBJECT TO THE "BUY AMERICA" PROVISIONS OF THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1982 AS AMENDED BY THE INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991.

Bids are required for the entire work described herein. All documents shall be submitted in the original Proposal and Contract book, or attached to the appropriate pages, to be considered a responsible bid. (Pages may be stapled in.)

The contractor shall possess either a Class A license or a combination of license classes required for all work at the time this contract is awarded.

This contract is subject to state contract nondiscrimination and compliance requirements pursuant to Government Code, Section 12990.

Plans and specifications for bidding of this project are only obtainable at the office of the Colusa City Hall, 425 Webster Street, Colusa, California, 95932, for a non-refundable deposit of \$100.00 per set. An additional non-refundable deposit of \$25.00 for shipping and handling is required. Deposit shall be in the form of a cashier's check, personal check or business check. To obtain plans, contractors may call the offices of California Engineering Company Inc. @ 530-751-0952, or obtain them from one of several bid exchanges.

Please direct questions to the Project Manager, California Engineering Company, Inc., Yuba City, CA (530) 751-0952, attention David L. Swartz, PE, PLS.

The successful bidder shall furnish a payment bond and a performance bond.

The City of Colusa hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement; disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation.

Pursuant to Section 1773 of the Labor Code, 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 at the County of Colusa and available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov>. The Federal minimum wage rates for this project as predetermined by the United States Secretary of Labor are set forth in the books issued for bidding purposes entitled "Proposal and Contract," and in copies of this book that may be examined at the offices described above where project plans, special provisions, and proposal forms may be seen. Addenda to modify the Federal minimum wage rates, if necessary, will be issued to holders of "Proposal and Contract" books. 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.

Attention is directed to the Federal minimum wage rate requirements in the books entitled "Proposal and Contract." If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the general prevailing wage rates determined by the Director of the California Department of Industrial Relations for similar classifications of labor, the Contractor and subcontractors shall pay not less than the higher wage rate. The Department will not accept lower State wage rates not specifically included in the Federal minimum wage determinations. This includes "helper" (or other classifications based on hours of experience) or any other classification not appearing in the Federal wage determinations. Where Federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractors, the Contractor and subcontractors shall pay not less than the Federal minimum wage rate which most closely approximates the duties of the employees in question.

CITY OF COLUSA

CITY CLERK:

Shelly Kittle

DATED

ENGINEER'S ESTIMATE – WATERLINE IMPROVEMENTS

ITEM NO.	ITEM	UNIT OF MEASURE	ESTIMATED QUANTITY
1	Mobilization	LS	1
2	Abandon In Place Existing Water Piping, including removing Ex Fire Hydrants	LS	1
3	Abandon Wells and Equipment on Lot A	LS	1
4	Connect to Existing Water Supply	EA	2
5	10" PVC C-900 Pipe	LF	570
6	8" PVC C-900 Pipe	LF	6150
7	10" Gate Valve	EA	2
8	8" Gate Valve	EA	24
9	Fire Hydrants and Appurtenances	EA	20
10	2" Blow-off	EA	8
11	1" Water Service W/ Meter, Box & Connection	EA	73
12	Water System Testing	LS	1
13	Keyway Grinding	LF	11,860
14	Installation of Geotextile Material for Asphalt Overlay	25,000	SY
15	2 ½" FRAC Overlay	3700	TONS

ENGINEER'S ESTIMATE – SANITARY SEWER IMPROVEMENTS

ITEM NO.	ITEM	UNIT OF MEASURE	ESTIMATED QUANTITY
1	Mobilization	LS	1
2	Connect to Existing Sewer Manhole	EA	3
3	12" PVC SDR-35	LF	2110
4	10" PVC SDR-35	LF	1020
5	8" PVC SDR-25	LF	2600
6	48" Manhole	EA	20
7	Sewer Service Lateral w/ Cleanout	EA	73
8	8" Sewer Main Cleanout	EA	6
9	Abandon existing house septic system	EA	72

CITY OF COLUSA

DEPARTMENT OF PUBLIC WORKS

PROPOSAL AND CONTRACT

FOR

**WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT AND
SANITARY SEWER IMPROVEMENTS PROJECT**

IN

CITY OF COLUSA

For use in Connection with Standard Specifications and Standard Plans Dated July, 2010, of the California Department of Transportation, and the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished.

Contract Nos. _0610002-002C, D2201019, C-06-8421-110

Bid Opening Date: April 30th, 2:00 PM

**PROPOSAL TO THE CITY OF COLUSA
DEPARTMENT OF PUBLIC WORKS**

CONTRACT NOs. 0610002-002C, D2201019, C-06-8421-110

NAME OF BIDDER _____

BUSINESS P.O. BOX _____

CITY, STATE, ZIP _____

BUSINESS STREET ADDRESS _____

(Please include even if P.O. Box used)

CITY, STATE, ZIP _____

TELEPHONE NO: **AREA CODE ()** _____

FAX NO: **AREA CODE ()** _____

CONTRACTOR LICENSE NO. _____

The work for which this proposal is submitted is for construction in conformance with these contract documents, and technical specifications, with the City of Colusa standards and municipal code and standard details, and the Cal Trans Standard Plans (including the payment of not less than the State general prevailing wage rates or Federal minimum wage rates). The project plans described below, including any addenda thereto, the contract annexed hereto, and also in conformance with the California Department of Transportation Standard Plans, dated July, 2010, the Standard Specifications, dated July, 2010, and the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished.

The special provisions for the work to be done are dated January 2024, and are entitled:

**CITY OF COLUSA
WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT AND
SANITARY SEWER IMPROVEMENTS PROJECT
SPECIAL PROVISIONS**

The project plans for the work to be done were approved March 3rd 2023 (Waterline Improvement Plans) and January 2024 (Sanitary Sewer Improvement Plans) and are entitled:

**CITY OF COLUSA
DEPARTMENT OF PUBLIC WORKS
PROJECT PLANS FOR

WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PLANS AND
SANITARY SEWER IMPROVEMENT PLANS**

IN

THE CITY OF COLUSA

Bids are to be submitted for the entire work. The amount of the bid for comparison purposes will be the total of all items. The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

- (a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;
- (b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage wise the unit price or item total in the *CITY OF COLUSA*'s Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the *CITY OF COLUSA*, and that discretion will be exercised in the manner deemed by the *CITY OF COLUSA* to best protect the public interest in the prompt and economical completion of the work. The decision of the *CITY OF COLUSA* respecting the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

If this proposal shall be accepted and the undersigned shall fail to enter into the contract and furnish the 2 bonds in the sums required by the State Contract Act, with surety satisfactory to the *CITY OF COLUSA*, within 8 days, not including Saturdays, Sundays and legal holidays, after the bidder has received notice from the *CITY OF COLUSA* that the contract has been awarded, the *CITY OF COLUSA* may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void and the forfeiture of the security accompanying this proposal shall operate and the same shall be the property of the *CITY OF COLUSA*.

The undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm, or corporation; that he has carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and he proposes, and agrees if this proposal is accepted, that he will contract with the *CITY OF COLUSA*, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that he will take in full payment therefor the following prices, to wit:

CONTRACTOR'S BID – WATERLINE IMPROVEMENTS

ITEM NO.	ITEM	UNIT OF MEASURE	ESTIMATED QUANTITY	UNIT PRICE	ITEM TOTAL
1	Mobilization	LS	1		
2	Abandon In Place Existing Water Piping, including removing Ex Fire Hydrants	LS	1		
3	Abandon Wells and Equipment on Lot A				
4	Connect to Existing Water Supply	EA	2		
5	10" PVC C-900 Pipe	LF	570		
6	8" PVC C-900 Pipe	LF	6150		
7	10" Gate Valve	EA	2		
8	8" Gate Valve	EA	24		
9	Fire Hydrants and Appurtenances	EA	20		
10	2" Blow-off	EA	8		
11	1" Water Service W/ Meter, Box & Connection	EA	73		
12	Water System Testing	LS	1		
13	Keyway Grinding	LF	11,860		
14	Installation of Geotextile Material for Asphalt Overlay	25,000	SY		
15	2 ½" FRAC Overlay	3700	TONS		

TOTAL BID _____

CONTRACTOR'S BID – SANITARY SEWER IMPROVEMENTS

ITEM NO.	ITEM	UNIT OF MEASURE	ESTIMATED QUANTITY	UNIT PRICE	ITEM TOTAL
1	Mobilization	LS	1		
2	Connect to Existing Sewer Manhole	EA	3		
3	12" PVC SDR-35	LF	2110		
4	10" PVC SDR-35	LF	1020		
5	8" PVC SDR-25	LF	2600		
6	48" Manhole	EA	20		
7	Sewer Service Lateral w/ Cleanout	EA	73		
8	8" Sewer Main Cleanout	EA	6		
9	Abandon existing house septic system	EA	72		

TOTAL BID _____

The Bidder shall list the name and address of each subcontractor to whom the Bidder proposes to subcontract portions of the work, as required by the provisions in Section 2-1.054, "Required Listing of Proposed Subcontractors," of the Standard Specifications and Section 2-1.02, " Required Listing of Proposed Subcontractors," of the special provisions.

LIST OF SUBCONTRACTORS

<u>Name and Address and License No. of Work Subcontracted</u>	Description of Portion

(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS PROPOSAL SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS PROPOSAL)

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder _____, proposed subcontractor _____, hereby certifies that he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

PUBLIC CONTRACT CODE

Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ____, has not ____ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

◆ Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

Public Contract Code 10232 Statement

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement and Questionnaire.
Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Noncollusion Affidavit

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

To the CITY OF COLUSA
DEPARTMENT OF PUBLIC WORKS.

In conformance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that 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, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Noncollusion Affidavit is part of the Proposal. Signing this Proposal 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.

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgement rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

NONLOBBYING CERTIFICATION FOR FEDERAL-AID CONTRACTS

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in conformance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

DISCLOSURE OF LOBBYING ACTIVITIES

COMPLETE THIS FORM TO DISCLOSE LOBBYING ACTIVITIES PURSUANT TO 31 U.S.C. 1352

1. Type of Federal Action:

- a. contract
- b. grant
- c. cooperative agreement
- d. loan
- e. loan guarantee
- f. loan insurance

2. Status of Federal Action:

- a. bid/offer/application
- b. initial award
- c. post-award

3. Report Type:

- a. initial
- b. material change

For Material Change Only:

year _____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity

 Prime Subawardee

Tier _____, if known

Congressional District, if known

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:

Congressional District, if known

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, if applicable _____

8. Federal Action Number, if known:

9. Award Amount, if known:

10. a. Name and Address of Lobby Entity
(If individual, last name, first name, MI)

b. Individuals Performing Services (including address if different from No. 10a)
(last name, first name, MI)

(attach Continuation Sheet(s) if necessary)

11. Amount of Payment (check all that apply)

\$ _____ actual planned

13. Type of Payment (check all that apply)

- a. retainer
- b. one-time fee
- c. commission
- d. contingent fee
- e. deferred
- f. other, specify _____

12. Form of Payment (check all that apply):

- a. cash
- b. in-kind; specify: nature _____
value _____

14. Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or member(s) contacted, for Payment Indicated in Item 11:

(attach Continuation Sheet(s) if necessary)

15. Continuation Sheet(s) attached: Yes No

16. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying reliance was placed by the tier above when his transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature: _____

Print Name: _____

Title: _____

Telephone No.: _____ Date: _____

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of covered Federal action or a material change to previous filing pursuant to title 31 U.S.C. section 1352. The filing of a form is required for such payment or agreement to make payment to lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress an officer or employee of Congress or an employee of a Member of Congress in connection with a covered Federal action. Attach a continuation sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence, the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last, previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District if known. Check the appropriate classification of the reporting entity that designates if it is or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in Item 4 checks "Subawardee" then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organization level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identification in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract grant or loan award number, the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitments for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influenced the covered Federal action.
(b) Enter the full names of the individual(s) performing services and include full address if different from 10 (a). Enter Last Name, First Name and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed or will be expected to perform and the date(s) of any services rendered. Include all preparatory and related activity not just time spent in actual contact with Federal officials. Identify the Federal officer(s) or employee(s) contacted or the officer(s) employee(s) or Member(s) of Congress that were contacted.
15. Check whether or not a continuation sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name title and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.

SF-LLL-Instructions Rev. 06-04-90«ENDIF»

Accompanying this proposal is _____

(NOTICE: INSERT THE WORDS "CASH(\$ _____)," "CASHIER'S CHECK," "CERTIFIED CHECK," OR "BIDDER'S BOND," AS THE CASE MAY BE.)

in amount equal to at least ten percent of the total of the bid.

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

IMPORTANT NOTICE

If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual copartners composing firm; if bidder or other interested person is an individual, state first and last names in full.

Licensed in conformance with an act providing for the registration of Contractors,

License No. _____ Classification(s) _____

ADDENDA -

This Proposal is submitted with respect to the changes to the contract included in addenda number/s _____

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

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

Date: _____



Signature and Title of Bidder

Business Address _____

Place of Business _____

Place of Residence _____

**CITY OF COLUSA
DEPARTMENT OF PUBLIC WORKS**

BIDDER'S BOND

We, _____
_____ as Principal, and

_____ as Surety are bound unto the City OF COLUSA, State of California, hereafter referred to as "Obligee", in the penal sum of ten percent (10%) of the total amount of the bid of the Principal submitted to the Obligee for the work described below, for the payment of which sum we bind ourselves, jointly and severally,

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT:

WHEREAS, the Principal is submitted to the Obligee, for _____

(Copy here the exact description of work, including location as it appears on the proposal)

for which bids are to be opened at _____ on _____
(Insert place where bids will be opened) (Insert date of bid opening)

NOW, THEREFORE, if the Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him for signature, enters into a written contract, in the prescribed form, in conformance with the bid, and files two bonds with the Obligee, one to guarantee faithful performance of the contract and the other to guarantee payment for labor and materials as provided by law, then this obligation shall be null and void; otherwise, it shall remain in full force.

In the event suit is brought upon this bond by the Obligee and judgement is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the court.

Dated: _____, 20 ____ .

Principal

Surety
By _____
Attorney-in-fact

CERTIFICATE OF ACKNOWLEDGEMENT
State of California
City / County of _____ SS

On this _____ day of _____ in the year 20 ____ before me
_____, personally appeared _____,
Attorney-in-fact

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument as the attorney-in-fact of _____, and acknowledged to me that he (she) subscribed the name of the said company thereto as surety, and his (her) own name as attorney-in-fact.

(SEAL) _____
Notary Public

◆ LOCAL AGENCY BIDDER - DBE - INFORMATION

This information may be submitted with your bid proposal. If it is not, and you are the apparent low bidder or the second or third low bidder, it must be submitted and received as specified in Section 2-1.12B of the Special Provisions. Failure to submit the required DBE information will be grounds for finding the proposal nonresponsive.

CO.-RTE.-K.P.: _____
 CONTRACT NO.: _____
 BID AMOUNT: \$ _____
 BID OPENING DATE: _____
 BIDDER'S NAME: _____
 DBE GOAL FROM CONTRACT: _____
 DBE PRIME CONTRACTOR CERTIFICATION ¹:

CONTRACT ITEM NO.	ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED ²	DBE CERT. NO.	NAME OF DBEs (Must be certified on the date bids are opened - include DBE address and phone number)	DOLLAR AMOUNT DBE ³
IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Copies of the DBE quotes are required. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above shall be consistent, where applicable, with the names and items of work in the "List of Subcontractors" submitted with your bid pursuant to the Subcontractors Listing Law and Section 2-1.02, "Required Listing of Proposed Subcontractors," of the Special Provisions.			◆ Total Claimed ◆ Participation	\$ _____ _____ %
1. DBE prime contractors shall enter their DBE certification number. DBE prime contractors shall indicate all work to be performed by DBEs including work performed by its own forces. 2. If 100% of item is not to be performed or furnished by DBE, describe exact portion of item to be performed or furnished by DBE. 3. See Section 2-1.02, "Disadvantaged Business Enterprise," to determine the credit allowed for DBE firms.			_____ Signature of Bidder _____ Date (Area Code) Tel. No. _____ Person to Contact (Please Type or Print)	

CT Bidder - DBE Information (Rev 09-28-99)

• **DBE INFORMATION—GOOD FAITH EFFORTS**

The CITY OF COLUSA established a Disadvantaged Business Enterprise (DBE) goal of 24% for this project. The information provided herein shows that adequate good faith efforts were made.

- A. The names and dates of each publication in which a request for DBE participation for this project was placed by the bidder (please attach copies of advertisements or proofs of publication):

<u>Publications</u>	<u>Dates of Advertisement</u>
---------------------	-------------------------------

- B. The names and dates of written notices sent to certified DBEs soliciting bids for this project and the dates and methods used for following up initial solicitations to determine with certainty whether the DBEs were interested (please attach copies of solicitations, telephone records, fax confirmations, etc.):

<u>Names of DBEs Solicited</u>	<u>Date of Initial Solicitation</u>	<u>Follow Up Methods and Dates</u>
--------------------------------	-------------------------------------	------------------------------------

- C. The items of work which the bidder made available to DBE firms, including, where appropriate, any breaking down of the contract work items (including those items normally performed by the bidder with its own forces) into economically feasible units to facilitate DBE participation. It is the bidder's responsibility to demonstrate that sufficient work to facilitate DBE participation was made available to DBE firms.

<u>Items of Work</u>	<u>Breakdown of Items</u>
----------------------	---------------------------

- D. The names, addresses and phone numbers of rejected DBE firms, the reasons for the bidder's rejection of the DBEs, and the firms selected for that work (please attach copies of quotes from the firms involved):

Names, addresses and phone numbers of rejected DBEs and the reasons for the bidder's rejection of the DBEs:

Names, addresses and phone numbers of firms selected for the work above:

E. Efforts made to assist interested DBEs in obtaining bonding, lines of credit or insurance, and any technical assistance or information related to the plans, specifications and requirements for the work which was provided to DBEs:

F. Efforts made to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, excluding supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate.

G. The names of agencies, organizations or groups contacted to provide assistance in contacting, recruiting and using DBE firms (please attach copies of requests to agencies and any responses received, i.e., lists, Internet page download, etc.).

Name of Agency/Organization	Method/Date of Contact	Results
-----------------------------	------------------------	---------

H. Any additional data to support a demonstration of good faith efforts (use additional sheets if necessary):

Contract Assurance

The contractor ensures that the following clause is placed in every DOT-assisted contract and subcontract:

The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as recipient deems appropriate.

Prompt Progress Payment To Subcontractors

A prime contractor or subcontractor shall pay to any subcontractor not later than 10 days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The 10 days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of Section 7108.5 shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies of that Section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise, available to the contractor or subcontractor in the event of a dispute involving late payment, or nonpayment by the contractor, or deficient subcontractor performance, or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Prompt Payment Of Withheld Funds To Subcontractors

The contractor shall include the following provision in all federal-aid contracts to ensure prompt and full payment of retainage [withheld funds] to subcontractors in compliance with 49 CFR 26.29).

The agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the agency of the contract work and pay retainage to the prime contractor based on these acceptances. The prime contractor or subcontractor shall return all monies withheld in retention from all subcontractors within 30 days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the agency. Any delay or postponement of payment may take place only for good cause and with the agency's prior written approval. Any violation of these provisions shall subject the violating prime contractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise, available to the prime contractor or subcontractor in the event of a dispute involving late payment, or nonpayment by the contractor, or deficient subcontractor's performance, or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Overall Goal

The City of Colusa' overall goal for the federal fiscal year 2004/2005 is the following: **24** % of the federal financial assistance in DOT-assisted contracts. This overall goal is broken down into **12** % race-conscious and **12** % race-neutral components.

Contract Goals

The City of Colusa will use contract goals to meet any portion of the overall goal the City of Colusa does not project being able to meet by the use of race-neutral means. Contract goals are established so that, over the period to which the overall goal applies, they will cumulatively result in meeting any portion of the overall goal that is not projected to be met through the use of race-neutral means.

Contract goals will be established only on those DOT-assisted contracts that have subcontracting possibilities. Contract goals need not be established on every such contract, and the size of contract goals will be adapted to the circumstances of each such contract (e.g., type and location of work, availability of DBEs to perform the particular type of work). The contract work items will be compared with eligible DBE contractors willing to work on the project. A determination will also be made to decide which items are likely to be performed by the prime contractor and which ones are likely to be performed by the subcontractor(s). The goal will then be incorporated into the contract documents. Contract goals will be expressed as a percentage of the total amount of a DOT-assisted contract.

Transit Vehicle Manufacturers

If DOT-assisted contracts will include transit vehicle procurements, the City of Colusa will require each transit vehicle manufacturer, as a condition of being authorized to bid or propose on transit vehicle procurements, to certify that it has complied with the requirements of 49 CFR Part 26, Section 49. The City of Colusa will direct the transit vehicle manufacturer to the subject requirements located on the Internet at <http://osdbuweb.dot.gov/programs/dbe/dbe.htm>.

GOOD FAITH EFFORTS

Information to be Submitted

The City of Colusa treats bidders'/offerors' compliance with good faith effort requirements as a matter of responsiveness. A responsive proposal is meeting all the requirements of the advertisement and solicitation.

Each solicitation for which a contract goal has been established will require the bidders'/offerors to submit the following information to: **City Engineer, City of Colusa, 425 Webster Street, Colusa CA 95932**, no later than 4:00 p.m. on or before the fourth day, not including Saturdays, Sundays and legal holidays, following bid opening:

1. The names and addresses of known DBE firms that will participate in the contract;
2. A description of the work that each DBE will perform;
3. The dollar amount of the participation of each DBE firm participation;
4. Written and signed documentation of commitment to use a DBE subcontractor whose participation it submits to meet a contract goal;
5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment; and
6. If the contract goal is not met, evidence of good faith efforts.

Demonstration of Good Faith Efforts

The obligation of the bidder/offeror is to make good faith efforts. The bidder/offeror can demonstrate that it has done so either by meeting the contract goal or documenting good faith efforts.

The following personnel are responsible for determining whether a bidder/offeror who has not met the contract goal has documented sufficient good faith efforts to be regarded as responsive: **City Engineer, City of Colusa, 465 C Street, Colusa, CA 95932.**

The City of Colusa will ensure that all information is complete and accurate and adequately documents the bidder/offeror's good faith efforts before a commitment to the performance of the contract by the bidder/offeror is made.

Administrative Reconsideration

Within 10 days of being informed by the City of Colusa that it is not responsive because it has not documented sufficient good faith efforts, a bidder/offeror may request administrative reconsideration. Bidder/offerors should make this request in writing to the following reconsideration official: **City Manager, City of Colusa, 425 Webster Street, Colusa, CA 95932.**

The reconsideration official will not have played any role in the original determination that the bidder/offeror did not make or document sufficient good faith efforts.

As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The bidder/offeror will have the opportunity to meet in person with the reconsideration official to discuss the issue of whether it met the goal or made adequate good faith efforts to do so. The City of Colusa will send the bidder/offeror a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to Caltrans, FHWA or the DOT.

Good Faith Efforts when a DBE is Replaced on a Contract

The City of Colusa will require a contractor to make good faith efforts to replace a DBE that is terminated or has otherwise failed to complete its work on a contract with another certified DBE, to the extent needed to meet the contract goal. The prime contractor is required to notify the RE immediately of the DBE's inability or unwillingness to perform and provide reasonable documentation.

In this situation, the prime contractor will be required to obtain the City of Colusa' prior approval of the substitute DBE and to provide copies of new or amended subcontracts, or documentation of good faith efforts. If the contractor fails or refuses to comply in the time specified, the City of Colusa contracting office will issue an order stopping all or part of payment/work until satisfactory action has been taken. If the contractor still fails to comply, the contracting officer may issue a termination for default proceeding.

Counting DBE Participation

The City of Colusa will count DBE participation toward overall and contract goals as provided in the contract specifications for the prime contractor, subcontractor, joint venture partner with prime or subcontractor, or vendor of material or supplies.

Monitoring Payments to DBEs

Prime contractors are required to maintain records and documents of payments to DBEs for three years following the performance of the contract. These records will be made available for inspection upon request by any authorized representative of the City of Colusa, Caltrans, FHWA, or DOT. This reporting requirement also extends to any certified DBE subcontractor.

Payments to DBE subcontractors will be reviewed by the City of Colusa to ensure that the actual amount paid to DBE subcontractors equals or exceeds the dollar amounts stated in the schedule of DBE participation.

Confidentiality

The City of Colusa will safeguard from disclosure to third parties information that may reasonably be regarded as confidential business information, consistent with federal, state, and local laws.

STANDARD PUBLIC WORKS AGREEMENT FOR

THIS AGREEMENT (herein "Agreement"), is made and entered into this _____ day of _____, 20__ by and between the CITY OF COLUSA, a municipal corporation, (herein "City") and _____ (herein "Contractor"). The parties hereto agree as follows:

R E C I T A L S

A. City requires the construction of _____, as set forth more fully in this Agreement. Contractor has represented to City that Contractor is qualified to perform said work and has submitted a proposal to City for same.

B. City desires to have Contractor perform said services on the terms and conditions set forth herein.

NOW, THEREFORE, based on the foregoing Recitals and for good and valuable consideration, the receipt and sufficiency of which is acknowledged by both parties, City and Contractor hereby agree as follows:

1. SERVICES OF CONTRACTOR

1.1 Scope of Services - In compliance with all terms and conditions of this Agreement, the Contractor shall provide those services specified in the "Scope of Services" attached hereto as Exhibit "A" and incorporated herein by this reference, which services may be referred to herein as the "services" or "work" hereunder. As a material inducement to the City entering into this Agreement, Contractor represents and warrants that Contractor is a provider of first class work and services and Contractor is experienced in performing the work and services contemplated herein and, in light of such status and experience, Contractor covenants that it shall follow the highest professional standards in performing the work and services required hereunder and that all materials will be of good quality, fit for the purpose intended.

1.2 Documents Included in Contract - This contract consists of the Request For Proposal, bid documents (hereinafter "Proposal"), Proposal Schedule, Designation of Subcontractors, Noncollusion Affidavit, Certification of Principal, Specifications, Plans, this Contract Services Agreement, Faithful Performance Bond, Labor and Materials Bond, Supplemental Information, Guarantee, Tax Identification Form and any and all schedules and attachments to it which are incorporated as if fully set forth herein. In the event of an inconsistency, this Agreement shall govern.

1.3 Compliance with Law - All services rendered hereunder shall be provided in accordance with all ordinances, resolutions, statutes, rules, and regulations of the City and any Federal, State or local governmental agency having jurisdiction in effect at the time service is rendered.

1.4 Licenses, Permits, Fees and Assessments - Contractor shall obtain at its sole cost and expense such licenses, permits and approvals as may be required by law for the performance of the services required by this Agreement, including registration with the Department of Industrial Relations of the State of California as required by Labor Code Section 1725.5 before commencing performance under this Agreement. Contractor shall have the sole obligation to pay for any fees, assessments and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary

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for the Contractor's performance of the services required by this Agreement, and shall indemnify, defend and hold harmless City against any such fees, assessments, taxes penalties or interest levied, assessed or imposed against City hereunder. Contractor shall be responsible for all subcontractors' compliance with this Section 1.4.

1.5 Familiarity with Work - By executing this Contract, Contractor warrants that Contractor (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, Contractor warrants that Contractor has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services hereunder. Should the Contractor discover any latent or unknown conditions, which will materially affect the performance of the services hereunder, Contractor shall immediately inform the City of such fact and shall not proceed except at Contractor's risk until written instructions are received from the Contract Officer.

1.6 Standard of Performance – Contractor, its subcontractors and their employees, in the performance of Contractor's work under this Agreement shall be responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures used in the Contractor's field.

Any costs for failure to meet the foregoing standard or to correct otherwise defective work that requires re-performance of the work, shall be borne in total by the Contractor and not by the City. The failure of a project to achieve the performance goals and objectives stated in this Agreement is not a basis for requesting re-performance unless the work conducted by Contractor and/or its subcontractors is deemed by the City to have failed the foregoing standard of performance.

In the event Contractor fails to perform in accordance with the above standard:

Contractor will re-perform, at its own expense, any task which was not performed to the reasonable satisfaction of City. Any work re-performed pursuant to this paragraph shall be completed within the time limitations originally set forth for the specific task involved. Contractor shall work any overtime required to meet the deadline for the task at no additional cost to the City;

The City shall provide a new schedule for the re-performance of any task pursuant to this paragraph in the event that re-performance of a task within the original time limitations is not feasible; and

The City shall have the option to direct Contractor not to re-perform any task which was not performed to the reasonable satisfaction of the City Project Manager pursuant to application of (1) and (2) above. In the event the City directs Contractor not to re-perform a task, the City shall negotiate a reasonable settlement for satisfactory work performed. No previous payment shall be considered a waiver of the City's right to reimbursement.

Nothing contained in this section is intended to limit any of the rights or remedies which the City may have under law.

1.7 Care of Work - The Contractor shall adopt reasonable methods during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and/or other components thereof to prevent losses or damages, and shall be responsible for all such damages, to persons or property, until acceptance of the work by City, except such losses or damages as may be caused by City's own negligence.

1.8 Further Responsibilities of Parties - Both parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. Both parties agree to act in good faith to execute all instruments, prepare all documents and take all actions as may be reasonably necessary to carry out the purposes of this Agreement. Unless hereafter specified, neither party shall be responsible for the service of the other. Contractor shall require all subcontractors to comply with the provisions of this agreement.

1.9 Additional Services - City shall have the right at any time during the performance of the services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to or

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deducting from said work. No such extra work may be undertaken unless a written change order is first given by the Contract Officer to the Contractor, incorporating therein any adjustment in (i) the Contract Sum as set forth in Section 2.1, and/or (ii) the time to perform this Agreement, which said adjustments are subject to the written approval of the Contractor. Any increase in compensation of twenty five percent (25%) or less of the Contract Sum, or in the time to perform of one hundred eighty (180) days or less may be approved by the Contract Officer. Any greater increases, taken either separately or cumulatively must be approved by the City Council. It is expressly understood by Contractor that the provisions of this Section shall not apply to services specifically set forth in the Scope of Services or reasonably contemplated therein. Contractor hereby acknowledges that it accepts the risk that the services to be provided pursuant to the Scope of Services may be more costly or time consuming than Contractor anticipates and that Contractor shall not be entitled to additional compensation therefore.

1.10 Prevailing Wage Laws - In accordance with Labor Code Section 1770 et seq., the director of the Department of Industrial Relations of the State of California has ascertained a general prevailing rate of wages, which is the minimum amount, which shall be paid to all workers employed to perform the work pursuant to this Agreement. A copy of the general prevailing wage rate determination is on file in the Office of the City Clerk and is hereby incorporated by reference into this Agreement. In accordance with the provisions of Labor Code Section 1810 et seq., eight (8) hours is the legal working day. Contractor must forfeit to the City Twenty Five Dollars (\$25.00) a day for each worker who works in excess of the minimum working hours when Contractor does not pay overtime. Contractor is required to post a copy of such wage rates at all times at the contract site. The statutory penalties for failure to pay prevailing wage or to comply with State wage and hour laws will be enforced. Contractor also shall comply with State law requirements to maintain payroll records and shall provide for certified records and inspection of records as required by California Labor Code Section 1770 et. Seq., including Section 1776. Contractor shall comply with all statutory requirements relating to the employment of apprentices.

2. COMPENSATION

2.1 Contract Sum - For the services rendered pursuant to this Agreement, the Contractor shall be compensated as specified herein, but not exceeding the maximum contract amount of _____ Dollars (\$ _____ .00) (herein "Contract Sum"), except as provided in Section 1.9. The Contract Sum shall include the attendance of Contractor at all project meetings reasonably deemed necessary by the City; Contractor shall not be entitled to any additional compensation for attending said meetings.

2.2 Progress Payments - Prior to the first day of the month, during the progress of the work, commencing on the day and month specified in the Agreement, Contractor shall submit to the Contract Officer a complete itemized statement of all labor and materials incorporated into the work during the preceding month and the portion of the contract sum applicable thereto. Upon approval in writing by the Contract Officer, payment shall be made in thirty (30) days. City shall pay Contractor a sum based upon ninety percent (90%) of the contract price apportionment of the labor and materials incorporated into the work under the contract during the month covered by said statement. The remaining ten percent (10%) thereof shall be retained as performance security. Refer to Section 7.3 of this Agreement for retention of funds.

3. PERFORMANCE SCHEDULE

3.1 Time of Essence - Time is of the essence in the performance of this Agreement.

3.2 Schedule of Performance - Contractor shall commence the services pursuant to this Agreement upon receipt of a written notice to proceed and shall perform all services within the time period(s) established in the "Schedule of Performance"

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attached hereto as Exhibit "B", , and incorporated herein by this reference. When requested by the Contractor, extensions to the time period(s) specified in the Scope of Services may be approved in writing by the Contract Officer.

3.3 Force Majeure - The time period(s) specified in the Scope of Services for performance of the services rendered pursuant to this Agreement shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, litigation, and/or acts of any governmental agency, including the City, if the Contractor shall within ten (10) days of the commencement of such delay notify the Contract Officer in writing of the causes for the delay. The Contract Officer shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the judgment of the Contract Officer such delay is justified. The Contract Officer's determination shall be final and conclusive upon the parties to this Agreement.

3.4 Term - Unless earlier terminated in accordance with Section 7.8 of this Agreement, this Agreement shall continue in full force and effect until final approval and acceptance of the project by the Contract Officer.

4. COORDINATION OF WORK

4.1 Representative of Contractor - The following principals of Contractor are hereby designated as being the principals and representatives of Contractor authorized to act in its behalf with respect to the work specified herein and make all decisions in connection therewith:

It is expressly understood that the experience, knowledge, capability and reputation of the foregoing principals were a substantial inducement for City to enter into this Agreement. Therefore, the foregoing principals shall be responsible during the term of this Agreement for directing all activities of Contractor and devoting sufficient time to personally supervise the services hereunder. For purposes of this Agreement, the foregoing principals may not be replaced nor may their responsibilities be substantially reduced by Contractor without the express written approval of City.

4.2 Contract Officer - The Contract Officer shall be such person as may be designated by the City Manager or City Engineer of City. It shall be the Contractor's responsibility to assure that the Contract Officer is kept informed of the progress of the performance of the services and the Contractor shall refer any decisions that must be made by City to the Contract Officer. Unless otherwise specified herein, any approval of City required hereunder shall mean the approval of the Contract Officer. The Contract Officer shall have authority to sign all documents on behalf of the City required hereunder to carry out the terms of this Agreement.

4.3 Prohibition Against Assignment - The experience, knowledge, capability and reputation of Contractor, its principals and employees were a substantial inducement for the City to enter into this Agreement. Neither this Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior written approval of City. Transfers restricted hereunder

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shall include the transfer to any person or group of persons acting in concert of more than twenty five percent (25%) of the present ownership and/or control of Contractor, taking all transfers into account on a cumulative basis. In the event of any such unapproved transfer, including any bankruptcy proceeding, this Agreement shall be void. No approved transfer shall release the Contractor or any surety of Contractor of any liability hereunder without the express consent of City.

4.4 Independent Contractor - Neither the City nor any of its employees shall have any control over the manner, mode or means by which Contractor, its subcontractors, agents or employees, performs the services required herein, except as otherwise set forth herein. City shall have no voice in the selection, discharge, supervision or control of Contractor's employees, subcontractors, servants, representatives or agents, or in fixing their number, compensation or hours of service. Contractor shall perform all services required herein as an independent contractor of City and shall remain at all times as to City a wholly independent contractor with only such obligations as are consistent with that role. Contractor shall not at any time or in any manner represent that it or any of its subcontractors, agents or employees are agents or employees of City. City shall not in any way or for any purpose become or be deemed to be a partner of Contractor in its business or otherwise or a joint venture or a member of any joint enterprise with Contractor.

4.5 Identity of Persons Performing Work - Contractor represents that it employs or will employ at its own expense all personnel required for the satisfactory performance of any and all tasks and services set forth herein. Contractor represents that the tasks and services required herein will be performed by Contractor or under its direct supervision, and that all personnel engaged in such work shall be fully qualified and shall be authorized and permitted under applicable State and local law to perform such tasks and services.

4.6 Utility Relocation - City is responsible for removal, relocation, or protection of existing main or trunkline utilities to the extent such utilities were not identified in the invitation for bids or specifications. City shall reimburse contractor for any costs incurred in locating, repairing damage not caused by contractor and removing or relocating such unidentified utility facilities, including equipment idled during such work. Contractor shall not be assessed liquidated damages for delay arising from the removal or relocation of such unidentified utility facilities.

4.7 **Trenches or Excavations** - Pursuant to California Public Contract Code Section 7104, in the event the work included in this Agreement requires excavations more than four (4) feet in depth, the following shall apply.

(a) Contractor shall promptly, and before the following conditions are disturbed, notify City, in writing, of any: (1) material that 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; (2) Subsurface or latent physical conditions at the site different from those indicated; or (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.

(b) City 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 Contractor's cost of, or the time required for, performance of any part of the work shall issue a change order per Section 1.9 of this Agreement.

(c) That, in the event that a dispute arises between City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of the work, 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

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contract. 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.

5. INSURANCE, INDEMNIFICATION AND BONDS

5.1 Insurance - The Contractor shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to City, during the entire term of this Agreement including any extension thereof, the following policies of insurance:

Coverage (Check if applicable)	Minimum Limits
<input type="checkbox"/> Comprehensive General Liability Insurance (including premises and operations)	\$1,000,000 per occurrence combined single limit
<input type="checkbox"/> Contractual Liability Insurance Products Liability Insurance	\$1,000,000 limit
<input type="checkbox"/> Comprehensive Automobile Liability Insurance (includes owned, non-owned, and hired automobile hazard)	\$1,000,000 per occurrence combined single limit
<input type="checkbox"/> Errors and Omissions Insurance (providing for a one year discovery period)	\$1,000,000 limit
<input type="checkbox"/> Workers' Compensation/Employers' Liability Insurance	\$1,000,000 per occurrence

Conditions:

In accordance with Public Contract Code Section 20170, the insurance of surety companies who provide or issue the policy shall have been admitted to do business in the State of California with a credit rating of A- or better.

This insurance shall not be canceled, limited in scope or coverage or non-renewed until after thirty (30) days prior written notice has been given to the City Engineer, City of Colusa, 401 E. Chapman Ave., Colusa, California 92870.

Any insurance maintained by the City of Colusa shall apply in excess of and not combined with insurance provided by this policy.

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The City of Colusa, its officers, employees, representatives, attorneys, and volunteers shall be named as additional named insureds.

Prior to commencement of any work under this contract, Contractor shall deliver to the City insurance endorsements confirming the existence of the insurance required by this contract, and including the applicable clauses referenced above.

Such endorsements shall be signed by an authorized representative of the insurance company and shall include the signator's company affiliation and title. Should it be deemed necessary by the City, it shall be Contractor's responsibility to see that the City receives documentation, acceptable to the City, which sustains that the individual signing said endorsements is indeed authorized to do so by the insurance company.

If the Contractor fails to maintain the aforementioned insurance, or secure and maintain the aforementioned endorsement, the City may obtain such insurance, and deduct and retain the amount of the premiums for such insurance from any sums due under the agreement. However, procuring of said insurance by the City is an alternative to other remedies the City may have, and is not the exclusive remedy for failure of Contractor to maintain said insurance or secure said endorsement. In addition to any other remedies the City may have upon Contractor's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, the City shall have the right to order Contractor to stop work hereunder, and/or withhold any payment(s) which became due to Contractor hereunder until Contractor demonstrates compliance with the requirements hereof.

Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payments of damages to persons or property resulting from Contractor's or its subcontractor's performance of the work covered under this agreement.

Each contract between the Contractor and any subcontractor shall require the subcontractor to maintain the same policies of insurance that the Contractor is required to maintain pursuant to this Section 5.1.

5.2 Indemnification - Contractor shall indemnify the City of Colusa, its officers, agents and employees against, and will hold and save them and each of them harmless from, any and all actions, suits, claims, damages to persons or property, losses, costs, penalties, obligations, errors, omissions or liabilities, (herein "claims or liabilities") that may be asserted or claimed by any person, firm or entity arising or alleged to arise out of or in connection with the performance of the work, operations or activities of Contractor, its agents, employees, subcontractors, or invitees, provided for herein, or arising or alleged to arise from the negligent acts or omissions of Contractor hereunder, or arising or alleged to arise from Contractor's performance or failure to perform any term, provision, covenant or condition of this Agreement, but excluding such claims or liabilities or portion of such claims or liabilities arising or alleged to arise from the willful misconduct of the City, its officers, agents or employees, and in connection therewith:

(a) Contractor will defend any action or actions filed in connection with any of said claims or liabilities and will pay all costs and expenses, including legal costs and attorneys' fees incurred in connection therewith;

(b) Contractor will promptly pay any judgment rendered against the City, its officers, agents or employees for any such claims or liabilities arising or alleged to arise out of or in connection with Contractor's (or its agents', employees', subcontractors' or invitees') negligent performance of or failure to perform such work, operations or activities hereunder; and Contractor agrees to save and hold the City, its officers, agents, and employees harmless therefrom;

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(c) In the event the City, its officers, agents or employees is made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising or alleged to arise out of or in connection with the performance of or failure to perform the work, operation or activities of Contractor hereunder, Contractor shall pay to the City, its officers, agents or employees, any and all costs and expenses incurred by the City, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees for counsel acceptable to City.

(d) Contractor's duty to defend and indemnify as set out in this Section 5.2 shall include any claims, liabilities, obligations, losses, demands, actions, penalties, suits, costs, expenses or damages or injury to persons or property arising or alleged to arise from, in connection with, as a consequence of or pursuant to any state or federal law or regulation regarding hazardous substances, including but not limited to the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), Resource Conservation and Recovery Act of 1976 ("RCRA"), the Hazardous and Solid Waste Amendments of 1984, the Hazardous Material Transportation Act, the Toxic Substances control Act, the Clean Air Act, the Clean Water Act, the California Hazardous Substance Account Act, the California Hazardous Waste Control Law or the Porter-Cologne Water Quality Control Act, as any of those statutes may be amended from time to time.

The Contractor's indemnification obligations pursuant to this Section 5.2 shall survive the termination of this Agreement. Contractor shall require the same indemnification from all subcontractors.

5.3 Labor and Materials and Performance Bonds – Concurrently with execution of this Agreement, Contractor shall deliver to City a labor and materials bond and a performance bond each in the sum of the amount of this Agreement, in the forms provided by the City Clerk, which secures the faithful performance of this Agreement. The bonds shall contain the original notarized signature of an authorized officer of the surety and affixed thereto shall be a certified and current copy of his power of attorney. The bonds shall be unconditional and remain in force during the entire term of the Agreement and shall be null and void only if the Contractor promptly and faithfully performs all terms and conditions of this Agreement.

5.4 Sufficiency of Insurer or Surety - Insurance or bonds required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated "A" or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category Class VII or better, unless such requirements are waived by the Risk Manager of the City due to unique circumstances. In the event the Risk Manager of City ("Risk Manager") determines that the work or services to be performed under this Agreement creates an increased risk of loss to the City, the Contractor agrees that the minimum limits of the insurance policies and the performance bond required by this Section 5 may be changed accordingly upon receipt of written notice from the Risk Manager; provided that the Contractor shall have the right to appeal a determination of increased coverage by the Risk Manager to the City Council of City within ten (10) days of receipt of notice from the Risk Manager.

5.5 Substitution of Securities - Pursuant to California Public Contract Code Section 22300, substitution of eligible equivalent securities for any moneys withheld to ensure performance under the contract for the work to be performed will be permitted at the request and expense of the successful bidder.

6. RECORDS AND REPORTS

6.1 Reports - Contractor shall periodically prepare and submit to the Contract Officer such reports concerning the performance of the services required by this Agreement as the Contract Officer shall require. Contractor hereby acknowledges that the City is greatly concerned about the cost of work and services to be performed pursuant to this Agreement. For this reason, Contractor agrees that if Contractor becomes aware of any facts, circumstances, techniques, or events that may or will materially increase or decrease the cost of the work or services contemplated herein or, if

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Contractor is providing design services, the cost of the project being designed, Contractor shall promptly notify the Contract Officer of said fact, circumstance, technique or event and the estimated increased or decreased cost related thereto and, if Contractor is providing design services, the estimated increased or decreased cost estimate for the project being designed.

6.2 Records - Contractor shall keep, and require subcontractors to keep, such books and records (including but not limited to payroll records as required herein) as shall be necessary to perform the services required by this Agreement and enable the Contract Officer to evaluate the performance of such services. The Contract Officer shall have full and free access to such books and records at all times during normal business hours of City, including the right to inspect, copy, audit and make records and transcripts from such records. Such records shall be maintained for a period of three (3) years following completion of the services hereunder, and the City shall have access to such records in the event any audit is required.

6.3 Ownership of Documents - All drawings, specifications, reports, records, documents and other materials prepared by Contractor, its employees, subcontractors and agents in the performance of this Agreement shall be the property of City and shall be delivered to City upon request of the Contract Officer or upon the termination of this Agreement, and Contractor shall have no claim for further employment or additional compensation as a result of the exercise by City of its full rights of ownership of the documents and materials hereunder. Contractor may retain copies of such documents for its own use. Contractor shall have an unrestricted right to use the concepts embodied therein. All subcontractors shall provide for assignment to City of any documents or materials prepared by them, and in the event Contractor fails to secure such assignment, Contractor shall indemnify City for all damages resulting therefrom.

7. ENFORCEMENT OF AGREEMENT

7.1 California Law - This Agreement shall be construed and interpreted both as to validity and to performance of the parties in accordance with the laws of the State of California. Legal actions concerning any dispute, claim or matter arising out of or in relation to this Agreement shall be instituted in the Superior Court of the County of Colusa, State of California, or any other appropriate court in such county, and Contractor covenants and agrees to submit to the personal jurisdiction of such court in the event of such action.

7.2 Disputes - In the event either party fails to perform its obligations hereunder, the nondefaulting party shall provide the defaulting party written notice of such default. The defaulting party shall have ten (10) days to cure the default; provided that, if the default is not reasonably susceptible to being cured within said ten (10) day period, the defaulting party shall have a reasonable time to cure the default, not to exceed a maximum of thirty (30) days, so long as the defaulting party commences to cure such default within ten (10) days of service of such notice and diligently prosecutes the cure to completion; provided further that if the default is an immediate danger to the health, safety and general welfare, the defaulting party shall take such immediate action as may be necessary. Notwithstanding the foregoing, the nondefaulting party may, in its sole and absolute discretion, grant a longer cure period. Should the defaulting party fail to cure the default within the time period provided in this Section, the nondefaulting party shall have the right, in addition to any other rights the nondefaulting party may have at law or in equity, to terminate this Agreement. Compliance with the provisions of this Section 7.2 shall be a condition precedent to bringing any legal action, and such compliance shall not be a waiver of any party's right to take legal action in the event that the dispute is not cured.

7.3 Retention of Funds - Progress payments shall be made in accordance with the provisions of Section 2.2 of this agreement. In accordance with said section, City shall pay Contractor a sum based upon ninety-five percent (95%) of the contract price apportionment of the labor and materials incorporated into the work under the contract during the month covered by said statement. The remaining five percent (5%) thereof shall be retained as performance security to be paid to the Contractor within sixty (60) days after final acceptance of the work by the City Council, after Contractor shall have furnished City with a release of all undisputed contract amounts if required by City. In the event there are any claims

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specifically excluded by Contractor from the operation of the release, the City may retain proceeds (per Public Contract Code 7107) of up to 150% of the amount in dispute. City's failure to deduct or withhold shall not affect Contractor's obligations hereunder.

7.4 Waiver - No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default shall impair such right or remedy or be construed as a waiver. A party's consent to or approval of any act by the other party requiring the party's consent or approval shall not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and shall not be a waiver of any other default concerning the same or any other provision of this Agreement.

7.5 Rights and Remedies are Cumulative Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

7.6 Legal Action - In addition to any other rights or remedies, either party may take legal action, law or in equity, to cure, correct or remedy any default, to recover damages for any default, to compel specific performance of this Agreement, to obtain declaratory or injunctive relief, or to obtain any other remedy consistent with the purposes of this Agreement.

7.7 Liquidated Damages - Since the determination of actual damages for any delay in performance of this Agreement would be extremely difficult or impractical to determine in the event of a breach of this Agreement, the Contractor and its sureties shall be liable for and shall pay to the City Five Hundred Dollars (\$500) as liquidated damages for each working day of delay in the performance of any service required hereunder, as specified in the Scope of Services (Exhibit "A") or "Schedule of Performance" (Exhibit B). The City may withhold from any moneys payable on account of services performed by the Contractor any accrued liquidated damages.

7.8 Termination for Default of Contractor - If termination is due to the failure of the Contractor to fulfill its obligations under this Agreement, Contractor shall vacate any City owned property which Contractor is permitted to occupy hereunder and City may, after compliance with the provisions of Section 7.2, take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable to the extent that the total cost for completion of the services required hereunder exceeds the compensation herein stipulated (provided that the City shall use reasonable efforts to mitigate such damages), and City may withhold any payments to the Contractor for the purpose of setoff or partial payment of the amounts owed the City as previously stated.

8. CITY OFFICERS AND EMPLOYEES, NONDISCRIMINATION

8.1 Non-liability of City Officers and Employees - No officer or employee of the City shall be personally liable to the Contractor, or any successor in interest, in the event of any default or breach by the City or for any amount which may become due to the Contractor or to its successor, or for breach of any obligation of the terms of this Agreement.

8.2 Conflict of Interest - The Contractor warrants that it has not paid or given and will not pay or give any third party any money or other consideration for obtaining this Agreement.

8.3 **Covenant Against Discrimination** - Contractor covenants that, by and for itself, its heirs, executors, assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of race, color, creed, religion, sex, marital status, national

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origin, or ancestry in the performance of this Agreement. To the extent required by law, contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, color, creed, religion, sex, marital status, national origin, or ancestry.

9. MISCELLANEOUS PROVISIONS

9.1 Notice - Any notice, demand, request, document, consent, approval, or communication either party desires or is required to give to the other party or any other person shall be in writing and shall be deemed to be given when served personally or deposited in the US Mail, prepaid, first-class mail, return receipt requested, addressed as follows:

To City: City of Colusa
425 Webster Street
Colusa, California 95932
Attn.:

To Contractor:

9.2 Interpretation - The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply.

9.3 Integration; Amendment It is understood that there are no oral agreements between the parties hereto affecting this Agreement and this Agreement supersedes and cancels any and all previous negotiations, arrangements, agreements and understandings, if any, between the parties, and none shall be used to interpret this Agreement. This Agreement may be amended at any time by the mutual consent of the parties by an instrument in writing.

9.4 Severability. In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement which are hereby declared as severable and shall be interpreted to carry out the intent of the parties hereunder unless the invalid provision is so material that its invalidity deprives either party of the basic benefit of their bargain or renders this Agreement meaningless.

9.5 Hiring of Illegal Aliens Prohibited - Contractor shall not hire or employ any person to perform work within the City of Colusa or allow any person to perform work required under this Agreement unless such person is properly documented and legally entitled to be employed within the United States.

Unfair Business Practices Claims - In entering into a public works 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 awarding

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body 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. Sec. 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 shall be made and become effective at the time the awarding body renders final payment to the contractor without further acknowledgment by the parties. (Sec. 7103.5, California Public Contract Code).

9.7 Corporate Authority - The persons executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound.

9.8 **Independent Contractor** - The Contractor is and shall at all times remain as to the City, a wholly independent contractor. Neither the City, nor any of their officer, employees or agents shall have control over the conduct of the Contractor or any of the Contractors' officers, employees or agents, except as herein set forth. The Contractor shall not at any time or in any manner represent that it or any of its officers, employees or agents are in any manner officers, employees or agents of the City, nor shall City officers, employees or agents be deemed the officers, employees, or agents of Contractor as a result of this Agreement.

9.9 **Legal Responsibilities** - The Contractor shall keep itself informed of City, State, and Federal laws, ordinances and regulations, which may in any manner affect the performance of its services pursuant to this Agreement. The Contractor shall at all times observe and comply with all such laws, ordinances and regulations. Neither the City, nor their officers, agents, or employees shall be liable at law or in equity as a result of the Contractor's failure to comply with this section.

9.10 **Termination for Convenience** – The City may terminate this Agreement without cause for convenience of the City upon giving contractor 30 days prior written notice of termination of the Agreement. Upon receipt of the notice of termination the Contractor shall cease all further work pursuant to the Agreement. Upon such termination by the City the Contractor shall not be entitled to any other remedies, claims, actions, profits, or damages except as provided in this paragraph. Upon the receipt of such notice of termination Contractor shall be entitled to the following compensation:

1. The contract value of the work completed to and including the date of receipt of the notice of termination, less the amount of progress payments received by contractor.
2. Actual move-off costs including labor, rental fees, equipment transportation costs, the costs of maintaining on-site construction office for supervising the mover-off.
3. The cost of materials custom made for this Agreement which cannot be used by the Contractor in the normal course of his business, and which have not been paid for by City in progress payments.
4. All costs shall not include any markups as might otherwise be allowed by any plans or specifications which were a part of the Agreement.

The provisions of this paragraph shall supersede any other provision of the Agreement or any provision of any plans, specification, addendums or other documents which are or may become a part of this Agreement. City and Contractor agree that the provisions of this paragraph are a substantive part of the consideration for this Agreement.

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IN WITNESS WHEREOF, the parties have executed and entered into this Agreement as of the date first written above.

ATTEST:

CITY OF COLUSA,
a municipal corporation

By: _____ By: _____
City Clerk Mayor

APPROVED AS TO FORM:

City Attorney

CONTRACTOR:

By: _____
(Print)

By: _____
(Print)

Signature: _____

Signature: _____

Title: _____

Title: _____

Address: _____

Address: _____

EXHIBIT A

Scope of Services – Waterline Improvements

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASUREMENT	EST. QTY.	ITEM PRICE	TOTAL LINE AMOUNT
1	Mobilization	LS	1	_____	_____
2	Abandon E. Water Sys.	LS	1	_____	_____
3	Abandon Wells Lota A	LS	1	_____	_____
4.	Connect w/ City Water	Each	2	_____	_____
5	10" PVC Water Main	LF	570	_____	_____
6	8" PVC Water Main	LF	6150	_____	_____
7	10" Gate Valve	Each	2	_____	_____
8	8" Gate Valve	Each	24	_____	_____
9	Fire Hydrants	Each	20	_____	_____
10	2" Blow-off	Each	8	_____	_____
11	1" Water Service	Each	73	_____	_____
12	Water System Testing	LS	1	_____	_____
13	Keyway Grinding	LF	11,860	_____	_____
14	Geotextile Installation	SY	25000	_____	_____
15	2 ½" FRAC	TONS	3700	_____	_____

TOTAL BID AMOUNT _____

DATE: _____

SIGNATURE: _____

Scope of Services – Sanitary Sewer Improvements

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASUREMENT	EST. QTY.	ITEM PRICE	TOTAL LINE AMOUNT
1	Mobilization	Lump Sum	1	_____	_____
2	Connect to Existing Sewer Manhole		3	_____	_____
3	12" PVC SDR-35 Lineal Foot		2110	_____	_____
4	10" PVC SDR-35 Lineal Foot		1020	_____	_____
5	8" PVC SDR-25 Lineal Foot		2600	_____	_____
6	48" Sewer Manhole	Each	20	_____	_____
7	Sewer Service Lateral w/ Cleanout	Each	73	_____	_____
8	8" Sewer Main Cleanout	Each	6	_____	_____
9	Abandon Existing House Septic System	Each	72	_____	_____

TOTAL BID AMOUNT _____

DATE: _____

SIGNATURE: _____

EXHIBIT B

Schedule of Performance

As defined in City of Colusa Construction Specifications Section 4

CITY OF COLUSA

DEPARTMENT OF PUBLIC WORKS

PERFORMANCE BOND

(To Accompany Contract)

Bond No. _____

WHEREAS, the City of Colusa , acting by and through the Department of Public Works, has awarded to Contractor _____, hereafter designated as the “Contractor”, a contract for the work described as follows:

Construction of 8” water mains and metered services for 73 parcels. Connection to the City of Colusa municipal water system. Construction of sewer mains and services to 73 parcels with connections to 72 existing home sewers. Connection with City of Colusa Sanitary Sewer system. Asphalt road overlay.

AND WHEREAS, the Contractor is required to furnish a bond in connection with said contract, guaranteeing the faithful performance thereof:

NOW, THEREFORE, we the undersigned Contractor and Surety are held firmly bound to the City of Colusa in the sum of \$ _____ dollars (\$ _____), to be paid to said City / County or its certain attorney, its successors and assigns: for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if the above bound Contractor, 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 agreements in the foregoing contract 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 intent and meaning, and shall indemnify and save harmless the City of Colusa , its officers and agents, as therein stipulated, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, We have hereunto set our hands and seals on this _____ day of _____, 20__.

Correspondence or claims relating to this bond _____
should be sent to the surety at the following _____
address: _____

Contractor

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Name of Surety (SEAL)

By : Attorney-in-Fact

NOTE: Signatures of those executing for the surety must be properly acknowledged.

CERTIFICATE OF ACKNOWLEDGEMENT

State of California,
City / County of _____ SS

On this _____ day of _____ in the year 20__ before me _____, a notary public in and for the City / County of _____, personally appeared _____, known to me to be the person whose name is subscribed to this

Attorney-in-fact

instrument and known to me to be the attorney-in-fact of _____ and acknowledged to me that he/she subscribed the name of the said company thereto as surety, and his/her own name as attorney-in-fact.

(SEAL) Notary Public

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CITY OF COLUSA

DEPARTMENT OF PUBLIC WORKS

PAYMENT BOND

(Section 3247, Civil Code)

WHEREAS, The City of Colusa, acting by and through the Department of Public Works, hereafter referred to as "Obligee", has awarded to Contractor _____, hereafter designated as the "Principal", a contract for the work described as follows:

Construction of 8" water mains and metered services for 73 parcels. Connection to the City of Colusa municipal water system. Construction of sewer mains and services to 73 parcels with connections to 72 existing home sewers. Connection with City of Colusa Sanitary Sewer system. Asphalt road overlay.

AND WHEREAS, said Principal is required to furnish a bond in connection with said contract, to secure the payment of claims of laborers, mechanics, materialmen and other persons as provided by law.

NOW, THEREFORE, we the undersigned Principal and Surety are bound unto the Obligee in the sum of _____ dollars (\$ _____), for which payment, we bind ourselves, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if said Principal or its subcontractors shall fail to pay any of the persons named in Civil Code Section 3181, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by such claimant, or any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board for the wages of employees of the Principal and his subcontractors pursuant to Section 18806 of the Revenue and Taxation Code, with respect to such work and labor, that the surety herein will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the surety will pay a reasonable attorney's fee to fixed by the court.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 3181 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Dated: _____, 20 ____

Correspondence or claims relating to this bond _____
should be sent to the surety at the following _____
address: _____

Principal

Surety (SEAL)

By : Attorney-in-Fact

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NOTE: Signatures of those executing for the surety must be properly acknowledged.

CERTIFICATE OF ACKNOWLEDGEMENT

State of California

City / County of _____ SS

On this _____ day of _____ in the year 20 ____ before me _____, personally appeared _____, personally known to me (or proved to me

Attorney-in-fact

on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument as the attorney-in-fact of _____ and acknowledged to me that he/she subscribed the name of the said company thereto as surety, and his/her own name as attorney-in-fact.

(SEAL) Notary Public

SUPPLEMENTAL INFORMATION TO BE COMPLETED BY PRINCIPAL

If an individual, so state. If a firm or co-partnership, state the firm and give the names of all individual co-partners composing the partnership. If a Corporation, state legal name of corporation; state also the names of the president, secretary, treasurer and manager thereof.

Business Address:

Telephone Number:

Date:

Print Name:

Principal

Signature:

Title

TAX IDENTIFICATION NUMBER

The Tax Equity and Fiscal Responsibility Act of 1982 requires the payer (City of Colusa) to report to the Internal Revenue Service taxable payments to payees.

You (as a payee) are required by law to provide us with your Taxpayer Identification Number (if an individual or partnership, your Social Security Number). If you do not provide us with your correct identification number, you may be subject to a penalty imposed by the Internal Revenue Service. The payments subject to withholdings may include, but are not limited to, interest, dividends, or other payments the City of Colusa and/or the Colusa Redevelopment Agency made to you. Other payments may include rents, royalties, commissions and fees for service of non-employees.

If you are exempt from income tax, we are still required, by law, to maintain a Tax Identification Number on file. **PLEASE PROVIDE YOUR TAX IDENTIFICATION NUMBER next to the appropriate listing below, sign, date and return to:**

CITY OF COLUSA FINANCE DEPARTMENT
401 E. Chapman
Colusa, CA 92870

Exempt: Yes___ No___ Telephone () _____

CORPORATION: _____

U.S.A. OR ANY AGENCIES THEREOF: _____

IRS CODE #501 TAX-EXEMPT ORGANIZATION: _____

A NON-COMMISSIONED CITY OF W.C. EMPLOYEE: _____

SOLE PROPRIETOR: _____

A PARTNERSHIP: _____

OTHER: _____ (Explain)

Signature/Title: _____ Date: _____

INFORMATION ONLY, NOT TO BE COMPLETED WITH BID
GUARANTEE

TO THE CITY OF COLUSA
PROJECT NO. 0610002-002C AND
PROJECT NO. D2201019, C-06-8421-110

As a material inducement to the City to award the contract for Project Numbers 0610002-002C, D2201019, C-06-8421-110 to _____, the undersigned (“Guarantor”) has agreed to enter into this guarantee. The Guarantor hereby unconditionally guarantees to the fullest extent allowed by law the following work included in this project: (“the work”).

Guarantor guarantees that the materials and equipment used by itself and its subcontractors will be free from defects and that the work will conform to the plans and specifications. Should any of the materials or equipment prove defective or should the work as a whole, or any part thereof, prove defective for any reason whatsoever (except due to intentional torts by the City), or should the work as a whole or any part thereof fail to operate properly or fail to comply with the plans and specifications, Guarantor will, at the City’s sole election: 1) reimburse the City, upon written demand, for all of the City’s expenses incurred replacing or restoring any such equipment or materials, including the cost of any work necessary to make such replacement or repairs; or 2) replace any such defective material or equipment and repair said work completely, all without any cost to the City. Guarantor further guarantees that any such repair work will conform to the plans and specifications for the project. This guarantee will remain in effect for five years from the date on which the contracted for work is accepted for use by the City.

Guarantor understands and agrees that the City shall have the unqualified option to make any replacements or repairs itself or to have such replacement, repair, performed by the undersigned. The City shall have no obligation to consult with Guarantor before the City proceeds to perform any repair, replacement, or work itself. If the City elects to have Guarantor perform said repair, replacement, or work, Guarantor agrees that the repair, replacement, or work shall be performed within 15 days after receipt of a written demand from the City.

If the City elects to perform the replacement, repairs itself, Guarantor agrees to make reimbursement payment within 15 days after receipt of a written demand for payment from the City.

If the Guarantor fails or refuses to comply with this guarantee, the City shall be entitled to all costs and expenses, including attorneys and expert fees, reasonably incurred by reason of Guarantor’s failure or refusal.

Guarantor _____
Contractor: _____
Title: _____

Date: _____
By: _____

STATEMENT OF NON COLLUSION BY CONTRACTOR

The undersigned who submits herewith to the City of Colusa a bid or proposal does hereby certify:

That all statements of fact in such bid or proposal are true;

That such bid or proposal was not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation;

That such bid or proposal is genuine and not collusive or sham;

That said bidder has not, directly or indirectly by agreement, communication or conference with anyone, attempted to induce action prejudicial to the interest of the City of Colusa or of any other bidder or anyone else interested in the proposed procurement;

Did not, directly or indirectly, collude, conspire, connive or agree with anyone else that said bidder or anyone else would submit a false or sham bid or proposal, or that anyone should refrain from bidding or withdraw his bid or proposal;

Did not in any manner, directly or indirectly seek by agreement, communication or conference with anyone to raise or fix the bid or proposal price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost element of his bid or proposal price, or that of anyone else;

Did not, directly or indirectly, submit his bid or proposal price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member agent thereof, or to any individual or group of individuals, except to the City of Colusa, or to any person or persons who have a partnership or their financial interest with said bidder in his business.

Did not provide, directly or indirectly to any officer or employee of the City of Colusa any gratuity, entertainment, meals, or anything of value, whatsoever, which could be objectively construed as intending to invoke any form of reciprocation or favorable treatment.

That no officer or principal of the undersigned firm is related to any officer or employee of the city by blood or marriage within the third degree or is employed, either full or part time, by the City of Colusa either currently or within the last two (2) years.

That no officer or principal of the undersigned firm nor any subcontractor to be engaged by the principal has been convicted by a court of competent jurisdiction of any charge of fraud, bribery, collusion, conspiracy or any other act in violation of any state or federal antitrust law in connection with the bidding upon award of, or performance of, any public work contract, with any public entity, within the last three years.

I certify, under penalty of perjury under the laws of the State of California, that the foregoing is true and correct and that this certification was executed:

On _____ at _____ California.

Firm _____

(Signature)

Street _____

(Print Name & Title)

City _____ State _____ Zip _____

**CONTRACTOR'S/SUBCONTRACTOR'S CERTIFICATION
CONCERNING STATE LABOR STANDARDS AND PREVAILING WAGES**

All contractors and subcontractors shall give the following certification to the grantee and forward this certification to the grantee within 10 days after the execution of any contract or subcontract.

- A. "I am aware of the provisions of Section 1720 et seq. of the California Labor Code which requires that the State prevailing wage rate shall be paid to employees where this rate exceeds the Federal wage rate."

- B. "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."

- C. "It is further agreed that, except as may be provided in Section 1815 of the California Labor Code, the maximum hours a worker is to be employed is limited to eight hours a day and 40 hours a week and the subcontractor shall forfeit, as a penalty, \$25 for each worker employed in the execution of the subcontract for each calendar day during which a worker is required or permitted to labor more than eight hours in any calendar day or more than 40 hours in any calendar week."

(Contractor/Subcontractor)

By _____
(Signature) (Typed Name and Title) (Date)

Grant Agreement Provisions

Non-Discrimination Clause

During the performance of this Agreement, Contractor and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave. Contractor and subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Contractor and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12990 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement.

Anti-Lobbying Certification

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and no more than \$100,000 for such failure.

Contractor certifies, to the best of his or her knowledge or belief, that:

No Federal appropriated funds have been paid or will be paid, by or on behalf of it, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement;

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, it will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Conflict of Interest

Contractor needs to be aware of the following provisions regarding current or former state employees. If Contractor has any questions on the status of any person rendering services or involved with the Agreement, the awarding agency must be contacted immediately for clarification.

Current State Employees (Public Contracts Code section 10410):

No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.

No officer or employee shall contract on his or her own behalf as an independent Contractor with any state agency to provide goods or services.

Former State Employees (Public Contracts Code section 10411):

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For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.

For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

If Contractor violates any provisions of above paragraphs, such action by Contractor shall render this Agreement void. (Public Contracts Code section 10420).

Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (Public Contracts Code section 10430(e)).

Conflict of Interest of Members, Officers, or Employees of Contractors, Member of Local Governing Body, or other Public Officials

No member, officer, or employee of the Contractor, or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercise any functions or responsibilities with respect to the program during his/her tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for grant activities to be performed in connection with the program assisted under this agreement. The Contractor shall incorporate, or cause to be incorporated, in all such contracts or subcontracts a provision prohibiting such interest pursuant to the purposes of this section.

Conflict of Interest of Certain Federal Officials

No member of or delegate to the Congress of the United States, and no resident commissioner, shall be admitted to any share or part of this agreement or to any benefit to arise from the same.

Equal Opportunity

The Civil Rights, Housing and Community Development, and Age Discrimination Acts Assurances

During the performance of this agreement, the Contractor assures that no otherwise qualified person shall be excluded from participation or employment, denied program benefits, or be subjected to discrimination based on race, color, national origin, sex, age, handicap, religion, familial status, or religious preference, under any grant activity funded by this agreement, as required by Title VI of the Civil Rights Act of 1964, Title I of the Housing and Community Development Act of 1974, as amended, the Age Discrimination Act of 1975, the Fair Housing Amendment Act of 1988, and all implementing regulations.

Rehabilitation Act of 1973 and the "504 Coordinator"

The Contractor further agrees to implement the Rehabilitation Act of 1973, as amended, and its regulations, 24 CFR Part 8, including, but not limited to, for Contractors with 15 or more permanent full or part-time employees, the local designation of a specific person charged with local enforcement of this Act, as the "504 Coordinator."

The Training, Employment, and Contracting Opportunities for Business and Lower Income Persons Assurance of Compliance

The grant activity to be performed under this agreement is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u. Recipients, contractors, and subcontractors shall direct their efforts to provide, to the greatest extent feasible, training and employment opportunities generated from the expenditure of section 3 covered assistance to section 3 residents in order of priority provided in 24 CFR 135.34(a)(2).

The parties to this agreement will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this agreement. The parties to this agreement certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.

The Contractor will include these Section 3 clauses in every contract and subcontract for work in connection with the grant activity and will, at the direction of the State, take appropriate action pursuant to the contract or subcontract upon a finding that the Contractor or any subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR Part 135 and,

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will not let any contract unless the Contractor or subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this agreement shall be a condition of the Federal financial assistance provided to the grant activity, binding upon the Contractor, its successors, and assigns. Failure to fulfill these requirements shall subject the Contractor and its subcontractors, its successors, and assigns to those sanctions specified by the agreement through which federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

Assurance of Compliance with Requirements Placed on Construction Contracts of \$10,000 or more

The Contractor hereby agrees to place in every contract and subcontract for construction exceeding \$10,000 the Notice of Requirement for Affirmative Action to ensure Equal Employment Opportunity (Executive Order 11246), the Standard Equal Employment Opportunity, and the Construction Contract Specifications. The Contractor furthermore agrees to insert the appropriate Goals and Timetables issued by the U.S. Department of Labor in such contracts and subcontracts.

Insurance

The Contractor shall have and maintain in full force and effect during the term of this agreement such forms of insurance, at such levels, as may be determined by the City/County and the State to be necessary for specific components of the grant activity, including, but not limited to, worker's compensation insurance, unemployment insurance, disability insurance and liability insurance.

Drug-Free Workplace Requirements

Contractor shall comply with the requirements of the Drug-Free Workplace Act of 1990 (Government Code Section 8350 et seq.) and shall provide a drug-free workplace by taking the following actions:

Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations.

Establish a Drug-Free Awareness Program to inform employees about: (1) the dangers of drug abuse in the workplace; (2) the Contractor's policy of maintaining a drug-free workplace; (3) any available counseling, rehabilitation and employee assistance programs; (4) penalties that may be imposed upon employees for drug abuse violations.

Every employee who works on the proposed contract will: (1) receive a copy of the Contractor's drug-free workplace policy statement; and (2) agree to abide by the terms of the Contractor's statement as a condition of employment under this agreement.

Failure to comply with these requirements may result in suspension of payments under the Agreement or termination of the Agreement or both and Contractor may be ineligible for award of any future contracts if it is determined that any of the following has occurred: (1) the Contractor has made false certification, or violated the certification by failing to carry out the requirements as noted above. (Government Code section 8350 et seq.)

Child Support Compliance Act

For all contracts in excess of \$100,000, by executing this agreement, Contractor acknowledges and agrees to the following:

The Contractor recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and

The Contractor, to the best of his/her knowledge, is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

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Retention and Inspection of Records

Contractor agrees that the Department of Housing and Community Development or its delegate will have the right to review, obtain, and copy all records pertaining to performance of the contract. Contractor agrees to provide HCD or its delegate with any relevant information requested and shall permit HCD or its delegate access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting and copying such books, records, accounts, and other material that may be relevant to a matter under investigation for the purpose of determining compliance with PCC § 10115 et seq., GC § 8546.7 and 2 CCR § 1896.60 et seq. Contractor further agrees to maintain such records for a period of four (4) years after final payment under this contract.

Contractor shall comply with the caveats and be aware of the penalties for violations of fraud and for obstruction of investigation as set forth in PCC § 10115.10.

Subcontractors

The Contractor shall not enter into any agreement, written or oral, with any subcontractor without the prior determination by the City/County of the subcontractor's eligibility. A subcontractor is not eligible to receive grant funds if the subcontractor is not licensed in good standing in California, or is listed on the Federal Consolidated List of Debarred, Suspended, and Ineligible Contractors.

The agreement between the Contractor and any subcontractor shall require the subcontractor to:

Perform the grant activity in accordance with Federal, State and local housing and building codes as are applicable.

Comply with the applicable State and Federal requirements pertaining to labor standards, non-discrimination, Americans with Disabilities Act, Equal Employment Opportunity, and Drug-Free Workplace.

Maintain at least the minimum State-required Worker's Compensation Insurance for those employees who will perform the grant activity or any part of it.

Maintain, if so required by law, unemployment insurance, disability insurance and liability insurance in an amount to be determined by the State which is reasonable to compensate any person, firm, or corporation who may be injured or damaged by the contractor or any subcontractor in performing the grant activity or any part of it.

Retain all books, records, accounts, documentation, and all other materials relevant to this agreement for a period of four (4) years from the date of termination of this agreement, or four (4) years from the conclusion or resolution of any and all audits or litigation relevant to this agreement and any amendments, whichever is later.

Permit the State, Federal government, the Bureau of State Audits, the Department of Housing and Community Development and/or their representatives, upon reasonable notice, unrestricted access to any or all books, records, accounts, documentation, and all other materials relevant to the agreement for the purpose of monitoring, auditing, or otherwise examining said materials.

Independent Contractor

Contractor, and the agents and employees of Contractor, in the performance of the Agreement, shall act in an independent capacity and not as officers, employees or agents of the City/County/State. The City/County/State will monitor for conformity with the State contract.

CITY OF COLUSA
CONSTRUCTION SPECIFICATIONS

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SECTION 1.

TERMS AND DEFINITIONS

1-1 GENERAL

Whenever the following terms, titles, or abbreviations are used in these Specifications or in any document or instrument where these Specifications govern, the intent and meaning shall be as herein defined. Working titles having a masculine gender, such as "workman" and "journeyman" and the pronoun "he", are utilized in the specifications for the sake of brevity, and are intended to refer to persons of either gender.

1-2 ABBREVIATIONS

Abbreviation	Description
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
AC	Asphalt Concrete
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
APA	American Plywood Association
ASA	American Standards Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American Wire Gage
AWS	American Welding Society
AWWA	American Water Works Association
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CL	Centerline
CSI	Construction Specifications Institute
CY	Cubic Yards
DI	Drop Inlet
EA	Each
EP	Edge of Pavement
FS	Federal Specifications or Finished Surface
Inv	Invert

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Abbreviation	Description
ISA	International Society of Arboriculture
LB	Pound
LF	Linear Feet
LS	Lump Sum
NBFU	National Board of Fire Underwriters
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Act
PCC	Portland Cement Concrete
SD	Storm Drain
SF	Square Foot/Feet
SS	Sanitary Sewer
STA	Station
Title 8	Title 8 (Construction Safety Orders) of the California Code of Regulations
Title 19	Title 19 (Public Safety) of the California Code of Regulations
Title 24	Title 24 (Building Standards) of the California Code of Regulations
TOC	Top of Curb
Typ.	Typical
UL	Underwriters' Laboratories, Inc.
UBC	Uniform Building Code (latest edition adopted by Agency)
USBR	United States Bureau of Reclamation
UMC	Uniform Mechanical Code (latest edition adopted by Agency)
UPC	Uniform Plumbing Code (latest edition adopted by Agency)
WCLA	West Coast Lumbermen's Association
WIC	Woodwork Institute of California

DEFINITIONS

Term	Description
Agency	Shall mean the City of Colusa acting through its authorized representatives unless the context of a particular document section means another County, State or Federal Agency as appropriate.
Allowance	An amount of money set aside under the Contract for a special purpose identified in the Contract.
Architect and/or Consulting Engineer	A person or persons, firm, partnership, joint venture, corporation, or combination thereof or authorized representative thereof, acting in the capacity of consultant to the Agency. The Architect or Consulting Engineer shall issue directions to the Contractor only through the Agency. When the Specifications require that approval be obtained from the Architect or Consulting Engineer, such approval shall be requested from and be given by the Agency.
As Shown, Etc.	Where "as shown", "as latest indicated", "as detailed", or words of similar import are used, the reference is to the Contract unless specifically stated otherwise. Where "as directed", "as permitted", "approved", or words of similar import are used, they shall mean the direction, permission, or approval of the Agency.
Bid	When submitted on the prescribed bid form, properly signed and guaranteed, the Bid constitutes the offer of the Bidder to complete the Work at the price shown on the Bidder's bid form.
Bidder	Any person, persons, firm, partnership, joint venture, corporation, or combination thereof, submitting a Bid for the Work, acting directly or through a duly authorized representative.
Bid Documents	The sum of the documents that comprise the Bid by a Bidder to perform the Work.
Bid Opening	The event conducted by the Agency during which the sealed Proposals submitted by Bidders to perform the Work are opened and publicly read.
Board of Supervisors	The Board of Supervisors of the County of Colusa, a political subdivision of the State of California. Also referred to as "Board"
Board of Directors	The Board of Directors of the special district or agency named in the Notice to Contractors. Also referred to as "Board"
Calendar Day	Every day shown on the calendar. When the Contract Time is stated in Calendar Days, every day will be charged toward the Contract Time.
City Council	The City Council of the City of Colusa, a Municipal Corporation.

Term	Description
Contract	The written agreement signed by the Agency and the Contractor covering the Work and the furnishing of labor, materials, tools, and equipment in the construction of the Work. The Contract shall include the Notice to Contractors, Bid, Plans, Specifications, Special Provisions, contract bonds, and any project-specific specifications or documents; also any and all supplemental agreements amending or extending the Work contemplated and which may be required to complete the Work in a substantial and acceptable manner. Supplemental agreements are written agreements covering alterations, amendments, or extensions to the Contract and include Contract Change Orders.
Contract Change Order	A Contract amendment approved by the Agency or by the Board that includes, but is not limited to, alterations, deviations, additions to, or deletions from, the Contract which are required for the proper completion of the Work.
Contractor	The person or persons, firm, partnership, joint venture, corporation, or combination thereof, private or municipal, who (that) has (have) entered into a Contract, as defined in these Specifications, with the Agency.
Contract Time	The time stated in the Contract for completion of the Work. The Contract Time may be a single allotment of time, a group of times specific to portions of the Work, or a combination of the two.
County	The County of Colusa, a political subdivision of the State of California.
Engineer	The City Engineer of the City of Colusa, or Agency Engineer of the district or agency for which work will be done under these Specifications, acting personally or through agents or assistants duly authorized by the Engineer. The City Engineer shall represent the Contracting Agency unless otherwise stated in the Contract Documents.
Estimated Quantities	The list of items of work and the estimated quantities associated with the Work. The Estimated Quantities provide the basis for the Bid.
Inspector	The person or persons authorized to act as agent(s) for the Agency in the inspection of the Work.
Greenbook	Standard Specifications and Standard Plans for Public Works Construction, 2003 Edition, written by Public Works Standards, Inc., published by BNI ® Building News.
Notice To Contractors	The written notice whereby interested parties are informed of the date, location, and time of the Bid Opening of a proposed Agency Project and the terms and conditions of submitting Bids to perform the Work.
Notice To Proceed	The written authorization by the Agency to the Contractor specifying the date the Work may begin and any conditions regarding the beginning of the Work.
Plans	The plans, drawings, profiles, cross sections, Working Drawings, and Supplemental Drawings, or reproductions thereof, approved by the Agency, which show the locations, character, dimensions, and details of the Work.
Project	Shall mean the Work.

Term	Description
Proposal	Shall mean "Bid"
Record Drawings	Drawings prepared by the designer that document changes to, additions to, or deductions from the Plans, and which represent the Work as constructed.
Schedule of Values	A statement furnished by the Contractor to the Agency reflecting the portions of the Total Contract Price allotted for the various parts of the Work for each work activity contained on the project schedule. Unless otherwise indicated in the Specifications, the total of the Schedule of Values shall equal the full cost of the Work, including all labor, material, equipment, overhead, and profit. For lump sum contracts, the Schedule of Values is the basis for reviewing the Contractor's application for progress payments.
Special Provisions	The Special Provisions are specific clauses setting forth conditions or requirements peculiar to the Work and supplementary to these Standard Construction Specifications.
Standard Construction Specifications	The directions, provisions, and requirements contained herein. When the term "Standard Specifications" or "these Specifications" is used, it means the provisions as set forth herein, together with any amendments or revisions that may be set forth in the Special Provisions. The Standard Specifications are comprised of "General Provisions" and "Technical Provisions".
Standard Drawings or Plans	The Standard Drawings of the Agency, which are incorporated into the Standard Construction Specifications, and made a part of the Plans by reference to one or more specific Standard Drawings.
State	The State of California.
State Specifications	The version of the Standard Specifications of the State of California, Department of Transportation, in effect at the time of Notice to Contractors.
State Plans	The version of the Standard Plans of the State of California, Department of Transportation, in effect at the time of Notice to Contractors.
Subcontractor	A properly licensed party under contract to and responsible to the Contractor for performing a specified part of the Work; or a properly licensed party under contract and responsible to a Subcontractor of the Contractor.
Supplemental Drawing	Supplemental Drawings define the Plans or Specifications in greater detail by providing additional information that may have not been specifically or clearly shown or called out on the Plans or in the Specifications.
Technical Provisions	The provisions of the Standard Construction Specifications that describe the technical aspects of the Work.
Total Contract Price	The total price for the Work as bid by the Contractor, including any additions or subtractions made via Contract Change Orders.

Term	Description
Work	All actions which the Contractor is contractually required to do as specified, indicated, shown, contemplated, or implied in the Contract to construct the Work, including all alterations, amendments, or extensions made by Contract Change Order or other written orders or directives of the Agency. Unless specified otherwise in the Contract, the Work includes furnishing all materials, supplies, equipment, tools, labor, transportation, supervision, and all incidentals necessary to complete the Work.
Working Day	Any day except: (a) Saturdays, Sundays, and Agency’s legal holidays; (b) days on which the Contractor is specifically required by the Special Provisions or by law to suspend construction operations; or (c) days on which the Contractor is prevented from proceeding with the current controlling operation or operations of the Work for at least five (5) hours per day due to inclement weather, or conditions resulting immediately therefrom.
Working Drawings	Working Drawings detail a particular item of work and the manner in which it is to be accomplished or performed. Working Drawings are prepared by the Contractor as a submittal or a portion of a submittal and may be specifically requested by the Agency or required in the Contract or a Field Instruction or other written directive.

UNITS OF MEASURE

U.S. Standard Measures, also called U.S. Customary System or “English”, shall be the principal system of measurement used for construction, unless otherwise stated in the Contract Documents. Whenever a dual set of measurements are shown on referenced Standard Plans, the U.S. Customary System shall be used. SI or metric measurements are acceptable when they are the only set of measurements shown on reference Plans or Specifications.

SECTION 2.

BID REQUIREMENTS AND CONDITIONS

2-1 BID FORM

The Agency will furnish to each prospective Bidder a bid form which, when properly completed and executed, must be submitted as the Bidder's Bid for the Work. All Bids must be submitted on the Agency-furnished bid form to be valid and accepted. Bids that are not submitted on the Agency-furnished bid form will be rejected. The completed bid form shall be in English and legible, and shall be properly signed in longhand by the Bidder, if an individual, by a member of a partnership, by an officer of a corporation authorized to sign contracts on behalf of the corporation, or by an agent of the Bidder. If submitted by a corporation, the Bid shall show the name of the state under the laws of which the corporation is chartered or organized.

The Bid shall be made on the bid form in clearly legible figures as follows:

2-1.01 UNIT PRICE BID

Where the bid for an item of work is to be submitted on a unit price basis, the Bidder shall bid a unit price as total compensation for completion of one unit of the work described under that item. This price shall be multiplied by the Estimated Quantity included in the bid form to derive a total bid price for that item. The total amount bid for a unit price contract shall be entered on the space provided on the bid form as a grand total of all individual items.

The Estimated Quantities included on the bid form are approximate and are only included in the bid form as a basis for comparison of Bids. The Agency does not, expressly or by implication, represent or agree that the actual amount of work will equal the approximate Estimated Quantities. Payment will be made for the actual quantity of Work performed in accordance with the Contract. The Agency reserves the right to increase or decrease the amount of any class or portion of the Work, or to omit portions of the Work, as may be deemed necessary or advisable in the sole discretion of the Agency. For compensation for alterations in quantities of work, including deviations greater than twenty-five percent (25%), see Section 9-8.02, "Payment for Changes - Unit Prices", of these Specifications.

2-1.02 LUMP SUM BID

Where the bid for an item of work is to be submitted on a "Lump Sum" or "Job" basis, a single lump-sum price shall be submitted in the appropriate place on the bid form. Items bid on a lump-sum basis shall result in a complete structure, operating plant, or system, in satisfactory working condition with respect to the functional purposes of the installation, as described in the Contract, and no extra compensation will be paid for anything omitted but fairly implied.

2-1.03 ALLOWANCES

Where specific allowance items have been entered on the bid form by the Agency, the total amount entered on the bid form shall be included in the Total Bid Price. However, the total amount to be paid for the Work included in the Allowance shall be the amount of the Allowance actually utilized in the course of completing the Work.

2-2 PREPARATION AND SUBMISSION OF BIDS

By submission of a Bid, the Bidder acknowledges acceptance of the nature and location of the Work, the general and local conditions, conditions of the site, the character, quality and scope of work to be performed, the availability of labor, electric power, water, the kind of surface and subsurface materials on the site, the materials and equipment to be furnished, and all requirements of the Contract or other matters which may affect the Work or the cost. Any failure of a Bidder to become acquainted with all of the available information concerning conditions will not relieve the Bidder from the responsibility for estimating properly the difficulties or cost of the Work.

The Bidder declares by the submission of a Bid that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the Bid is genuine and not collusive or a sham; that the Bidder has not directly or indirectly Induced or solicited any other Bidder to put in a false or sham Bid, and has not directly or indirectly colluded or agreed with any Bidder or anyone else to put in a sham Bid or to refrain from bidding; that the Bidder has not directly or indirectly sought by agreement, communication, or conference with anyone to fix the Bid price or the Bid price of any other Bidder, or to fix any overhead, profit, or cost element of such Bid price or that of any other Bidder, or to secure any advantage against the Agency, anyone interested in the Bid as principal, or those named within the Bid; that all statements contained in the Bid are true; that the Bidder has not directly or indirectly submitted a Bid price or any breakdown thereof or the contents thereof, or divulged information or data relative thereto, to any other person, partnership, corporation or association, except to person or persons as have a direct financial interest in the Bidder's general business.

Bid prices shall include everything necessary for the completion of the Work and fulfillment of the Contract, including but not limited to furnishing all materials, equipment, tools, excavation sheeting, bracing and supports, plant, labor and services, except as may be provided otherwise in the Contract. Bid prices shall include all Federal, State, and local taxes, and all other fees and costs not expressly paid for by the Agency as stated in the Special Provisions.

The Bid shall be submitted in a sealed envelope as directed in the Notice to Contractors. The Bidder shall plainly mark the exterior of the envelope in which the Bid is submitted to indicate that it contains a Bid for the project for which the Bid is submitted, and the date of the Bid opening therefore.

Bids submitted in envelopes that are not properly marked will be rejected.

2-2.01 AGENCY EMPLOYEES AND DESIGN ENGINEERS MAY NOT BID ON CONSTRUCTION CONTRACT

No employee of the Agency shall be eligible to submit a proposal for, nor to subcontract for any portion of, nor to supply any materials for any contract administered by the City.

No engineering or architectural firm which has provided design services for a project shall be eligible to submit a proposal for the contract neither to construct the project nor to subcontract for any portion of the work. The ineligible firms include the prime contractor for design, subcontractors of portions of the design and affiliates of either. An affiliate is a firm which is subject to the control of the same persons, through joint ownership or otherwise.

2-3 EXAMINATIONS OF PLANS, SPECIFICATIONS, AND SITE OF WORK

The Bidder shall examine carefully the site of the proposed Work and the Plans, Specifications and Bid Documents, and shall be satisfied as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. The submission of a Bid shall be conclusive evidence that the Bidder is satisfied through the Bidder's own investigation as to the conditions to be encountered; the character, quality, quantity and scope of work to be performed; and the materials and equipment to be furnished.

If material discrepancies or apparent material errors are found in the Plans and Specifications prior to the date of bid opening, an Addendum may be issued (see Section 2-9, "Addenda", in this Section of these Specifications). Otherwise, in figuring the Work, Bidders shall consider that any discrepancies or conflict between Plans and Specifications will be governed by Section 4-1, "Intent of Contract Documents".

2-4 SUBSURFACE CONDITIONS

Where investigations of subsurface conditions have been made by the Agency with respect to subsurface conditions, utilities, foundation, or other structural designs, and that information is shown in the Plans, it represents only a statement by the Agency as to the character of materials which have actually been encountered by the Agency's investigation. This information is only included for the convenience of Bidders.

Investigations of subsurface conditions are made for the purpose of design only. The Agency assumes no responsibility with respect to the sufficiency or accuracy of borings or of the log of test borings or other preliminary investigations or of the interpretation thereof. There is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Work, or any part of it, or that unanticipated conditions may not occur. When a log of test borings is included in the Plans, it is expressly understood and agreed that said log of test borings does not constitute a part of the Contract. The log of test borings represents only an opinion of the Agency as to the character of the materials to be encountered, and is included in the Plans only for the convenience of the Bidders. Making information available to Bidders is not to be construed in any way as a waiver of the provisions of the first paragraph of this Section, and Bidders must satisfy themselves through their own investigations as to conditions to be encountered.

2-5 CONTRACTORS/SUBCONTRACTORS REQUIRED TO BE LICENSED

The Bidder shall be licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code to do the type of work contemplated in the project, and shall be skilled and regularly engaged in the general class or type of work called for under the contract. The specific type of license required will be indicated in the "Notice to Contractors". Unless specified otherwise in the Special Provisions, the Bidder shall indicate the license number and class in the space provided for that purpose on the bid form.

All Subcontractors engaged to perform portions of the Work shall be licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code to do the type of work for which they are subcontracted, and shall be skilled and regularly engaged in the general class or type of work called for under their subcontracts.

Attention is also directed to the provisions of Public Contract Code Section 20103.5, which addresses Contractor licensing requirements. The Agency may not award the Contract if it cannot be verified that the low Bidder is an appropriately licensed Contractor at the time of Contract award.

2-6 COMPETENCY OF BIDDERS

It is the intention of the Agency to award a Contract only to a Bidder who furnishes satisfactory evidence that the Bidder has the requisite experience and ability, and has sufficient capital, facilities, and plant to enable the Contractor to prosecute the Work successfully and promptly, and to complete the Work within the time stated in the Contract.

If required by the Special Provisions, a statement of experience and business standing, together with that of all Subcontractors that were designated in the Bid, shall be submitted on an Agency-provided form by the three (3) apparent low Bidders within seven (7) days after the opening of Bids. To determine the experience of a Bidder, any relevant evidence will be considered that the Bidder, or personnel, has satisfactorily performed on other contracts of similar nature and magnitude or difficulty.

2-7 DISQUALIFICATION OF BIDS

More than one Bid from any individual, firm, partnership, corporation or association, under the same or different names, will not be considered. Reasonable ground for believing that any Bidder is interested in more than one Bid for the Work will cause rejection of all Bids in which such Bidder is interested. If there is reason to believe that collusion exists among Bidders, none of the participants of such collusion will be considered.

2-8 JOINT VENTURE BIDS

If two or more prospective Bidders desire to bid jointly as a joint venture on a single project, the joint venture Bid must be accompanied by a notarized copy of a valid license issued to the joint venture by the Contractor's State License Board. If a copy of the joint venture license is not filed with the Bid, the Bid will be rejected.

2-9 SUBCONTRACTORS

In accordance with the Subletting and Subcontracting Fair Practices Act, of the Public Contract Code, Section 4100 et seq., each Bidder shall list in the bid form:

1. The name and the location of the place of business of each Subcontractor whom the Bidder proposes to perform work or labor or render service to the prime Contractor in or about the construction of the Work, or a Subcontractor licensed by the State of California who, under subcontract to the prime Contractor, is proposed by the Bidder to specially fabricate and install a portion of the Work according to detailed drawings contained in the Contract, in an amount in excess of one-half of one percent (0.5%) of the Total Bid or, in the case of a Bid for the construction of streets or highways, including bridges, in excess of one-half of one percent (0.5%) of the Bidder's Total Bid or ten thousand dollars (\$10,000), whichever is greater.
2. The portion of the Work [type of work and percentage if not one hundred percent (100%)] that will be done by each Subcontractor. The Bidder shall list only one Subcontractor for each portion as is defined by the Bidder in the Bid.

If a Bidder fails to specify a Subcontractor for any portion of the Work to be performed under the Contract (or specifies more than one Subcontractor for the same work), the Bidder agrees that the Bidder is fully qualified and shall perform that portion of the Work. If after the award of the Contract, the Contractor subcontracts any portion of the Work, except as provided in Section 4107 or 4109 of the Act, the Contractor shall be subject to the penalties specified in Section 4111 of the Act.

A listed Subcontractor shall perform with the Subcontractor's own organization and with workers under the Subcontractor's immediate supervision, work of a value of not less than seventy-five percent (75%) of the value of each item of work for which the Subcontractor is listed. Pursuant to Public Contract Code Section 6109, a Contractor may not perform work with a Subcontractor who is ineligible to perform work on public works projects pursuant to Labor Code Sections 1777.1 and 1777.7.

The apparent low Bidder shall submit the license numbers of all Subcontractors to the Agency within three (3) days, not counting Saturdays, Sundays, and holidays, of Bid opening. If the low Bidder is not the apparent low Bidder, the low Bidder shall submit the license numbers of all listed subcontractors to the Agency within three (3) days, not counting Saturdays, Sundays, and holidays, of the date notified.

The Contractor shall include provisions in every Subcontract that the Contract between the Contractor and the Agency is part of the Subcontract, and that all terms and provisions of the Contract are incorporated in the Subcontract. Copies of all Subcontracts shall be available to the Agency upon written request.

2-10 ADDENDA

The correction of any material discrepancies in, or material additions to/omissions from, the Plans, Specifications, or other Contract, or any interpretation thereof, during the bidding period will be made only by an Addendum issued by the Agency. A copy of each Addendum issued by the Agency will be mailed or delivered to each planholder listed on the Agency planholder list and is a part of the Contract. Any interpretation or explanation not included in the addenda will not be considered binding.

2-11 ASSIGNMENT OF ANTITRUST ACTIONS

The Bidder is required to comply with Public Contract Code Section 7103.5(b), which addresses assignment of antitrust actions.

2-12 BID GUARANTEE

The Bid shall be accompanied by a Bid Guarantee in the form of cash, a certified check, a cashier's check, or a bidder's bond in the form provided by the Agency. The Bid Guarantee shall be executed by an admitted surety insurer in favor of the Agency, the amount of which shall be not less than ten percent (10%) of the Base Bid amount, or other security acceptable to the Agency. No Bid will be considered unless accompanied by a Bid Guarantee.

The Agency is authorized to forfeit such Bid Guarantee as necessary to reimburse for costs incurred for failure of the successful Bidder to enter into a contract. The amount of the Bid Guarantee shall not be deemed to constitute a penalty or liquidated damages. The Agency is not precluded by a Bid Guarantee from recovering from the defaulting Bidder damages in excess of the amount of said Bid Guarantee incurred as a result of the failure of the successful Bidder to enter into a contract with the Agency for the Work.

2-13 WITHDRAWAL OF BID

A Bid may be withdrawn at any time prior to the hour fixed in the Notice to Contractors for the submission of Bids by a written request of the Bidder filed with the Agency at the location where the Bid was submitted. The withdrawal of a Bid will not prejudice the right of a Bidder to file a new Bid within the time prescribed.

2-14 PUBLIC OPENING OF BIDS

Bids will be opened and read publicly at the time and place indicated in the Notice to Contractors or in a subsequent Addendum. Bidders or their authorized representatives and other interested parties are invited to be present.

2-15 REJECTION OF BIDS

The Agency reserves the right to reject any and all Bids. The Agency reserves the right to waive irregularities in a Bid and to make an award in the best interest of the Agency.

Bids containing omissions, erasures, alterations, conditions, or additions not called for may be rejected.

2-16 RELIEF OF BIDDERS

Bidder shall comply with Public Contract Code Sections 5100 through 5107, concerning relief of Bidders and in particular to the requirement therein that if the Bidder claims a material mistake was made in its Bid, the Bidder shall give the Agency written notice within five (5) days after the opening of the Bids (excluding Saturdays, Sundays, or legal holidays) of the alleged mistake, explaining in the notice in detail how the mistake occurred.

2-17 BID PROTESTS

As set forth in the Resolution of Disputes Regarding the Bidding Process form to be included with the bids, any Bidder may file a protest against the award of the Contract to any other Bidder. All Bidders shall be provided with notice of the date and time of the City Council meeting at which the award of the Contract for the Project shall be considered. All Bidders will be provided with an opportunity to bring to the City Council's attention disputes and/or protests regarding the bidding process. No Bidder may bring any action or proceeding challenging the bidding process unless the alleged grounds for the dispute and/or protest are presented to the City Council before or during the meeting referenced herein, and before action by the City Council on award of the Contract. Any Bidder complying with these procedures may bring an action within sixty (60) Calendar Days from the action of the City Council, in accordance with Section 860 of the California Code of Civil Procedure, to determine the validity of the City Council's action on the award of the Contract.

See form for Resolution of Disputes Regarding the Bidding Process governing the procedures for disputes and/or protests regarding the bidding process.

SECTION 3.

AWARD AND EXECUTION OF CONTRACT

3-1 AWARD OF CONTRACT

The award of the Contract, if the Contract is to be awarded, will be to the lowest responsive, responsible Bidder. In addition to price in determining the lowest responsive, responsible Bidder, consideration will be given to;

1. The ability, capacity and skill of the Bidder to perform the Work;
2. The ability of the Bidder to perform the Work within the time specified, without delay;
3. The ability of the Bidder to perform the Work in a safe manner;
4. The character, integrity, reputation, judgment, experience and efficiency of the Bidder; and
5. The quality of the Bidder's performance on previous work with the Agency.

3-2 TIME OF AWARD

The award, if made, will be made within thirty (30) days after the Bid Opening unless specified otherwise in the Bid Document. If the lowest responsive, responsible Bidder refuses or fails to execute the Contract, the Agency may award the Contract to the second lowest responsive, responsible Bidder. The specified period of time within which the award of the Contract may be made may be subject to extension for further periods as agreed upon in writing by the Agency and the Bidder.

3-3 CONSIDERATION OF BIDS

After the Bids have been opened and read, they will be checked for accuracy and compliance with the Specifications.

In the event that the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern and the correct product of the unit price and the estimated quantity shall be deemed to be the amount bid. If the sum of two or more items in a bidding schedule or the sum of two or more bidding schedules does not equal the total amounts quoted, the individual item or schedule amounts shall govern and the correct total shall be deemed to be the amount bid. If the Bid is missing the unit price, then it may be deemed incomplete and the Bid may be rejected.

After the Agency has made any necessary corrections in mathematical errors appearing on the face of the Bid, all Bids will be compared based on the bid form.

3-4 PERFORMANCE AND PAYMENT BONDS

The format of the Performance Bond and Payment Bond forms shall be those contained in the Bid Document.

As part of the execution of the Contract, the successful Bidder shall furnish the following corporate surety bonds to the benefit of the Agency. Bonds shall be executed by a surety company authorized to do business in the State of California and listed in the current Federal Department of Treasury Circular 570. When the amount to be paid to the Contractor is based upon units of work to be performed or items to be provided, the term "Total Contract Price" as used below for the purpose of posting Performance and

Payment Bonds shall be computed on the basis of the unit price bid multiplied by the Estimated Quantities of work to be performed.

3-4.01 PERFORMANCE BOND

The Performance Bond, to guarantee the performance of all covenants and stipulations of the Contract, shall be on the form provided by the Agency and shall be in a sum not less than one hundred percent (100%) of the original Total Contract Price as set forth in the Contract.

3-4.02 PAYMENT BOND

The Payment Bond, to guarantee the payment of wages and of bills contracted for materials, supplies, or equipment used in the performance of the Contract, shall be on the form provided by the Agency and shall be in a sum not less than one hundred percent (100%) of the original Total Contract Price as set forth in the Contract.

3-5 NOTIFICATION OF SURETY COMPANIES

The surety company shall be familiar with all the provisions and conditions of the Contract. It is understood and agreed that the surety company waives notice of change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or to the specifications accompanying the same, or any other act or acts by the Agency or the Agency's authorized agents under the terms of the Contract; and failure to so notify the surety company of changes shall in no way relieve the surety company of its obligations under the Contract.

3-6 RETURN OF BID GUARANTEES

After Bids have been received and reviewed by the Agency, Bid Guarantees will be returned to the respective Bidders except those submitted by the three lowest responsive, responsible Bidders.

Bid Guarantees for Bids not to be further considered in executing the Contract will be returned within ten (10) days after the award of the Contract. The Bid Guarantees of the three lowest responsive, responsible Bidders will be returned within ten (10) days after the successful Bidder has filed satisfactory bonds and proof of insurance as specified and the Bidder and the Agency have executed the Contract.

If all Bids are rejected and no award is made, all Bid Guarantees will be returned within ten (10) days of the decision of the City Council to not award the Contract.

3-7 EXECUTION OF CONTRACT

The Contract shall be executed by the successful Bidder and returned to the Agency, together with the Performance Bond, Payment Bond, certificates of insurance, and endorsements within ten (10) working days of the Bidder's receipt of the documents. Insurance certificates shall be signed by a person authorized by the insurer to bind coverage on its behalf and shall be accompanied by copies of all endorsements required by Section 3-9 in this Section of these Specifications. When requested by the Agency, the successful bidder shall furnish complete, certified copies of all required insurance policies, including endorsements specifically required by Section 3-9. After execution by the Agency, one copy of the Contract, bonds, and certificates of insurance will be returned to the Contractor.

3-8 FAILURE TO EXECUTE CONTRACT

If the Bidder to whom the Contract is awarded fails to execute the Contract and file acceptable bonds and insurance certificates as provided herein within ten (10) days from the time the Contract forms are received by the Bidder, the award may be annulled and the Bidder's Bid Guarantee forfeited to the

Agency. At the Agency's discretion, the Contract may then be awarded to the next lowest responsive, responsible Bidder.

If the Agency awards the Contract to the second lowest responsive, responsible Bidder, the amount of the lowest responsive, responsible Bidder's Bid Guarantee shall be applied by the Agency to the difference between the lowest Bid and the Bid of the second lowest responsive, responsible Bidder, and the surplus, if any, will be returned to the lowest responsive, responsible Bidder if a check or cash is used, or credited to the surety on the Bidder's Bond if a bond is used.

On refusal or failure of the second lowest responsive, responsible Bidder to execute the Contract, the Agency may award it to the third lowest responsive, responsible Bidder. If the Agency awards the Contract to the third lowest responsive, responsible Bidder, in addition to application of the lowest Bidder's Bid Guarantee as aforesaid, the amount of the second lowest responsive, responsible Bidder's Bid Guarantee shall be applied by the Agency to the difference between the Bid of the second lowest responsive, responsible Bidder and the Bid of the third lowest responsive, responsible Bidder, and the surplus, if any, shall be returned to the second lowest responsive, responsible Bidder if a check or cash is used, or credited to the surety on the second lowest Bidder's Bid Bond if a bond is used.

3-9 INSURANCE

The Contractor shall procure, maintain, and keep in force at all times during the term of the Contract, at the Contractor's sole expense, the following insurance;

General Liability

General Liability insurance including, but not limited to, protection for claims of bodily injury and property damage liability, personal and advertising injury liability, and products and completed operations liability. Coverage shall be at least as broad as "Insurance Services Office Commercial General Liability Coverage Form CG 0001" (occurrence). The limits of liability shall be not less than;

Each Occurrence	One Million Dollars (\$1,000,000)
Personal & Advertising Injury	One Million Dollars (\$1,000,000)
Products and Completed Operations Aggregate	Two Million Dollars (\$2,000,000)
General Aggregate	Two Million Dollars (\$2,000,000)
Fire Damage	One Hundred Thousand Dollars (\$100,000)

The policy shall cover contractual liability applicable to the Contractor's assumed liability under this Contract.

The policy shall provide coverage for claims arising out of subsidence. The Products and Completed Operations coverage shall be maintained for at least two years after completion of the Contract.

3-9.01 AUTOMOBILE LIABILITY

Automobile Liability insurance providing protection against claims of bodily injury and property damage arising out of ownership, operation, maintenance, or use of owned, hired, and non-owned automobiles. Coverage shall be at least as broad as "Insurance Services Office Business Auto Coverage Form CA 0001," symbol 1 (any auto). The limits of liability shall not be less than:

Bodily Injury and Property Damage Combined Single Limit	One Million Dollars (\$1,000,000)
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Workers' Compensation

Workers' Compensation insurance is required, with coverage by the State of California (unless the Contractor is a qualified self-insurer with the State of California), and Employers' Liability coverage. The limits of Employers' Liability shall not be less than:

Each Accident	One Million Dollars (\$1,000,000)
Disease Each Employee	One Million Dollars (\$1,000,000)
Disease Policy Limit	One Million Dollars (\$1,000,000)

The Workers' Compensation policy required hereunder shall be endorsed to state that the Workers' Compensation carrier waives its right of subrogation against the City, its officers, officials, employees, agents or volunteers.

In the event the Contractor is self-insured, the Contractor shall furnish a Certificate of Permission to Self-Insure by the Department of Industrial Relations Administration of Self-Insurance, Sacramento.

Excess or Umbrella Liability

If the Special Provisions require limits of general liability insurance of more than one million dollars (\$1,000,000) per occurrence, the Contractor shall carry excess or umbrella liability insurance providing excess coverage at least as broad as the underlying coverage for general, automobile and employer's liability with a limit equal to the amount stated in the Special Provisions per occurrence and aggregate.

Contractor's Equipment

The Contractor, and each of its Subcontractors, shall separately insure its own equipment for loss and damage. The Contractor's Property and Inland Marine policies shall include, or be endorsed to include, a waiver of subrogation against the Agency, its officers, officials, employees, agents, and volunteers which might arise by reason of damage to the Contractor's property or equipment (owned, leased or borrowed) in connection with work performed under this Contract by the Contractor.

Railroad Protective Liability

When stated as a requirement in the Special Provisions, the Contractor shall procure, maintain, and keep in force at all times during the term of the Contract, at the Contractor's sole expense, Railroad Protective Liability insurance with limits of liability as set forth in the Special Provisions.

Builder's Risk Insurance

When stated as a requirement in the Special Provisions, the Contractor shall procure, maintain, and keep in force at all times during the term of the Contract and until the date of transfer of the insurable interest to and acceptance by the Agency, at the Contractor's sole expense, Builder's Risk insurance with limits of liability equal to one hundred percent (100%) of the replacement cost of the Work.

6. Coverage shall be written on a completed value, non-reporting form, on a replacement cost basis, and shall cover the property against all risks of physical loss or damage including:
 - a. land movement and flood

- b. loss that ensues from design error, defective materials, or faulty workmanship
- c. mechanical breakdown or electrical damage including testing, magnetic disturbance and changes in temperature or humidity.

The property covered shall include the Work, including any materials, equipment, or other items to be incorporated therein while the same are located at the construction site, stored off site, while in transit or at the place of manufacture. The policy shall contain a provision that both the interests of the Agency and the Contractor are covered and that any loss shall be payable to the Agency and the Contractor as their interests may appear.

When stated as a requirement in the Special Provisions, Builders Risk insurance shall include Delay in Opening coverage with limits of liability, and for the period of time, as set forth in the Special Provisions. Coverage shall include debt service, expense, loss of earnings or rental income or other loss incurred by the Agency, without deduction, due to the failure of the project being completed on schedule.

- 7. The maximum deductible for land movement and flood allowable under this policy shall be five percent (5%) of replacement value at the time loss or one hundred thousand dollars (\$100,000), whichever is less, per occurrence and in the aggregate. The maximum deductible for all other perils allowable under this policy shall be ten thousand dollars (\$10,000). All deductibles shall be borne solely by the Contractor, and the Agency shall not be responsible to pay any deductible, in whole or in part.
- 8. The Agency and the Contractor waive all rights against each other and against all other contractors for loss or damage to the extent reimbursed by Builders' Risk insurance or any other property or equipment insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance. If the policies of insurance referred to in this section require an endorsement or consent of the insurance company to provide for continued coverage where there is a waiver of subrogation, the owners of such policies will cause them to be so endorsed to obtain such consent.
- 9. If not covered by Builders' Risk insurance or any other property or equipment insurance required by this Contract, the Contractor shall procure, maintain, and keep in force at all times during the term of the Contract, at the Contractor's sole expense, property insurance for portions of the Contractor's work and/or equipment to be incorporated therein stored offsite or in transit.

Environmental Liability Insurance

When stated as a requirement in the Special Provisions, the Contractor shall procure, maintain, and keep in force at all times during the term of the Contract, at the Contractor's sole expense, Environmental Liability insurance which includes coverage for sudden and accidental pollution arising out of the handling of hazardous materials or hazardous wastes, and coverage for liability arising out of the handling of asbestos. If coverage for Environmental Liability insurance is written on a claims-made form, the following provisions apply:

- 10. The "Retro Date" must be shown, and must be on or before the date of the Contract or the beginning of the Work.
- 11. Insurance must be maintained and evidence of insurance must be provided for at least one (1) year after completion of the Contract.
- 12. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a "Retro Date" prior to the Contract effective date, the Contractor

must purchase "extended reporting" coverage for a minimum of one (1) year after completion of the Contract.

OTHER PROVISIONS

13. The Contractor's General Liability, Automobile Liability, and any Excess or Umbrella Liability, shall contain the following provisions:
 - a. The Agency, its officers, officials, employees, agents, and volunteers shall be covered as additional insured as respects liability arising out of the activities performed by or on behalf of the Contractor, products and completed operations of the Contractor, premises owned, occupied, or used by the Contractor, or automobiles owned, leased, hired, or borrowed by the Contractor. The policy shall contain no special limitations on the scope of coverage afforded to the Agency, its officers, officials, employees, agents, or volunteers.
 - b. For any claims related to this Contract, the Contractor's insurance coverage shall be primary insurance as respects the Agency, its officers, officials, employees, agents, or volunteers. Any insurance or self-insurance maintained by the Agency, its officers, officials, employees, agents, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
 - c. Any failure to comply with reporting or other provisions of the policies on the part of the Contractor, including breaches of warranties, shall not affect coverage provided to the Agency, its officers, officials, employees, agents, or volunteers.
14. The Contractor's General Liability and any Excess or Umbrella Liability insurance policies shall contain an endorsement stating that any aggregate limits shall apply separately to the Work.
15. 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.
16. Each insurance policy shall state that coverage shall not be suspended, voided, cancelled by the Contractor or the Agency, reduced in scope of coverage or in limits, non-renewed, or materially changed unless the insurer(s) provide thirty (30) days written notice by certified mail to the Agency prior to such change- Ten (10) days prior written notice by certified mail shall be given to the Agency in the event of cancellation due to nonpayment of premium.
17. All of the Contractor's insurance coverage, except as noted below, shall be placed with insurance companies with a current A.M. Best rating of at least A-VII.
Exceptions;
 - a. Underwriters at Lloyd's of London, which are not rated by A.M. Best,
 - b. Workers' Compensation which is provided through a State Compensation Insurance Fund or a qualified self-insurer for Workers' Compensation under California law.
 - c. For liability insurance required under Section 3-9.04D (Environmental Liability insurance), insurance requirements shall be placed with insurance companies with a current A.M. Best rating of at least B+;VII.

18. The Contractor shall sign and file with the Agency the following certification prior to performing any work of a Contract. This certification is included in the Contract. Signature and return of the Contract shall constitute signing and filing of the said certification:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of the Code, and I will comply with such provisions before commencing the performance of the Work of this Contract."
19. The Agency, at its discretion, may require new types of insurance coverage or increase the limits of insurance coverage required hereunder at any time during the term of the Contract by giving thirty (30) days written notice to the Contractor. Contractor shall immediately procure such insurance or increase the limits of coverage and provide certificates of insurance, including copies of all required endorsements, to the Agency within thirty (30) days of receipt of the Agency's request.
20. The required insurance coverage shall be subject to the approval of the Agency, but any acceptance of insurance certificates by the Agency shall in no way limit or relieve the Contractor of its duties and responsibilities in this Contract.
21. If the Contractor fails to procure or maintain insurance as required by this Section and any Special Provisions, or fails to furnish the Agency with proof of such insurance, the Agency, at its discretion, may procure any or all such insurance. Premiums for such insurance procured by the Agency shall be deducted and retained from any sums due the Contractor under the Contract. Failure of the Agency to obtain such insurance shall in no way relieve the Contractor from any of the Contractor's responsibilities under the Contract. Any failure of the Contractor to maintain any item of the required insurance is sufficient cause for termination of the Contract.
22. The making of progress payments to the Contractor shall not be construed as relieving the Contractor of responsibility for loss or damage, or destruction occurring prior to final acceptance by the Agency.
23. The Agency is authorized to execute amendments and waivers, with or without conditions, to the insurance requirements of the Contract. The Agency will provide such amendments or waivers in writing to the Contractor. The failure of the Agency to enforce in a timely manner any of the provisions of this Section shall not act as a waiver to enforcement of any of these provisions at any time during the term of the Contract.

Notification of Accident or Occurrence

The Contractor shall report by telephone to the Agency within twenty-four (24) hours and also report in writing to the Agency within fifteen (15) days after the Contractor or any subcontractors or agents have knowledge of any accident or occurrence involving death of or injury to any person or persons, or damage in excess of ten thousand dollars (\$10,000) to the Work, property of the Agency or others, arising out of any work done by or on behalf of the Contractor as part of the Contract. Such report shall contain:

24. The date and time of the occurrence,
25. The names and addresses of all persons involved, and

26. A description of the accident or occurrence and the nature and extent of injury or damage.

SECTION 4.

SCOPE OF WORK

4-1 INTENT OF CONTRACT DOCUMENTS

The Work shall be performed and completed according to the Contract documents. The Contract documents provide the details for completing the Work in accordance with the terms of the Contract. Each Contract document is an integral part of the Contract, and a requirement occurring in one is as binding as though occurring in all. The Contract documents shall be interpreted as being explanatory and complementary in requiring complete work ready for use and occupancy or operation in satisfactory working condition with respect to the functional purposes of the installation.

The Contractor shall do all of the work and furnish all labor, materials, tools, equipment, and appliances, except as otherwise herein expressly stipulated, necessary or proper for performing and completing the work herein required, including any Change Order work or disputed work directed by the Agency in conformity with the true meaning and intent of the Contract drawings, Specifications, and all provisions of the Contract, within the time specified.

The Contractor shall perform, with the Contractor's own organization and with workers under the Contractor's immediate supervision, work of a value not less than fifty percent (50%) of the value of original Total Contract Price less "Specialty Items". "Specialty Items" may be performed by subcontract and the cost of any "Specialty Items" so performed may be deducted from the original Total Contract Price before computing the amount of work required to be performed by the Contractor. Where an entire item is subcontracted, the value of work subcontracted will be based on the Contract item bid price. When a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated percentage of the contract item bid price, determined from information submitted by the Contractor, subject to approval by the Agency. "Specialty Items" will be identified by the Agency in the project Special Provisions.

All work shown on the Plans, the dimensions of which are not figured, shall be accurately followed to the scale to which the drawings are made; however, figured dimensions shall in all cases be followed, even if they differ from scaled measurements. Full-size drawings shall be followed in the execution of the Work.

If the Contract does not specifically allow the Contractor a choice of quality or cost of items to be furnished, but could be interpreted to permit such a choice, the Contractor shall furnish the highest quality under current industry standards, regardless of the cost of the item.

Unless otherwise specified, the Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, material, and transportation necessary to perform and complete the Work in a good and workmanlike manner to the satisfaction of the Agency, in the manner designated, and in strict conformity to the Contract. When portions of the Work are described in general terms, but not in complete detail, it is understood that the Contractor will employ only the best general practice and incorporate only the best quality materials and workmanship in the Work.

No extra compensation will be allowed for anything omitted but fairly implied. The prices paid for the various items will include full compensation for furnishing all labor, materials, tools, equipment, overhead, and incidentals and doing all work necessary to complete the Work as provided in the Contract. The prices paid include all markups and profit.

If the Contractor discovers any discrepancies during the course of the Work between the Contract drawings and conditions in the field, or any errors or omissions in the Contract drawings and conditions in the field, or any errors or omissions in the Contract drawings, the Specifications, or in the layout given

by stakes, points, or instructions, it shall be the Contractor's duty to inform the Agency immediately, and the Agency shall promptly verify the same. Any work done after such discovery, until authorized by the Agency, will be done at the Contractor's risk.

Differing Site Conditions

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering those conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the Engineer will investigate the conditions, and if the Engineer determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The Engineer will notify the Contractor of the Engineer's determination whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No contract adjustment will be allowed under the provisions specified in this section for any effects caused on unchanged work.

Any contract adjustment warranted due to differing site conditions will be made in conformance with the provisions in Section 4-1.03, "Changes," except as otherwise provided.

Hazardous or Toxic Materials

For any work which involves digging trenches or other excavations that extend deeper than four feet below the surface, the following provisions shall apply:

27. The Contractor shall promptly, and before the following conditions are disturbed, notify the Engineer, in writing, of any:
 - a. Material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, and that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
 - b. Subsurface or latent physical conditions at the site differing from those indicated.
 - c. 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.
28. The Engineer shall promptly investigate the conditions, and if he 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, then the Engineer shall issue a change order under the procedures described in the contract.
29. That, in the event that a dispute arises between the Agency 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 Agency and the Contractor.

4-2 PLANS AND SPECIFICATIONS FURNISHED

The Agency will provide, at no cost to the Contractor, copies of Project Plans, Specifications and Special Provisions (Contract Documents), except Standard Specifications, Standard Drawings or Standard Plans, and the fully executed Contract for the Contractor's use in prosecuting the Work. The total number of copies of the provided documents shall equal the total of the prime Contractor plus the number of Subcontractors listed in the Bid. The Contractor may purchase additional copies at cost.

The Contractor shall retain an approved set of Contract documents on the Job during the progress of the Work. This set shall be used by the Contractor as the Record Drawings as described in Section 11-3, "Record Drawings", of these Specifications.

4-3 CONFORMANCE WITH CODES AND STANDARDS

The Work shall be in full compliance with the latest adopted edition of the following applicable standards and regulations:

30. State Fire Marshal
31. UBC
32. Title 8
33. Title 24
34. NEC
35. UPC
36. Other codes, laws or regulations applicable to the Work or the Contract.

Nothing in the Contract is to be construed to permit work not conforming to these requirements. When the work detailed in the Plans and Specifications differs from governing codes, the Contractor shall complete the Work in accordance with the higher standard. If the higher standard is more expensive than the work detailed in the Plans and Specifications, the Contractor will be compensated for the Contractor's additional costs by Contract Change Order as provided in Section 9, "Changes and Claims", of these Specifications.

4-4 SUPPLEMENTAL DRAWINGS

In addition to the Plans incorporated in the Contract at the time of signing, the Agency may furnish Supplemental Drawings as necessary to clarify or define in greater detail the intent of the Contract. In furnishing such Supplemental Drawings, the Agency may make minor changes in the Work, not involving extra cost and not inconsistent with the nature of the Work. The Supplemental Drawings shall become a part of the Contract.

4-5 FIELD INSTRUCTIONS OR OTHER WRITTEN DIRECTIVES

The Engineer may issue Field Instructions or other written directives during the course of the Work, and the Contractor shall comply with the Field Instruction or other written directive. A Field Instruction or other written directive may be used to add, delete, modify, or reject work, to note deficiencies in work, to clarify the Contract or to order work to be performed. Work required by a Field Instruction or other

written directive shall be in accordance with the Contract and any previously executed Contract Change Orders, except as delineated otherwise in the Field Instruction or other written directive. Drawings included with Field Instructions or other written directives are part of the Contract and shall be incorporated into the Record Drawings.

If the Contractor refuses or neglects to comply with or make progress in the execution of any Field Instruction or other written directive, the Agency may employ any person or persons to perform such work, and the Contractor shall not interfere with the person or persons so employed.

At appropriate intervals, Field Instructions and other written directives that alter the Contract will be grouped to form a Contract Change Order as described in Section 9, "Changes and Claims", of these Specifications,

4-6 DOCUMENT PRECEDENCE

The component Contract documents are intended to provide explanation for each other. Any work shown on the Plans and not in the Specifications, or vice versa, is to be executed as if indicated in both. In case of conflict in the Contract, the following order of precedence will govern interpretation of the Contract:

37. Field Instructions or other written directives
38. Special Provisions and Project-specific Specifications
39. Project Plans
40. City Standard Drawings
41. City Standard Specifications
42. Other Referenced Standard Plans
43. Other Referenced Standard Specifications

Any work for which there are no provisions in these Specifications, the Special or Technical Provisions, or on the Contract drawings, shall be performed in accordance with the provisions of the Standard Specifications.

4-7 REQUESTS FOR INFORMATION

4-7.01 GENERAL

Contractor shall prepare a Request for Information (RFI) when additional information, clarification, or interpretation of the Contract is required. RFI's may also be used for apparent conflicts, inconsistencies, ambiguities, or omissions.

RFI's shall be submitted to the Agency sufficiently in advance of the work to permit time for investigation and preparation of a response. Any work undertaken prior to receipt of a response to an RFI will be at the Contractor's risk.

RFI's shall not be used for submittals or for substitution of material or equipment, or for waiving of requirements.

4-7.02 PROCEDURE

An RFI shall be submitted on an approved form as defined at the preconstruction meeting, and shall be numbered consecutively. A status log shall be prepared and updated by the Contractor and reviewed with the Agency at each progress meeting. Each RFI shall deal with only one topic, item, issue, or system.

The RFI shall clearly describe and specifically state what is being requested. Relevant portions of the Contract shall be cited, marked-up, and attached.

The Contractor shall review each RFI before submittal and compare it with the Contract to verify that a response is required. RFI's will only be accepted from the Contractor and not from Subcontractors or suppliers.

A recommendation or proposed solution may be included when appropriate or expedient. RFI's that are not clear or RFI's for which a response is clearly identified in the Contract will not be accepted.

Response

The Agency will normally respond within fifteen (15) Working Days. The Agency will provide a written response, and that response shall control.

The Contractor shall indicate a priority for responses to RFI's if more than five (5) RFI's are pending at the same time. In case of a dispute between the Contractor and the Agency, protest may be made as provided in Section 9-16, "Dispute Regarding Contract Requirements", of these Specifications.

Subsequent resubmittals of an RFI shall be identified with the same RFI number and a letter designation. Resubmittals shall clearly state the reason for the resubmittal.

Responses to RFI's shall be recorded by the Contractor on the Record Documents in accordance with Section 11-3, "Record Drawings", of these Specifications,

4-8 DELETED ITEMS

The Agency may delete from the Work any item of work. The Contractor will be paid for all work done toward the completion of the item prior to such omission, as provided in Section 9, "Changes and Claims", of these Specifications but in no event will the amount paid exceed the Bid or Schedule of Values amount less the value of the deleted work.

The Contractor shall make no claim, nor receive any compensation for profits, for loss of profit, for damages, or for any extra payment whatever because of any deleted items of work.

4-9 EXTRA WORK

Work not covered by the Contract but necessary for the proper completion of the Project will be classed as extra work and shall be performed by the Contractor when directed in writing by the Agency. Extra work shall be performed in accordance with the Contract and as directed by the Agency.

Extra work must be authorized in writing by the Agency before the work is started. Payment for extra work will not be made unless such prior written authorization is obtained.

In the event of an emergency or other situation that endangers the Work or endangers public safety, the Agency will direct the Contractor to perform such extra work necessary to protect the Work or the public.

4-10 USE OF COMPLETED PORTIONS

The Agency has the right during the progress of the Work to take over and place in service any completed or partially completed portion of the Work. Taking possession shall not be deemed acceptance of any other portions of the Work, nor work on those portions not completed in accordance with the Contract.

4-11 LANDS AND RIGHTS-OF-WAY

The Agency shall provide the lands, rights-of-way, and easements upon which the Work is to be done, and such other lands as may be designated on the Plans for the use of the Contractor. The Contractor shall confine his operations to within these limits.

The Contractor shall provide at the Contractor's own expense any additional land and access that is required for temporary construction facilities or storage of materials. The Contractor shall obtain all required permissions for use of private property prior to taking possession or use. The permission shall be obtained in writing and a copy forwarded to the Agency prior to the Contractor taking possession of said property.

4-12 WARRANTY

The Performance Bond furnished by the Contractor as part of the execution of the Contract shall define the terms and time period of the Warranty of the Contractor's work unless otherwise specified in the Special Provisions. If no time period is specified in the Bond, the time period will be one year after field acceptance of Work (see Section 7-21, "Final Inspection and Field Acceptance", of these Specifications).

If required by the Special Provisions, the Contractor shall enter into and sign Warranty statements in the form provided to warranty various segments of the Work for the time specified.

If failure of any portion of the Work can be attributed to faulty materials, poor workmanship, defective equipment, or any other reason that can be attributed to Contractor's performance, and occurs within the specified warranty period, the Contractor shall promptly make the needed repairs at the Contractor's expense.

The Agency is hereby authorized to make such needed repairs if the Contractor fails to undertake, with due diligence, the needed repairs within ten (10) Calendar Days after the Contractor is given written notice of such failure and without notice to the surety; provided, however, that in case of emergency where, in the opinion of the Agency, delay would cause serious loss or damages or a serious hazard to the public, the repairs may be made or lights, signs, and barricades erected without prior notice to the Contractor or surety, and the Contractor shall pay the entire costs.

SECTION 5.

CONTROL OF WORK AND MATERIALS

5-1 AUTHORITY OF AGENCY

The Agency will decide all questions regarding the quality and acceptability of materials furnished, work performed, and rate of progress of the Work. The Agency will decide all questions regarding the interpretation and fulfillment of the Contract on the part of the Contractor, and all questions as to the rights of different contractors involved with the Work. The Agency will determine the amount and quality of the Work performed and materials furnished for which payment is to be made under the Contract.

The Agency will administer its authority through a duly designated representative identified at the preconstruction meeting. The Contractor and the Agency representative shall make good faith attempts to resolve disputes that arise during the performance of the Work.

Any order given by the Agency not otherwise required by the Contract to be in writing will be given or confirmed by the Agency in writing at the Contractor's request. Such request shall state the specific subject of the decision, order, instruction, or notice and, if it has been given orally, its date, time, place, author and recipient.

5-2 ATTENTION AND COOPERATION OF CONTRACTOR

The Contractor shall comply with any instruction delivered to the Contractor or the Contractor's authorized representative.

5-3 SUGGESTIONS TO CONTRACTOR

Any plan or method suggested to the Contractor by the Agency, but not specified or required in writing, if adopted or followed in whole or in part by the Contractor, shall be used at the risk and responsibility of the Contractor. The Agency assumes no responsibility.

5-4 SEPARATE CONTRACTS

The Agency reserves the right to award other Contracts in connection with the Work. The Contractor shall afford other contractors reasonable opportunity for the delivery and storage of their materials and the execution of their work and shall properly connect and coordinate their work with the other contractors.

If any part of the Contractor's work depends upon the work of any other contractor for proper execution or results, the Contractor shall inspect and promptly report to the Agency any defects in such work that render it unsuitable for proper execution and results. The Contractor's failure to so inspect and promptly report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the Contractor's work, unless defects develop in the other contractor's work after the execution of the Contractor's work.

5-5 COOPERATION WITH OTHER CONTRACTORS

The Agency or adjacent property owners may perform work adjacent to or within the Work area concurrent with the Contractor's operations. The Contractor shall conduct operations to minimize interference with the work of other forces or contractors.

Any disputes or conflicts between the Contractor and other forces or contractors retained by the Agency which create delays or hindrance to each other shall be referred to the Agency for resolution. If the

Contractor's work is delayed because of the acts or omissions of any other force or contractor, the Contractor shall have no claim against the Agency other than for an extension of time (see Section 7-18, "Extension of Time", of these Specifications).

5-6 CONTRACTOR'S DISMISSAL OF UNSATISFACTORY EMPLOYEES

If any person employed by the Contractor or any Subcontractor shall fail or refuse to carry out the directions of the Agency or the provisions of the Contract, or is, in the opinion of the Agency, incompetent, unfaithful, intemperate, or disorderly; or uses threatening or abusive language to any person on or associated with the Work; or is acting or working in a manner that compromises the safety of the Work or persons or property involved with the Work, or is otherwise unsatisfactory, the Contractor shall, when requested by the Agency, remove the worker from the Work immediately, and shall not again employ the removed worker on the Work except with the written consent of the Agency.

5-7 CONTRACTOR'S EQUIPMENT

The Contractor shall provide adequate and suitable equipment, labor, and means of construction to meet all the requirements of the Work, including completion within the Contract Time. Only equipment suitable to produce the quality of work required will be permitted to operate on the Project. Specific types of equipment may be requested by the Agency on component parts of the Work.

The Agency may, at the Agency's option, permit the use of new or improved equipment. If such permission is granted, it is understood that it is granted for the purpose of testing the quality and continuous attainment of work produced by the equipment, and the Agency shall have the right to withdraw such permission at any time that the Agency determines that the alternative equipment is not producing work that is equal in all respects to that specified, or will not complete the Work in the time specified in the Contract.

In any case where the use of a particular type or piece of equipment has been banned, or in cases where the Agency has condemned for use on the Work any piece or pieces of equipment, the Contractor shall promptly remove such equipment from the site of the work. Failure to do so within a reasonable time may be considered a breach of contract.

5-8 CONTRACTOR'S SUBMITTALS

Submittals - General

The Contractor shall furnish all working drawings, plans, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's instructions as required in the Contract, and any other information required to demonstrate that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the Contract. Submittals shall be submitted by the dates specified in the Contract or a per diem fine will be levied until the appropriate Submittals are properly submitted.

Submittals for systems shall be bound together and include all information for the system. Six (6) copies of all submittals shall be furnished, two (2) of which will be returned after review. Depending on the complexity of the submittal, the number of submittals, and the express needs of the Contractor, the submittal will be returned to the Contractor within thirty (30) days, exclusive of any time awaiting clarification or further information. Submittals shall be transmitted using submittal transmittal forms provided by the Agency. Where any item of the work is required to be installed in accordance with the manufacturer's recommendations, the Contractor shall furnish six (6) complete sets of the manufacturer's installation recommendations to the Agency prior to starting the installation. These submittals will be retained by the Agency.

If the information furnished in a submittal shows any deviation from the Contract requirements, the Contractor shall, by a statement in writing accompanying the information, advise the Agency of the deviation and state the reasons. It shall be the Contractor's responsibility to ensure there is no conflict with other submittals and to notify the Agency in any case where the Contractor's submittal may concern work by another contractor or the Agency. The Contractor is solely responsible for coordination of submittals among all related crafts performing the Work. The Contractor shall verify that its Subcontractors' submittals are complete in every way and meet the requirements of the Contract.

The approval of the Contractor's submittals shall not relieve the Contractor of responsibility for any error or of any obligation for accuracy of dimensions and details, for agreement with and conformity to the Contract, or responsibility to fulfill the Contract as prescribed. Nor shall such approval be considered as approval of any deviation or conflict unless the Agency has been expressly advised of the same as set forth immediately above, and the Agency has expressly approved such deviation or conflict.

The Contractor shall make no changes to any submittal after it has been approved, and the equipment or materials shall not deviate in any way except with written approval by the Agency. Fabrication or other work performed in advance of approval shall be done entirely at the Contractor's risk.

Minimum requirements for submittals are contained in these Specifications. Additional and/or project-specific requirements may be contained in the Contract. The Contractor is responsible for identifying and providing all required submittals.

Resubmittals

Resubmittals shall address all comments from the Agency. Partial resubmittals may be returned "REJECTED". The Contractor is responsible for the Agency's review costs for each resubmittal in excess of the first resubmittal. These costs will be back charged to the Contractor and will be deducted from progress payments.

Submittals Containing Proprietary Information

All required information shall be provided even though some or all of such information may be considered proprietary. If any of the information required herein is considered proprietary, a Proprietary Information Agreement (see sample Agreement in Appendix A) shall be executed between the Agency and the Contractor, stipulating that all such information will be supplied by the Contractor and kept confidential by the Agency. AH proprietary data shall be identified as part of the Contractor's Bid and the Agency's standard proprietary agreement shall be executed before award of the Contract. Proprietary information is defined as any information or data describing or defining a product, process or system which 1) was developed at the expense of the Contractor, a Subcontractor or supplier; 2) is not generally available in the industry; and 3) is kept secret by its owner for purposes of preventing its use by others. Application software and all other documentation, or any other product, prepared by the Contractor, Subcontractor, or supplier at the expense of the Agency for specific use on the facility being constructed under the Contract shall not be considered proprietary.

All submitted proprietary information shall describe the final record Work. No part of the Work covered by the proprietary agreement shall be modified after proprietary submittal acceptance until updated proprietary information has been submitted by the Contractor and accepted by the Agency. Updated proprietary information shall fully document all modifications to be implemented. All proprietary data shall be marked "PROPRIETARY" by the Contractor.

Electrical, Instrumentation, Control, and Communication Systems

Electrical, instrumentation, control, and communication system drawings shall include elementary and loop diagram drawings, functional single line system layout drawings, connection drawings, interconnection drawings, panel/cabinet fabrication drawings, and detailed circuit board and component drawings. Detailed circuit schematics and circuit board layout drawings shall clearly show, locate, and identify all components and wiring. Each circuit board component shall be identified by the component's original manufacturer name and part number. Industry standard part numbers shall be used. Component values, voltage/current levels, set points, and timing values shall be defined. Drawings shall be in the latest version of AutoCAD or other electronic reproducible medium specified by the Agency.

Complete annotated software/firmware source code listings and program documentation shall be provided for all electronic/electrical systems, subsystems, assemblies, parts, components, and equipment that incorporate programmable devices. All instructions and hardware necessary to load, store, modify, and activate software/firmware source codes and programs shall be provided.

Not more than seventy percent (70%) of all electronic/electrical work shall be paid for until all proprietary information has been submitted and approved. All submitted proprietary information shall be that which describes the final as-built work. No part of the work covered by the proprietary agreement shall be modified after proprietary submittal acceptance until after updated proprietary information has been submitted by the Contractor and accepted by the Agency. Updated proprietary information shall fully document all modifications to be implemented. All proprietary data shall be marked "PROPRIETARY" by the Contractor.

Maintenance and Operations (M&O) Submittals

For use in subsequent maintenance and operations the Contractor shall furnish, unless otherwise provided for in the Special Provisions, one (1) original and five (5) copies, bound and indexed, of maintenance and operation information, including all the highest level of factory maintenance manuals that are available to factory representatives with a three-year subscription to newsletters and updates supplied by the manufacturer covering all equipment and systems included in the Contract, The Agency may withhold up to thirty percent (30%) of the Total Contract Price until M&O submittals have been submitted and approved- The submittal shall include at a minimum:

44. Drawings
45. Illustrations
46. Parts lists
47. Wiring diagrams of systems
48. Internal wiring diagrams and circuit board schematics and layout drawings
49. Manufacturer's recommended spare parts lists
50. Name, address and phone number of nearest parts and service agency
51. Systems balance data
52. Maintenance and service instructions
53. Operation instructions
54. Software including annotated source lists and programs

The submittal of maintenance and operation information is required for all mechanical, electrical, instrumentation, control, communications, sound, or special equipment and systems. The Contractor shall submit the required data for review at least thirty (30) Calendar Days prior to any

required training or the final inspection date. Corrections, additions, and/or resubmittal of data shall be made as directed by the Agency.

The Agency, and such representatives as the Agency may designate, shall receive complete maintenance and operating instructions for all items included above prior to final inspection of the Work.

5-9 SURVEYS

5-9.01 CONTRACTOR FURNISHED SURVEYS

Contractor Surveys

The Contractor shall be responsible for performing all necessary surveys to lay out and control the Work to the locations, elevations, lines, and dimensions shown or specified in the Contract. Any deviations must receive prior written approval of the Agency. All surveys affecting the line or elevation of underground drainage, sewers, or utilities, and all other work within public rights-of-way or easements, shall be performed by or under the direction and supervision of a California Registered Civil Engineer authorized to practice land surveying or a California Licensed Land Surveyor. The Contractor shall be responsible for protecting and perpetuating survey monuments affected by construction activities in accordance with Business and Professions Code Section 8771 (b). The Contractor shall be responsible for the accuracy of the Contractor's own layout work, and shall be liable for the preservation of all established lines and grades. Stakes damaged or destroyed by the operations of the Contractor shall be replaced at the Contractor's expense.

5-10 RESPONSIBILITY FOR ACCURACY

All work shall be constructed true to the lines, elevations and grades indicated on the Plans. The Contractor shall obtain all necessary measurements for and from the Work, and shall check dimensions, elevations, and grades for all layout and construction work and shall supervise such work; the accuracy for all of which the Contractor shall be responsible. The Contractor is responsible for adjusting, correcting, and coordinating the work of all Subcontractors so that no discrepancies result.

5-11 DUTIES AND POWERS OF INSPECTORS

Inspectors are the field authorized representatives of the Agency. Their duty is to inspect materials and workmanship of those portions of the Work to which they are assigned, either individually or collectively, under instructions of the Agency, and to report all deviations from the Contract.

5-12 INSPECTION

The inspection of the Work does not relieve the Contractor of the obligation to fulfill all Contract requirements. Any work, materials, or equipment not meeting the requirements and intent of the Contract will be rejected, and unsuitable work or materials shall be made good, notwithstanding the fact that such work or materials may have previously been inspected or approved and payment may have been made.

Re-examination of any part of the Work may be ordered by the Agency, and such part of the Work shall be uncovered by the Contractor. The Contractor shall pay the entire cost of such uncovering, reexamination, and replacement if the reexamined work does not conform to the Contract.

All work and materials furnished pursuant to the Contract shall be subject to inspection and approval by the Agency. The Contractor shall provide the Agency and Inspectors with access to the Work during construction and shall furnish every reasonable facility and assistance for ascertaining that the materials and the workmanship are in accordance with the requirements and intent of the Contract.

Unless authorized in writing by the Agency, any work done in the absence of an Inspector, whether completed or in progress, shall be subject to inspection. The Contractor shall furnish all tools, labor, materials, access facilities, and other facilities necessary to allow such inspection, even to the extent of uncovering or taking down completed portions of the Work. The Contractor shall pay all costs incurred, whether or not any defective work is discovered. The Contractor shall also be solely responsible for any costs associated with the removal of any defective work discovered during the inspection and the complete cost of reconstruction.

The Contractor shall notify the Agency of the time and place of any factory tests and submit test procedures for approval thirty (30) Calendar Days in advance for any tests that are required by the Contract. The Contractor shall report the time and place of preparation, manufacture or construction of any material for the Work, or any part of the Work, that the Agency wishes to inspect. The Contractor shall give five (5) Working Days notice in advance of the beginning of work on any such material or of the beginning of any such test to allow the Agency to make arrangements for inspecting and to witness testing.

5-13 QUALITY OF MATERIALS AND WORKMANSHIP

Unless otherwise allowed or required by the Special Provisions, all materials shall be new and of a quality at least equal to that specified. When the Contractor is required to furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market. If not ordinarily carried in stock, the articles shall conform to the usual standards for first-class materials or articles of the kind required. The work performed shall secure the best standard of construction and equipment of the work as a whole or in part.

Materials shall be furnished in sufficient quantities and at such times to ensure uninterrupted progress of the Work. All required spare parts shall be delivered in new condition, not in a used or unknown condition, and with any certificates required. Materials, supplies, and equipment shall be stored properly and protected as required. The Contractor shall be entirely responsible for damage or loss by weather or other causes.

5-14 SUBSTITUTIONS

Certain materials, articles, or equipment may be designated in the Contract by brand or trade name or manufacturer together with catalog designation or other identifying information. Substitute material, article, or equipment which is of equal quality and of required characteristics for the intended purpose may be proposed for use, provided the Contractor complies with the requirements of the following paragraphs.

Written Request

The Contractor shall submit any request for substitution in writing no later than five (5) Working Days after Bid opening.

Documentation

If requested by the Agency, a proposal for substitution must be accompanied by complete information and descriptive data, including cost of operation, cost of maintenance, and physical requirements necessary to determine the equality of offered materials, articles, or equipment. The Contractor shall also submit such shop drawings, descriptive data, and samples as requested. The burden of proof of comparative quality, suitability, and performance of the offered proposal shall be upon the Contractor. The determination of equal quality suitability, and performance shall be at the sole discretion of the Agency. The Agency will examine such submittals with reasonable promptness. If the Agency rejects the request for such substitution, then one of the particular

products designated by brand name in the Contract shall be furnished. Acceptance of substitution by the Agency shall not relieve the Contractor from responsibility for deviations from the Plans and Specifications or from responsibility for errors in submittals. Failure by the Contractor to identify deviations in the request material from the Plans and Specifications shall void the submittal and any action taken thereon by the Agency.

If mechanical, electrical, structural or other changes are required for proper installation and fit of substitute materials, articles or equipment, or because of deviations from the Contract, such changes shall not be made without the written consent of the Agency and shall be made by the Contractor without additional cost to the Agency. The Contractor shall pay the costs of design, drafting, architectural or engineering services and building alterations of the construction required to accommodate any Contractor substitution or construction error to maintain the original function and design.

5-15 PREPARATION FOR TESTING

The Contractor shall maintain proper facilities and provide safe access for inspection by the Agency to all parts of the Work and to the shops wherein parts of the Work are in preparation. Where the Contract requires work to be tested or approved, such work shall not be tested or covered up without at least a five (5) Working Day notice to the Agency of its readiness for inspection, unless the written approval of the Agency for such testing or covering is first obtained.

5-16 MATERIALS SAMPLING AND TESTING

Materials to be used in the Work will be subject to sampling and tests by the Agency. The Contractor shall furnish and provide all testing. The contractor shall furnish the Agency with a list of the Contractor's sources of materials and the locations at which such materials will be available for inspection.

Testing shall be done by the contractor to such standards as set forth in the Plans, Specifications, or Special Provisions. References made in these documents to standard methods of testing materials shall make such standards a part of the Specifications.

Whenever a reference is made in the Specifications to a specification or test designation of any recognized national organization or State of California agency, and the number or other identification representing the year of adoption or the latest revision is omitted, it shall mean the specification or test designation in effect on the date of the original Notice to Contractors for the Work.

When requested by the Agency, samples or test specimens of the proposed materials shall be prepared at the expense of the Contractor and furnished by the Contractor in such quantities and sizes required for proper examination and tests, and with complete information describing type, kind, or size of material, and its source. All samples shall be submitted in time to permit the making of proper tests, analyses, or examinations before incorporating the materials into the Work. No material shall be used in the Work unless or until it has been approved by the Agency. All material tests shall be made by the Agency in accordance with recognized standard practice. The Contractor shall pay the cost of the second retest and any subsequent retest of any area or material- The Agency will secure and test samples whenever necessary.

5-17 APPROVAL OF MATERIALS

Sources Of Supply

The Agency's approval at the source of supply may be required prior to procurement. Such approval shall not prevent subsequent disapproval or rejection of materials by the Agency if the quality is less than required by the Contract.

5-17.01 PLANT INSPECTION

The Agency assumes no obligation to inspect materials at the source of supply. The Contractor is responsible for incorporating satisfactory materials into the Work, notwithstanding any prior inspections or tests.

The Agency will inspect materials at the source if the Contractor submits a written request and if the Agency deems the inspection necessary. The Contractor and the supplier will cooperate with and assist the Agency while performing the inspection. The Agency shall have access to all production areas of the plant,

5-18 PROVISIONS FOR EMERGENCIES

The Agency may provide necessary labor, material and equipment to correct any emergency resulting from the Contractor's operation including noncompliance with the Contract, public convenience, safety, traffic control, and protection of work, persons and property. The nature of the emergency may prevent the Agency from notifying the Contractor prior to taking action. The costs of such labor, material, and equipment will be deducted from progress payments.

The performance of such emergency work under the direction of the Agency shall not relieve the Contractor from any damages resulting from the emergency.

5-19 RIGHT TO RETAIN IMPERFECT WORK

If any portion of the work done or materials furnished under the Contract shall prove defective or not in accordance with the Contract, and if the defect in the work or materials is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if the removal of such work or materials is impracticable or will create conditions which are dangerous or undesirable, the Agency shall have the right and authority to retain the work or materials instead of requiring it to be removed and reconstructed or replaced. Progress payment deductions will be made as described in Section 8-9, "Deductions for Imperfect Work", of these Specifications.

5-20 REMOVAL OF REJECTED MATERIALS OR WORK

The Contractor shall remove all rejected or condemned materials or structures brought to or incorporated in the Work within two (2) Working Days of the Agency's written order. No such rejected or condemned materials shall again be offered for use in the Work. The Contractor shall, at the Contractor's expense, bring into Contract compliance all rejected material or work in a manner acceptable to the Agency.

The Agency may bring into Contract compliance the rejected material if the Contractor fails to comply with this Section. All costs will be deducted from the Progress Payment.

5-21 TEMPORARY SUSPENSION OR DELAY OF WORK

The Agency has the authority to suspend or delay the Work, wholly or in part, for any period the Agency deems necessary. The Contractor shall immediately comply with the Agency's written order to suspend or delay the Work. The suspended or delayed work shall be resumed only when conditions are favorable or methods are corrected, as ordered or approved in writing by the Agency. Public safety and convenience must be maintained throughout the suspension or delay in accordance with Sections 6-12, "Public Convenience and Safety", and 6-13, "Public Safety and Traffic Control", of these Specifications.

Delays due to suspension of work shall be classified as Avoidable or Unavoidable Delays in accordance with Section 7-12, "Delays", of these Specifications.

Such suspension shall not relieve the Contractor of the Contractor's responsibilities as described in the Contract.

5-22 TERMINATION OF CONTRACT

Reasons for Termination

The City Council reserves the right to terminate the Contract for any of the reasons listed below:

Contractor Bankrupt

If the Contractor is adjudged bankrupt or makes an assignment for the benefit of the Contractor's creditors, or if a receiver is appointed because of the Contractor's insolvency, the City Council may terminate the Contractor's control over the Work and so notify the Contractor and the Contractor's sureties.

Completion Delay

The City Council may terminate the Contract if the Contractor has not completed the Work on or before the completion date adjusted by Contract Change Order. The Contractor is not entitled to any compensation and is liable to the Agency for liquidated damages for all time beyond such Contract completion date until the Work is completed, if the Agency chooses to complete the Work.

Abandonment and Unsatisfactory Performance

The City Council may give the Contractor and the Contractor's surety written notice that the Contract will be terminated if the following breaches are not corrected:

55. The Contractor abandons the Work.
56. The Work or any portion is sublet or assigned without the Agency's consent.
57. The rate of progress is not in accordance with the Contract.
58. Any portion of the Work is unnecessarily delayed.
59. The Contractor willingly violates any terms or conditions of the Contract.
60. The Contractor does not supply sufficient materials or properly skilled labor.
61. The Contractor fails to promptly pay its Subcontractors.
62. The Contractor disregards laws, ordinances, or Agency orders.
63. The Contractor fails to respond to defective work notices. The Contractor shall cease and terminate the Work if satisfactory arrangement for correction is not made within ten (10) Calendar Days from such notification.

Termination of Contract for Convenience

The City Council may terminate the performance of work in whole or in part for any of the following reasons:

64. Issuance of an order of a court or other public authority having jurisdiction.
65. An act of government, such as a declaration of national emergency, causing material to be unavailable.
66. Conditions encountered during the Work make it impossible or impractical to proceed.
67. Such termination is in the best interest of the Agency.

Notice of Termination

The City Council may give written Notice of Termination of at least five (5) Calendar Days to the Contractor and the Contractor's sureties that the Contractor's control over the Work will be terminated for the reasons stated in the Notice of Termination. The surety shall have the right to take over and perform the Work except for reasons specified in Section 5-22.01.D. The Agency may take over the Work at the Contractor's expense if the surety does not commence performance within thirty (30) Calendar Days from the date of mailing the Notice of Termination. The Contractor shall be liable for any excess cost incurred by the Agency.

Immediately upon receipt of a Notice of Termination, except as otherwise directed in writing by the Agency, the Contractor shall:

68. Stop work under the Contract on the date and to the extent specified in the Notice of Termination.
69. Place no further orders or subcontracts for materials, services, or facilities except as necessary to complete the portion of the Work that is not terminated.
70. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination.
71. Assign to the Agency, in the manner, at the times, and to the extent directed by the Agency, all of the rights, titles, and interests of the Contractor under the orders and subcontracts so terminated. The Agency shall have the right, at its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.
72. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts with the approval or ratification of the Agency. The Agency's approval or ratification shall be final.
73. Transfer title to the Agency, and deliver in the manner, at the times, and to the extent directed by the Agency, fabricated or unfabricated parts, work in process, completed work, supplies, other material produced as a part of, or acquired in connection with, the terminated work, and the completed or partially completed drawings, information, and other property that, if the Contract had been completed, would have been submitted to the Agency,
74. Sell, in the manner, at the times, to the extent, and at the price that the Agency directs or authorizes, any property of the types referred to in Item 6 of this Section (Section 5-22.02). The Contractor is not required to extend credit to any purchaser, and may acquire any such property under the conditions prescribed and at a price approved by the Agency- The proceeds of any such transfer or disposition shall be used to reduce any payments made to the Contractor under the Contract or be credited to the cost of the work covered by the Contract or paid as the Agency directs.
75. Complete performance of the Work not terminated by the Notice of Termination.
76. Take necessary action, or as the Agency directs, to protect and preserve the property related to the Contract in which the Agency has an interest.

Payments to Contractor Upon Termination of Contract

The Contractor and the Agency may agree upon the amount paid to the Contractor for the total or partial termination of the Work. The amount may include those items specified in Section 9, "Changes and Claims", of these Specifications. However, such agreed amount shall not exceed the Total Contract Price, reduced by the amount of payments already made and the Contract price

of work not terminated. The Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.

If the Contractor and the Agency fail to agree on the amount to pay the Contractor because of the termination of work under this Section, the Agency shall determine the amount due the Contractor.

If the work is completed as provided in Section 5-22.02 in this Section of these Specifications, the Contractor is not entitled to receive any portion of the amount to be paid under the Contract until it is fully completed. After completion, if the unpaid balance exceeds the sum of the amount expended by the Agency in finishing the work, plus all damages sustained or to be sustained by the Agency, plus any unpaid claims on account of labor, materials, tools, equipment, or supplies contracted for by the Contractor for the Work, provided that sworn statements of said claims shall have been filed as required by Section 9, "Changes and Claims", of these Specifications, the excess not otherwise required by these Specifications to be retained shall be paid to the Contractor. If the sum so expended exceeds the unpaid balance of the Total Contract Price, the Contractor and the Contractor's surety are liable to the Agency for the amount of such excess. If the surety completes the Work as provided above, such surety shall be subrogated to money due under the Contract and to money which shall become due in the course of completion by the surety.

The Contractor shall submit to the Agency any termination claim in the form and with the certification that the Agency prescribes. Such claim shall be submitted no later than ninety (90) Calendar Days from the effective date of termination unless the Agency grants one or more extensions, in writing, upon Contractor's written request transmitted within such ninety (90) day period or authorized extension. If the Contractor fails to submit a termination claim within the time allowed, the Agency may determine the amount, if any, due the Contractor because of the termination. The Agency will then pay the Contractor that amount.

Agency Completion

In the event of termination of the Contract, the Agency may take possession of and use all or any part of the Contractor's materials, tools, equipment, and appliances on the premises to complete the Work. The Agency assumes the responsibility for returning such equipment in as good condition as when it was taken over, reasonable wear and tear excepted. The items shall be returned when the Work is complete or sooner, at the Agency's discretion. The Agency agrees to pay a reasonable amount for the use of such materials and equipment.

The Agency may direct all or any part of the Work be completed by day labor and/or other contractors.

Payment for Agency Completion

If the Agency completes the Work, no payment will be made to the Contractor until the Work is complete. All costs of completing the Work, including, but not limited to, legal expenses, Agency forces, administration and management, direct and indirect, shall be deducted from any sum due the Contractor. If the cost of completing the Work exceeds sums due the Contractor, the Contractor and the Contractor's surety shall, upon demand, pay the Agency a sum equal to the difference. If the Agency completes the Work and there is a sum due the Contractor after the Agency deducts the costs of completing the Work, the Agency will pay such sum to the Contractor and/or the Contractor's surety, as appropriate.

Agency Completion Not a Waiver of Agency Rights

No act by the Agency before the Work is finally accepted shall operate as a waiver or stop the Agency from acting upon any subsequent event, occurrence or failure by the Contractor to fulfill

the terms and conditions of the Contract. The rights of the Agency pursuant to this Section are in addition to all other rights of the Agency pursuant to the Contract, and at law or in equity.

5-23 TERMINATION OF UNSATISFACTORY SUBCONTRACTS

When any portion of the Work subcontracted by the Contractor is not prosecuted in a satisfactory manner, the Contractor shall immediately terminate the subcontract upon written notice from the Agency. The Subcontractor shall not again be employed for any portion of the work on which the Subcontractor's performance was unsatisfactory.

5-24 SURVIVAL OF OBLIGATIONS

No termination of this Contract or of Contractor's Work shall excuse or otherwise relieve the Contractor of its responsibilities under the Contract Documents with respect to any Work performed prior to the date of termination, including, without limitation, its obligation to perform the Work in a good and workmanlike manner, free of defects, and in accordance with the Contract Documents, its warranty obligations with respect to the Work, and its obligation to make all payments due. All of Contractor's responsibilities under the Contract Documents with respect to the Work Performed prior to the date of termination shall survive any termination.

SECTION 6.

LEGAL RELATIONS AND RESPONSIBILITIES

6-1 COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor shall be familiar and comply with all Federal, State, and local laws, ordinances, codes and regulations which in any manner affect the Work, those engaged or employed in the Work or the material or equipment used in or upon the Work, or in any way affect the conduct of the Work. No pleas of misunderstanding of such laws, ordinances, codes, or regulations or of ignorance of the same on the part of the Contractor shall modify the provisions of the Contract. The Contractor and the Contractor's surety shall indemnify and save harmless the Agency and the Agency's officers, officials, agents, employees, volunteers, members, affiliates and their duty authorized representatives against any claim for liability arising from, or based upon, the violation of any such law, ordinance, regulation, decree, or order, whether by the Contractor or by the Contractor's employees.

The attention of the Contractor is directed to certain laws that affect the Contract. The listing of these laws in this Section is not to be construed as a listing of all applicable laws. The Contractor is solely responsible for familiarity and compliance with all applicable laws. Particular attention is called to the following:

Hours of Labor

Eight (8) hours of labor shall constitute a legal day's work and the Contractor or any Subcontractor under the Contractor, in the execution of the Contract, shall not require more than eight (8) hours of labor in any Calendar Day, and forty (40) hours of labor in any calendar week, from any person employed by the Contractor in the performance of the Work under the Contract, except as permitted under the provisions of Labor Code Sections 1810 to 1815 of the Labor Code of the State of California. The Contractor shall forfeit, as penalty to the Agency, twenty-five dollars (\$25) for each worker employed by the Contractor or any Subcontractor under the Contractor in the execution of the Contract for each Calendar Day during which any worker is required or permitted to labor more than eight (8) hours and for each calendar week during which any worker is required or permitted to labor more than forty (40) hours, in violation of the provisions of such Labor Code.

Overtime and shift work may be established by the Contractor with reasonable notice and the written permission of the Agency. No work other than overtime and shift work shall be done between the hours of 6:00 p.m. and 7:00 a.m., except such work as is necessary for the proper care and protection of work already performed or except in case of an emergency. Failure of the Contractor to perform the Work in accordance with this policy shall be cause for termination under Section 5-22, "Termination of Contract", of these Specifications.

Prevailing Wage

Pursuant to Labor Code Section 1770, the Contractor and the Contractor's Subcontractors shall pay not less than the prevailing rate of per diem wages, including, but not limited to, overtime, Saturday, Sunday, and holiday work, travel and subsistence, as determined by the Director of the California Department of Industrial Relations pursuant to Labor Code Section 1773. Copies of such prevailing rate of per diem wages are available upon request at the Public Works Department of the City of Colusa, 425 Webster Street, Colusa, California 95932.

The wage rates determined by the Director of the California Department of industrial Relations refer to expiration dates. Prevailing wage determinations with a single asterisk (*) after the

expiration date that are in effect on the date of Notice to Contractors remain in effect for the duration of the project. Prevailing wage determinations with double asterisks (**) after the expiration date indicate that the basic hourly wage rate, overtime and holiday wage rates, and employer payments to be paid for work performed after this date have been determined. If work extends past this date, the new rate shall be paid and should be incorporated in contracts entered. The Contractor should contact the Department of Industrial Relations as indicated in the prevailing wage determinations to obtain predetermined wage changes. AH determinations that do not have double asterisks (**) after the expiration date remain in effect for the duration of the project.

The Contractor and the Contractor's Subcontractors shall forfeit, as penalty to the Agency, not more than fifty dollars (\$50) per Calendar Day or portion thereof, for each worker paid less than the prevailing wage rates for any work done under the Contract by the Contractor or by any Subcontractor. The Contractor shall comply with the provisions of Labor Code Section 1775. In addition to said penalty, the Contractor or Subcontractor shall pay each worker the difference between the prevailing wage and the amount paid for every hour the worker was paid less than the prevailing wage.

Payroll Records

Contractor shall comply with Labor Code Section 1776. Regulations implementing Section 1776 are located in Section 16000 and Sections 16401 through 16403 of Title 8, California Code of Regulations. The Contractor shall be responsible for compliance by the Contractor's Subcontractors.

The Contractor and the Contractor's Subcontractors shall keep accurate payroll records, showing the name, address, Social Security number, straight time and overtime hours worked each day and week, and the actual wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Work. Such records shall be certified and available for inspection at all reasonable hours at the principal offices of the Contractor and the Contractor's Subcontractors in a manner set forth in Labor Code Section 1776. The Contractor and the Contractor's Subcontractors shall file a certified copy of the records enumerated above with the Agency within ten (10) Calendar Days after receipt of a written request. The Contractor shall be held responsible for all Subcontractors' compliance with this requirement.

The non-compliance penalties specified in subdivision (g) of Labor Code Section 1776 may be deducted from progress payments to the Contractor.

Nondiscrimination

Contractor shall comply with Labor Code Section 1735, which prohibits discrimination in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex of such persons, and provides for penalties.

Apprentices

The Contractor shall comply with Labor Code Section 1777.5, concerning the employment of apprentices. The Contractor shall be responsible for compliance by all Subcontractors.

Workers' Compensation

Pursuant to Labor Code Section 1860, in accordance with the provisions of Section 3700 of the Labor Code, the Contractor is required to secure the payment of compensation to his employees.

Fair Labor Standards

The Contractor shall comply with the Fair Labor Standards Act of 1938 as amended (29 U.S.C. 3201 et seq.) as applicable.

Contractors License

The Contractor shall comply with Chapter 9 of Division 3 of the Business & Professions Code.

Use of Pesticides

The Contractor shall comply with all rules and regulations that govern the use of pesticides required in the performance of the Work, including any certifications that may be required for purchase, use, storage or application.

Pesticides include, but are not limited to, herbicides, insecticides, fungicides, rodenticides, germicides, nematocides, bactericides, inhibitors, fumigants, defoliant, desiccants, soil sterilants, and repellants.

Any substance or mixture of substances intended for preventing, repelling, mitigating, or destroying weeds, insects, diseases, rodents, or nematodes and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant shall be considered a pesticide.

Reporting Requirements and Sanctions

Failure to provide specific information, records, reports, certifications, or any other documents required for compliance with the Contract will be considered noncompliance. At a minimum, documents required include:

77. List of Subcontractors

The List of Subcontractors Form is required from the Contractor and each Subcontractor with a lower tier Subcontractor. This form is due within ten (10) Calendar Days after the date of the preconstruction conference or within ten (10) Calendar Days after the date of award of the subcontract. The later of the two dates will apply.

78. Certified Payroll Reports

Certified Payroll Reports are required from the Contractor and each Subcontractor, regardless of the subcontract amount or the type of procurement, for every payroll period in which work is performed. These reports are due within ten (10) Working Days of the ending date of the payroll period.

79. Fringe Benefit Statement

A Fringe Benefit Statement is required from the Contractor and each Subcontractor if fringe benefits are paid to an approved plan, fund, or program. The statement is due with first certified payroll report and any time the fringe benefit amounts change. The statement is not required if the fringe benefits are paid in cash to the employees.

80. Other Documentation

When required by the Special Provisions, other reporting documentation may be required depending on the source of funding for the project. If the Contractor fails to comply with the provisions of this Section, the Contractor will be advised of the specific deficiencies and requested to make immediate corrections. The Contractor

will also be advised that monetary deductions will be made for failure to effect corrections or delinquencies.

If the Contractor fails to correct a deficiency in the reporting requirements within fifteen (15) Calendar Days after notification, a deduction may be made. In such cases, the deduction will be ten percent (10%) of the estimated value of the work done during the month, except that the deduction will not exceed ten thousand dollars (\$10,000), nor be less than one thousand dollars (\$1,000), and will be deducted from the next progress payment.

Deductions for non-compliance will be in addition to all other deductions provided for in the Contract and will apply irrespective of the number of instances of noncompliance. Deductions will be made separately and cumulate for each estimate period in which a new deficiency appears. When all deficiencies for a period have been corrected, the deduction covering that period will be released on the next progress payment. Otherwise, the deduction will be retained.

Subcontracting

The Contractor must comply with Section 4101 to Section 4113, inclusive, of the Public Contract Code,

Occupational Safety and Health

The Contractor must comply with all applicable provisions of the California Occupational Safety and Health Act (Labor Code Sections 6300 et seq.). The foregoing includes, but is not limited to, all applicable Title 8 Safety Orders issued by the State of California Occupational Safety and Health Administration (Cal/OSHA). Failure of the Agency to suspend the work or notify the Contractor of the inadequacy of the safety precautions or non-compliance with existing laws and regulations shall not relieve the Contractor of this responsibility.

6-2 INDEMNIFICATION

Contractor's Performance

The Contractor shall defend, indemnify and save harmless the City, the Owner's Representative, the Architect, the Consulting Engineer and any of their respective officers, officials, agents, and employees from any and all claims, demands, damages, costs, expenses, attorney's fees, or liability arising out of or in any way connected with the performance or attempted performance of the provisions hereof, or in any way arising out of or connected with this Contract, including but not limited to, inverse condemnation, equitable relief, or any acts or omissions, any wrongful act, or any negligent act or omission to act, whether active or passive, on the part of the Contractor or any of its agents, employees, independent contractors, Subcontractors or suppliers; provided, further, without limiting the foregoing, that the indemnity is intended to apply to any wrongful acts, or any actively or passively negligent acts or omissions to act, committed jointly or concurrently by the Contractor, the Contractor's agents, employees, independent contractors, Subcontractors or suppliers, and the City, its agents, employees, or independent contractors.

The indemnity obligation expressly extends to and includes any and all claims, demands, damages, costs, expenses, or liability occasioned as a result of damages to adjacent property caused by the conduct of the Work.

The indemnity obligation expressly extends to and includes any and all claims, demands, damages, costs, expenses, or liability occasioned as a result of the violation by the Contractor, the Contractor's agents, employees, or independent contractors, Subcontractors or suppliers of any provisions of federal, state, or local law, including applicable administrative regulations.

The indemnity obligation also expressly extends to and includes any claims, demands, damages, costs, expenses, or liability occasioned by injury to or death of any person, or any property

damage to property owned by any person while on or about the Site or as a result of the Work, whether such persons are on or about the Site by right or not, whenever the Work is alleged to have been a contributing cause in any degree whatsoever.

Nothing contained in the foregoing indemnity provisions shall be construed to require the Contractor to indemnify the City in contravention of Section 2782 of the Civil Code for the sole negligence or willful misconduct of the City or its agents, employees or independent contractors.

In claims against any person or entity herein indemnified that are made by an employee of the Contractor or an employee of any of the Contractor's agents, independent contractors, Subcontractors or suppliers, a person indirectly employed by the Contractor or by any of the Contractor's agents, independent contractors, Subcontractors or suppliers, or anyone for whose acts the Contractor or any of the Contractor's agents, independent contractors, Subcontractors or suppliers may be liable, the indemnification obligation herein shall not be limited by any limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or the Contractor's agents, independent contractors, Subcontractors or suppliers under workers' compensation acts, disability acts, or other employee benefit acts.

The indemnification obligation herein shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

The indemnities set forth herein shall not be limited by the insurance requirements set forth in the Contract Documents.

The indemnification requirements herein set forth shall extend to claims occurring after this Contract is terminated as well as while it is in force.

No Limitation of Liability for Indemnification

The indemnities set forth in this Section shall not be limited by the insurance requirements set forth in the Contract.

6-3 CONTRACTOR'S LEGAL ADDRESS

Both the address given in the Bid and the Contractor's office in the vicinity of the Work are designated as places that samples, notices, letters, or other articles or communications to the Contractor may be mailed or delivered. The delivery to either of these places shall be deemed sufficient service to the Contractor and the date of such service shall be the date of delivery. The address named in the Bid may be changed at any time by written notice from the Contractor to the Agency. Nothing herein shall be deemed to preclude or render inoperative the service of any drawing, sample, notice, letter or other article or communication to the Contractor.

6-4 CONTRACTOR NOT AN AGENT OF AGENCY

The Contractor shall be an independent contractor and not an employee, agent, or other representative of the Agency. Nothing in the Contract shall be construed to create any relationship of joint venture, partnership or any other association of any nature whatsoever between the Agency and the Contractor other than that of owner and independent contractor. The Agency shall have the right to direct the Contractor as provided in the Contract. The aforementioned right of supervision shall not reduce or abrogate the Contractor's liability of all damage or injury to persons, public property, or private property that may arise directly or indirectly from the Contractor's execution of the Work.

6-5 SUBSTITUTION OF SUBCONTRACTORS

The Contractor shall not, without the written consent of the Agency: (a) substitute any party as Subcontractor in place of the Subcontractor designated in the original bid; (b) permit any such subcontract

to be assigned or transferred; or (c) allow the subcontracted work to be performed by anyone other than the original Subcontractor listed on the bid. Consent for substitution or subletting shall only be given:

81. When the Subcontractor listed in the bid, after having reasonable opportunity to do so, fails or refuses to execute a written contract that is based upon the Plans and Specifications for the project or the terms of such Subcontractor's written bid and is presented to the Subcontractor by the Contractor; or
82. When the listed Subcontractor becomes bankrupt or insolvent; or
83. When the listed Subcontractor fails or refuses to perform the subcontract; or
84. When the listed Subcontractor fails or refuses to meet the bond requirements of the Contractor as set forth in California Public Contract Code Section 4108; or
85. When the Contractor demonstrates to the Agency, subject to the further provisions set forth in California Public Contract Code Section 4107.5, that the name of the Subcontractor was listed as a result of an inadvertent clerical error; or
86. When the listed Subcontractor is not licensed pursuant to the Contractor License Law as set forth in the Business and Professions Code; or
87. When the Agency determines that the work performed by the listed Subcontractor is substantially unsatisfactory and not in substantial accordance with the Contract, or that the Subcontractor is substantially delaying or disrupting the progress of the work; or
88. When the listed Subcontractor is ineligible to work on a public works project pursuant to Section 1777.1 and 1777.7 of the Labor Code.
89. When the awarding authority determines that a listed subcontractor is not a responsible contractor. Prior to approval of the prime contractor's request for the substitution, the awarding authority, or its duly authorized officer, shall give notice in writing to the listed subcontractor of the prime contractor's request to substitute and of the reasons for the request. The notice shall be served by certified or registered mail to the last known address of the subcontractor. The listed subcontractor who has been so notified has five working days within which to submit written objections to the substitution to the awarding authority. Failure to file these written objections constitutes the listed subcontractor's consent to the substitution. If written objections are filed, the awarding authority shall give notice in writing of at least five working days to the listed subcontractor of a hearing by the awarding authority on the prime contractor's request for substitution.

In the event of such substitution, the Agency will give at least five (5) Working Days notice in writing to the listed Subcontractor, unless they have advised the Agency in writing that they have knowledge of the Contractor's request for the substitution.

6-6 ASSIGNMENT OF CONTRACT

The Contract or the performance of the Contract may be assigned by the Contractor, but only upon written consent of the Agency and the Contractor's surety, unless the surety has waived its right of notice of assignment. No such assignment or subcontracting shall be permitted that would relieve the Contractor or the Contractor's surety of their responsibilities under the Contract.

6-7 ASSIGNMENT OF MONIES

The Contractor may assign monies due the Contractor under the Contract, and such assignment will be recognized by the Agency, if given proper notice, to the extent permitted by law. Any assignment of monies shall be subject to all deductions provided for in the Contract. All money withheld may be used by the Agency for the completion of the Work if the Contractor defaults.

6-8 PROTECTION OF AGENCY AGAINST PATENT CLAIMS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, and processes on or incorporated in the Work and shall indemnify and hold harmless the Agency and the Agency's officers, officials, agents, employees, volunteers, members, affiliates and their duly authorized representatives from all actions for, or on account of, the use of any patented materials, equipment, devices, or processes in the construction of, or subsequent operation of, the Work. Before final payment, if requested by the Agency, the Contractor shall furnish acceptable proof of a proper release from all costs or claims arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the Work.

6-9 RESPONSIBILITY OF THE CONTRACTOR

The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, procedures, and coordination of all portions of the Work under the Contract, unless otherwise provided in the Contract.

The Work shall be under the Contractor's responsible care and charge until completion and final acceptance, and the Contractor shall bear the entire risk of injury, loss, or damage to any part by any cause. The Contractor shall rebuild, repair, restore, and make good all injuries; losses or damage to any portion of the Work or the materials occasioned by any cause, and shall bear the entire expense.

In no case shall the Contractor's use of Subcontractors in any way alter the position of the Contractor or the Contractor's sureties with relation to the Contract. When a Subcontractor is used, the responsibility for every portion of the Work shall remain with the Contractor. No Subcontractor will be recognized as having a direct contractual relationship with the Agency. All persons engaged in the Work under the Contract will be considered as employees of the Contractor and their work shall be subject to all the provisions of the Contract. The Agency will deal only with the Contractor who is responsible for the proper execution of the Work. The Contractor shall pay when due all valid claims of Subcontractors, suppliers, and workmen with respect to the Work.

The mention herein of any specific duty or responsibility imposed upon the Contractor shall not be construed as a limitation or restriction of any other responsibility or duty imposed upon the Contractor by the Contract, said reference being made herein merely for the purpose of explaining the specific duty or responsibility.

The Contractor shall do all of the work and furnish all labor, materials, tools, equipment, and appliances, except as otherwise herein expressly stipulated, necessary or proper for performing and completing the Work herein required, including any change order work or disputed work directed by the Agency in conformity with the true meaning and intent of the Contract drawings, Specifications, and all provisions of the Contract, within the time specified.

If the Contractor discovers any discrepancies during the course of the Work between the Contract drawings and conditions in the field, or any errors or omissions in the Contract drawings and conditions in the field, or any errors or omissions in the Contract drawings, the Specifications, or in the layout given by stakes, points, or instructions, it shall be the Contractor's duty to inform the Agency immediately, and the Agency shall promptly verify the same. Any work done after such discovery until authorized by the Agency, will be done at the Contractor's risk.

6-10 PERMITS AND LICENSES

The Contractor shall, at the Contractor's sole expense, obtain all necessary permits and licenses for the construction of the Work, give all necessary notices, pay all fees required by law, and comply with all laws, ordinances, rules and regulations relating to the Work and to the preservation of the public health and safety. The Contractor shall also procure all permits and licenses necessary for the normal conduct of the Contractor's business and construction operations.

Unless otherwise noted in the Special Provisions, building, plumbing, heating, electrical, and similar permits that the Contractor is required to obtain from the City Building Inspection Division for City-owned projects are fee exempt and will be obtained by the Agency.

The California Environmental Quality Act of 1970 (CEQA) may be applicable to permits, licenses, and other authorizations that the Contractor shall obtain from local agencies in connection with performing the Work. The Contractor shall comply with the provisions of CEQA in obtaining such permits, licenses, and other authorizations, which will be obtained in time to prevent delays to the Work.

The Contractor shall comply with permits, licenses, or other authorizations applicable to the Work obtained by the Agency in conformance with the requirements in CEQA.

6-11 GENERAL SAFETY REQUIREMENTS

Compliance with Safety & Health Regulations

Safety is a prime consideration in all Agency contracts. The Contractor shall conform to all applicable occupational safety and health standards, rules, regulations, and orders established by the State of California or Federal Government. The Contractor shall, upon request, submit to the Agency a copy of their Injury Illness Prevention Program (IIPP) (including Site Safety Plan and Code of Safe Work Practices) for review. The Contractor is required to fulfill the requirements of these programs during the prosecution of their work.

24-Hour Contact Information

The Contractor shall have on record with the Agency the following twenty-four (24) hour emergency contact numbers:

90. Traffic control device supplier: Supplier of barricades, steel plates, delineators, channelizers, construction signs, and other traffic control equipment to be used during construction.
91. Contractor representative: An employee of the Contractor having the authority to make decisions and the ability to respond to an emergency on the project at any time.
92. Safety representative: The Contractor's Safety Representative shall have the authority to make decisions regarding safety and health concerns on the project and to direct the Contractor's personnel to abate any hazard identified by the Agency.

Work During Hours of Darkness

Working areas utilized by the Contractor during the hours of darkness shall be illuminated to conform to the minimum illumination intensities established by California Occupational Safety and Health Administration, Construction Safety Orders and the Traffic Control Plans (TCP).

6-12 PUBLIC CONVENIENCE AND SAFETY

Public Convenience

All work within public streets and/or roadway rights-of-way shall be done in an expeditious manner and cause as little inconvenience to the traveling public as possible. Vehicles, bicycles,

and pedestrians must be allowed to pass at all times except during an emergency closure. See Section 7-8, "Peak Hours, Hours of Darkness, Holidays and Weekends", of these Specifications for time limitations.

Pedestrian and Bicyclist Access

The Contractor shall not block the movement of pedestrian or bicycle traffic. The Contractor shall provide for pedestrian and bicycle traffic by phasing construction operations or by providing alternative pedestrian and bicyclist access through or adjacent to construction areas. Proper advance notice signage with reasonable detours shall be installed and maintained through all phases of construction. Access to pedestrian and bicycle devices at traffic signals shall be maintained at all times. At no time shall pedestrians be diverted into a portion of the street used for vehicular traffic or on to private property unless adequate lane closure signage is in place. Pedestrian and bicycle access shall consist of four-foot (4') wide bridges across trenches and four-foot (4') wide passageways through construction areas. Hand railings for pedestrians shall be provided when required by Cal/OSHA Regulations or the Americans with Disabilities Act (ADA) on each side of each bridge or passageway to protect pedestrians from hazards caused by construction operations or adjacent vehicular traffic.

Railings or barricades, which border passageways located in roadway areas, shall be reflectorized on the side facing oncoming traffic.

Written Notification to Residences and Businesses

The Contractor shall notify, in writing, residents and business establishments along the route of the Work at least ten (10) Working Days prior to road closures and at least three (3) Working Days prior to disruption of ingress and egress. The notice provided to the residences or businesses shall include, at a minimum, schedule of closures with estimated closure times, closure location, alternate route or detour, and name and twenty-four (24) hour phone number of a contact person employed by the Contractor.

The Contractor shall notify, in writing, residents and business establishments along the route of the Work at least three (3) Working Days prior to placing parking restrictions within the City right-of-way. The notice provided to the residences or businesses shall include, at a minimum, schedule of parking restrictions with estimated times, location, and a name and twenty-four (24) hour phone number of a contact person employed by the Contractor.

Access to Driveways, Houses and Buildings

Access and passable grades shall be maintained at all times for business establishments during construction. Safe and passable pedestrian, bicyclist, and vehicular access shall be provided and maintained to fire hydrants, homes, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, hospitals, and establishments of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved. Ramps and driveways shall not have "lips" or elevation differences greater than three-eighths of an inch (3/8") or one (1) cm.

When abutting property owner's access across the right-of-way line is to be eliminated, repaired, or replaced under the Contract, the existing access shall not be closed until the replacement access facilities are completed and functional.

6-12.01 PROPERTY DAMAGE

Any property damage caused by the Contractor shall be repaired at the Contractor's expense to the satisfaction of the Agency.

Erection of Signs to Expedite Passage of Vehicles

The Contractor shall erect such warning and directional signs as necessary or as directed by the Agency for expediting the passage of public traffic through or around the Work and the approaches. All warning and directional signs shall comply with Section 6-13, "Public Safety and Traffic Control", in this Section of these Specifications; Section 12, "Construction Area Traffic Control", of these Specifications; and the Caltrans Manual of Traffic Controls.

Traffic Obstructions, Delays and Inconveniences

All public traffic shall be permitted to pass through the Work and the Contractor shall conduct operations that offer the least possible obstruction, delay, and inconvenience to the public.

Work On Private Property

The Contractor must obtain written permission from the owner of any privately owned property prior to beginning any work, storing materials or otherwise conducting any operations on said property. The written approval from the property owner must be on file with the Agency before any operations will be permitted on said property.

Hazardous Conditions Created

Whenever the Contractor's operations create a condition hazardous to pedestrians, bicyclists, or the traveling public, the Contractor shall, at the Contractor's own expense, furnish, erect and maintain any fences, temporary railing (Type K), barricades, lights, signs and other devices necessary or as directed by the Agency to prevent accidents or damage or injury to the public or property.

If needed for public use, roadway excavation shall be conducted to maintain a smooth and even surface satisfactory for use by public traffic at all times. The surface of the roadbed shall be kept in a smooth, even condition free of humps and depressions, satisfactory for the use of public traffic as determined by the Agency.

Temporary facilities that the Contractor uses to perform the Work or store or stage material or equipment shall not be installed or placed where they will interfere with the free and safe passage of public vehicular, bicycle, or pedestrian traffic.

6-13 PUBLIC SAFETY AND TRAFFIC CONTROL

General

All traffic controls shall be installed in accordance with the latest edition of the Caltrans "Manual of Traffic Controls for Construction and Maintenance Work Zones".

Responsibility for Safety

It is the Contractor's responsibility to provide for public safety and traffic control. The Agency may review the Contractor's operations and inform the Contractor if an unsafe or hazardous condition is observed. The Contractor may be directed verbally or via Field Instruction, letter, or other means to abate the hazard. The Contractor must comply with all directives for hazard abatement immediately and within the timeframe imposed by the Agency.

Passage of Emergency Vehicles

The Contractor shall provide for the uninterrupted passage of emergency vehicles through the Work Zone at all times regardless of the controlled traffic conditions in place at the time.

6-13.01 FURNISHING, INSTALLING, AND MAINTAINING TRAFFIC CONTROLS

Signs, lights, barriers, fences, temporary railing (Type K), barricades, and other facilities shall be furnished, erected and maintained by the Contractor to provide an adequate warning to the public

of dangerous conditions to be encountered during construction at all hours of the day or night. Warning and directional signs shall be erected and maintained as required by the Agency and by law. All traffic controls shall be installed as required by this Section and Section 12, "Construction Area Traffic Controls", of these Specifications.

Inadequate Traffic Controls and After-Hour Maintenance and Repairs

Should the Contractor appear negligent in furnishing and maintaining sufficient traffic control devices or protective measures or fail to provide flaggers as necessary to control traffic, the Agency may direct the Contractor, at the Contractor's expense, to abate the hazard.

Should the Agency point out the inadequacy of warning devices and protective measures, that action shall not relieve the Contractor from responsibility for public safety or abrogate the obligation to furnish and pay for these devices and measures.

Should the Contractor fail to properly furnish or maintain traffic controls, or correct a hazard caused by inadequate or inappropriate traffic control, the Agency will abate the hazard. All Agency costs to abate the hazard shall be reimbursed by the Contractor or deducted from the progress payment. If the Contractor is not available to perform after-hour maintenance and repair to traffic control devices, the Agency will correct the situation and deduct all costs from the progress payment.

Competent Flaggers

The Contractor shall provide competent and courteous flaggers to control traffic when necessary or requested by the Agency. All flaggers shall be trained as required by Cal/OSHA regulations and shall be prepared to provide verification of such training to the Agency when requested. See Section 12-2, "Flagging", of these Specifications for additional information.

Construction Signs

The Contractor is responsible for supplying, installing and maintaining all construction signs and posts. The Contractor will receive direction from the Agency as to the specific locations and placement of each sign. Regulatory signs or guide signs will be supplied, erected and maintained by the Agency, but must be protected from damage from construction activities by the Contractor through the duration of the project. See Section 12-3.08, "Construction Area Signs", of these Specifications for additional information.

Temporary Bridging of Excavations and Trenches

Whenever necessary or requested by the Agency, excavations shall be bridged with steel plates to allow an unobstructed flow of traffic,

93. Asphalt concrete "cutback" shall be placed around the edges of the plate to provide a ramp and smooth transition from the pavement to the plate to minimize wheel impact. All ramping must be accomplished to provide a minimum angle of approach of twelve to one (12:1).
94. Bridging shall be secured against displacement by using railroad spikes or other approved fastening device.
95. Bridging shall be placed and secured to work within the minimum noise levels indicated in the Colusa City Code.
96. Steel plates used for bridging shall extend at least one (1) trench width on each side beyond the edges of the trench. Any deviations from these requirements must be designed by a registered engineer and reviewed by the Agency.

97. Depending upon the depth of the excavation, soil type, vibration and other variables, the trench may require shoring to support bridging. The Contractor should confer with a California Licensed Engineer or other appropriate professional if there is any question about the capability of the excavation and bridging to support the forces of traffic.

Width Of Excavation	Minimum Thickness Of Steel Plates
2.0 ft. or less (0.6 m or less)	7/8 inch (22mm)
3.0 ft. (0.9m)	1 inch (25 mm)
4.0 ft. (1.2m)	1-1/4 inch (32mm)

In sidewalk areas, one and one-eighths inch (1-1/8") plywood may be substituted for steel plating. Asphalt concrete "cutback" or other non-displaceable material must be used to provide a ramp for pedestrian and handicap access. All ramping must be accomplished to provide a minimum angle of approach of twelve to one (12:1). Vehicular travel over backfilled but unpaved excavations will not be allowed, unless the Contractor provides a temporary surface suitable for driving consisting of at least two inches (2") of plant mix asphalt over six inches (6") of aggregate base, concrete slurry (completely cured), or traffic plates placed over the excavated area of sufficient width and thickness as indicated in this Section.

Entering and Leaving the Construction Zone

Construction equipment shall enter and leave the roadway by moving in the direction of public traffic. All movements of workmen and construction equipment on or across lanes open to public traffic shall be performed in a safe manner that will not endanger the workmen or the public. When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment operator shall yield to public traffic.

Existing Traffic Signal and Lighting Systems, Signs and Pavement Markings

Existing traffic signal and highway lighting systems shall be kept in operation during progress of the Work. When traffic signal shutdown is permitted by the Agency, the Contractor shall notify the Agency at least five (5) Working Days prior to shutdown. Traffic signal detectors accidentally cut or damaged during construction shall be repaired or replaced by the Contractor at the Contractor's expense and be operational within seventy-two (72) hours. When traffic signals are approved for shutdown, the Contractor shall control traffic by use of flaggers as directed by the Agency, "STOP" signs will not be permitted at these locations.

Existing signs and pavement markings shall be maintained by the Contractor and shall not be removed or altered without Agency approval.

Dust

Water or dust palliative shall be applied if ordered by the Agency for the alleviation or prevention of dust nuisance caused by the Contractor's operations as provided in Section 17, "Dust Control", of these Specifications.

Removal of Spillage from Roadway

The Contractor shall immediately remove any spillage resulting from hauling operations along or across any public traveled way.

6-14 TRAFFIC CONTROL PLANS (TCP)

Traffic Pattern Changes

The Contractor shall notify the Agency in advance of the Contractor's desire to change any existing traffic patterns. Traffic lanes for public use shall be at least ten feet (10') in width. Whenever feasible an additional four feet (4') shall be provided for a bicycle lane. If it is not feasible to provide a separate bicycle lane, the Contractor shall post signage before the construction area stating, "SHARE the Road with Bicyclists". Additionally, when the lane is shared, the Contractor shall post signage for a maximum speed limit of 25 MPH in the shared lane. For traffic pattern changes that do not require a road closure, the Contractor shall provide the Agency with a minimum of three (3) Working Days advance notification, unless otherwise approved or deemed an emergency lane closure by the Agency. For all road closures, the Contractor shall provide the Agency with a minimum of twenty (20) Working Days notice prior to the desired closure date, unless otherwise approved or deemed an emergency road closure by the Agency.

Traffic Control Plans (TCP)

Unless the requirement has been modified by 1) the Special Provisions, 2) specifications for development or frontage work, or 3) an encroachment permit, the Contractor shall submit a Traffic Control Plan (TCP) to the Agency for review. The TCP shall show traffic control measures to be used for vehicles, bicyclists, and pedestrians affected by the construction. Three (3) sets of the TCP shall be submitted on eleven-inch by seventeen-inch (11"x17") (minimum) paper. The Contractor will not be allowed to begin work associated with the road or lane closure until the TCP is reviewed by the Agency.

TCP's for the following types of closures will be reviewed and returned within five (5) Working Days:

98. Single lane closures that cannot be set up in accordance with the guidelines of the current edition of the Caltrans "Manual of Traffic Controls"
99. All multi lane (in the same direction of travel) closures
100. AN lane closures outside the working hours provided in the Contract or permit, including Saturdays, Sundays, and holidays
101. Requests for lane closures on streets designated as "no closures permitted during the holiday season"
102. Closures affecting pedestrian and bicycle facilities

TCP's for the following types of closures will be reviewed and returned within twenty (20) Working Days:

103. All "staged" construction traffic control changes
104. All road closures
105. All freeway/highway closures
106. All freeway/highway ramp and lane closures
107. All shifts of traffic which will be implemented on a twenty-four (24) hour basis

The Agency reserves the right to extend the above time periods or to request for and review a TCP if special conditions warrant.

Detours used exclusively by the Contractor for hauling materials and equipment shall be constructed and maintained by the Contractor at the Contractor's expense. If the Contractor's

operations are damaging the roadway, the Agency has the authority to regulate the Contractor's operations and direct the Contractor to repair the roadway at the Contractor's expense.

6-15 BARRICADING OPEN TRENCHES

Any excavation permitted by the Agency to be left open shall be barricaded with Type II or Type III barricades with flashers. Signs stating "OPEN TRENCH" shall be posted when requested by the Agency. All open excavated areas shall be barricaded with at least two (2) Type III barricades at the end of the excavation that faces oncoming traffic. Any excavation within four feet (4') of the traveled way, not protected by K-rail or a similar traffic control barrier approved by the Agency, shall be backfilled at the end of the work shift or plated in accordance with Section 6-13.08, "Temporary Bridging of Excavations and Trenches", in this Section of these Specifications.

6-16 EXISTING UTILITIES

General

The Contractor shall coordinate and fully cooperate with the Agency and utility owners for the location, relocation, and protection of utilities. The Contractor's attention is directed to the existence of utilities, underground and overhead, necessary for all buildings in the Work area. The Contractor shall arrange with utility owners for the location of service lines serving these buildings in advance of the actual construction and for the relocation of such facilities, if necessary, by the utility owner or the Contractor.

Maintenance and Protection

Unless otherwise shown or specified in the Contract, the Contractor shall maintain in service all drainage, water, gas, sewer lines, power, lighting, telephone conduits, and any other surface or subsurface utility structure that may be affected by the Work. However, the Contractor, for convenience, may arrange with individual owners to temporarily disconnect service lines or other facilities along the line of the Work. The cost of disconnecting and restoring such utilities shall be borne by the Contractor.

Unless otherwise specified in the Special Provisions, the Contractor shall protect all existing utilities on all projects being constructed, whether inside or outside of highway rights-of-way. The utility owner in these cases may elect to provide the necessary protective measures and bill the Contractor for the cost. "Existing utilities" includes traffic control devices, conduits, streetlights, and related appurtenances.

Existing utility facilities that are to be relocated, including traffic signals and light poles, shall be relocated prior to paving. No paving shall be performed around existing utility facilities that are to be relocated.

Exact Locations Unknown

The locations of existing utility facilities shown on the Plans are approximate and represent the best information obtainable from utility maps and other information furnished by the various utility owners involved. The Agency warrants neither the accuracy nor the extent of actual installations as shown on the Plans. There may be additional utilities on the property unknown to either party to the Contract. If, during the course of the Work, additional subsurface utilities are discovered, the Agency may make adjustments to the Work. Compensation for such adjustments will be in accordance with Section 9, "Changes and Claims", of these Specifications.

In accordance with Government Code Section 4215, the Agency will compensate the Contractor for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, removing, relocating or protecting existing main or trunk line utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment on the Work necessarily idled during

such work. In no event shall the Agency be liable for any further or additional costs resulting directly or indirectly from any such occurrence. Compensation will be in accordance with Section 9, "Changes and Claims", of these Specifications. Nothing herein shall be deemed to require the Agency to indicate the presence of existing utility services, laterals, or appurtenances whenever their presence can be inferred from other visible facilities such as buildings, meters, junction boxes, valves, service facilities, identification markings, and other indicators on or adjacent to the Work.

If the Contractor discovers utilities not identified in the Plans or Specifications, the Contractor shall immediately notify the Agency and the utility owner by the most expeditious means available and later confirm in writing. If the completion of the Work is delayed by failure of the Agency or the utility owner to remove, repair, or relocate the utility, such delay may be an unavoidable delay as defined and provided for in Section 7-12.02, "Unavoidable Delays", of these Specifications. Nothing herein shall preclude the Agency from pursuing any appropriate remedy against the utility for delays that are the responsibility of the utility. The Contractor shall not be assessed liquidated damages for delay in completion of the Work for that portion of such delay as is caused by failure of the Agency or the owner of a utility to provide for the removal or relocation of existing utilities.

Underground Service Alert (USA)

The Agency is a member of the Underground Service Alert North (U.S.A.) one-call program. Except in an emergency, the Contractor and any Subcontractor planning to conduct any excavation shall notify the U.S.A. at least two (2) Working Days, but no earlier than fourteen (14) Calendar Days, in advance of performing excavation work. U.S.A. can be reached by calling the toll free number (800) 227-2600. U.S.A. does not accept emergency calls. The provisions of Government Code Section 4216 shall be followed.

Each phase of a project shall be called into U.S.A. and continuing excavation reported every fourteen (14) Calendar Days. The U.S.A. Regional Notification Center will provide an inquiry identification number to the person contacting the center. The U.S.A. inquiry identification number shall be available to the Inspector at the job site along with the date U.S.A. was called. If the U.S.A. notifications are not kept up-to-date, the excavation may be stopped and a new forty-eight (48) hour notice will be required before continuing the excavation. If, at any time during an excavation for which there is a valid inquiry identification number, the field markings are no longer reasonably visible, the Contractor shall contact the appropriate regional notification center to have the area re-marked.

Prior to calling U.S.A., the Contractor shall clearly mark the excavation site with white, water-soluble paint in paved areas or flags, stakes, whiskers, or some other approved method, in unpaved areas. This paint shall be applied as white dots located inside the excavated area so that when construction is completed there will be no remnants of the paint. At those locations where the excavation is not known, the Contractor shall make an attempt to closely identify and outline the areas to be explored. The Contractor shall determine the exact location [twenty-four inches (24") from outside edge on either side of the facility] of utilities in conflict with the proposed excavation by exposing the subsurface installation with hand tools before using any power-operated or power-driven equipment. The Contractor shall not call in to U.S.A. the entire project boundaries or, on road construction projects, the entire length of the project. The Contractor shall only request the marking of facilities within the area to be excavated within fourteen (14) Calendar Days of the call.

Damage to Existing Utilities

The Contractor shall notify the affected utility of any contact, scrape, dent, nick, or damage to their facility. Any operator or excavator who negligently violates Government Code Section 4215 is subject to a civil penalty in an amount not to exceed ten thousand dollars (\$10,000).

Any operator or excavator who knowingly and willfully violates Government Code Section 4215 is subject to a civil penalty in an amount not to exceed fifty thousand dollars (\$50,000).

Markings

The following table designates color codes and symbols that shall be used by the Contractor and the utility owners to identify utilities:

Field Markings		
Color Codes And Symbols		
Color	Symbol	Name
Safety Precaution Blue	W	Water
Safety Alert Orange	FA	Fire Alarm
	Tel	Telephone/Communication
	R	Railroad
	TV	Television/CATV
	WU	Western Union
Safety Green	S D	Sewer or Storm Drain
Safety Red	L	Street Lighting
	E	Electric
	T	Traffic Signals
High Visibility Safety Yellow	G	Gas
	Company Name	Oil or Chemical
		Steam
Purple	RW	Reclaimed Water
Pink/Fuchsia	TSM	Temporary Survey
White	USA	Proposed Excavation - Paint outline of proposed excavation area with white dotted line.

APPROVAL OF CONTRACTOR'S PLANS NO RELEASE FROM LIABILITY

The review or approval by the Agency of any working drawing or any method of work proposed by the Contractor shall not relieve the Contractor of any of the Contractor's responsibility for any errors and shall not be regarded as any assumption of risk or liability by the Agency or any officer, official, agent, employee, member, volunteer, affiliate, or their duly authorized representatives. The Contractor shall have no claim under the Contract because of the failure or partial failure or inefficiency of any reviewed or approved plan or method. Agency review or approval means that the Agency has no objection to the Contractor using the proposed plan or method at the Contractor's responsibility and risk.

CONTRACTOR SHALL NOT MORTGAGE EQUIPMENT

The Contractor shall not mortgage or otherwise convey the title of the plant, machinery, tools, appliances, supplies, or materials that may at any time be in use, or further required or useful, in the prosecution of the Work, without prior written consent of the Agency.

6-17 PROPERTY RIGHTS IN MATERIALS

Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been installed, attached or affixed to the Work, and on which partial payments have been made by the Agency. All such materials shall be the property of the Contractor and the Agency jointly as their interests may appear, and shall not be removed from the Work by the Contractor without the Agency's consent.

6-18 EXCAVATION AND TRENCH SAFETY

Permit

The Contractor must obtain a permit from the Division of Industrial Relations per Labor Code Section 6500, as specified in California Code of Regulations, Title 8, Article 6, Section 1539 "Permits" of the Construction Safety Orders, for all excavations five feet (5') or deeper to which an employee is required to descend. The permit shall be kept at the construction site at all times.

Shoring, Bracing, Shielding and Sheeting

In accordance with Labor Code Section 6705, at least five (5) Working Days in advance of excavation of any trench or trenches five feet (5') or more in depth, with a total value of twenty-five thousand dollars (\$25,000) or more, the Contractor shall submit to the Agency a detailed plan showing the design of shoring, bracing, sloping, or other provisions for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a California registered civil or structural engineer. A signed copy of the detailed plan shall be on the site at the time of the excavation. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders. Nothing in this Section shall be construed to impose tort liability on the Agency or any of its employees. These systems must support the sides of the excavation and prevent soil movement that could cause injury to any person or structure. Any damage resulting from a lack of adequate shoring, bracing, shielding or sheeting shall be repaired at the Contractor's expense.

The Contractor shall immediately replace or repair any unsafe ladder, scaffolding, shoring, or bracing, or correct any other dangerous or hazardous situation that exists.

A Competent Person, as defined in California Code of Regulations, Title 8, Construction Safety Orders, Section 1504, "Definitions", shall be on site at all times when the Contractor's employees are working within the trench. A "Competent Person" is one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

The price bid for work that will require an excavation of five feet (5') or deeper (or less if conditions warrant) shall include the cost of adequate sheeting, shoring and bracing, or equivalent method conforming to applicable safety orders, unless a separate bid item for such work is included in the bid form.

6-19 PRESERVATION OF PROPERTY

Roadside trees and shrubbery that are to remain, pole lines, fences, signs, traffic control devices, striping, survey markers and monuments, buildings and structures, conduits, underground or aboveground pipelines, and any other improvements and facilities shall be protected from injury or damage. If ordered by the Agency, the Contractor shall provide and install suitable safeguards to protect such objects from injury or damage, if such objects are injured or damaged by reason of the Contractor's operations, said objects shall be replaced or restored at the Contractor's expense to a condition as good as when the Contractor entered upon the Work. The Contractor shall receive Agency approval before the removal of any road sign or permanent traffic control device that interferes with the Work.

6-20 OVERLOADING

The Contractor shall determine safe loading capacities and shall not overload any structure, equipment, pavement, or material beyond its safe capacity, or significantly deteriorate the preconstruction condition, during construction. In addition to assuming full responsibility for bodily injury resulting from any such overloading, the Contractor shall repair to the Agency's satisfaction or reimburse the Agency for the costs of repairing the damage. For pavement assessment prior to construction, contact the City Engineer.

SECTION 7.

PROSECUTION OF THE WORK

7-1 BEGINNING OF WORK

No work may take place prior to receipt of the executed Contract and review of the prescribed bonds and insurance. Upon receipt of the executed Contract and approval of the bonds and insurance by the Agency, a Notice to Proceed will be issued which will constitute authorization to begin work.

7-2 AMOUNT OF WORK UNDER CONSTRUCTION

The Contractor shall not have more work under construction than can be prosecuted properly with regard to the rights of the public.

7-3 PRECONSTRUCTION CONFERENCE AND PROGRESS MEETINGS

Prior to beginning work a preconstruction conference shall be held for the purpose of reviewing the Work. The Contractor must attend this preconstruction conference, and shall invite Subcontractors and others necessary to ensure all topics are adequately covered. Topics discussed include, but are not limited to, mobilization, access, temporary facilities, utilities, subcontractors, schedules, procedures, correspondence, progress payments, payroll records, Storm Water Pollution Prevention Plans (SWPPP), coordination, safety, after-hour contacts for Contractor and Agency personnel, quality control/quality assurance, personnel assignments, and other topics as appropriate.

Progress meetings, as stipulated in the Special Provisions or as may be required by the Agency, will be conducted throughout the duration of the Contract. The purpose of these meetings is to inform, discuss, and resolve issues related to the Work; the Contractor or the Contractor's agent shall attend. Topics discussed include, but are not limited to, progress, schedules, safety, SWPPP, Requests for Information, Change Orders, Field Instructions, field coordination, submittals, quality control/quality assurance, testing, startup, safety, and other topics related to the Work.

7-4 WORK TO BE PROSECUTED WITH ADEQUATE SUPERVISION, LABOR FORCE, EQUIPMENT AND METHODS

The Contractor shall prosecute the Work under the Contract with all materials, tools, machinery, apparatus, and labor necessary to complete the Work as described, shown, or reasonably implied under the Contract, or as directed by the Agency, on or before the scheduled completion date.

Superintendence

The Contractor shall keep on the Work, throughout its progress, a competent superintendent who shall have complete authority to represent and act for the Contractor. Such superintendent shall be capable of reading and understanding the Contract, and shall receive and follow any instruction given by the Agency.

Whenever the Contractor or the Contractor's superintendent is not present on a particular part of the Work where it may be desired to give direction, orders will be given by the Agency and shall be received and obeyed by the foreman or other representative who may have charge of the particular work in reference to which the orders are given, or the Agency may stop the work until the Contractor or the Contractor's superintendent arrives.

Labor

Workers, laborers, or mechanics skilled in each class of work shall accomplish every part of the Work.

Equipment and Methods

Only equipment and methods suitable to produce the quality required by the Contract will be permitted to operate on the Work. Except as specified in Section 5-7, "Contractor's Equipment", of these Specifications, equipment shall be that used in general practice for the work undertaken. If any part of the Contractor's plant, equipment, or methods of executing the Work is unsafe, inefficient, or inadequate to ensure the required quality or rate of progress of the Work, the Agency may order the Contractor to modify the Contractor's facilities or methods. The Contractor shall promptly comply with such orders at the Contractor's expense. However, neither compliance with such orders nor failure of the Agency to issue such orders shall relieve the Contractor from the obligation to secure the degree of safety, the quality of the Work, and the rate of progress required by the Contract. The Contractor is responsible for the safety, adequacy, and efficiency of his plant, equipment, and methods.

7-5 SCHEDULES

The Contractor shall submit a schedule, in accordance with this Section and Section 5-8, "Contractor's Submittals", of these Specifications, which illustrates the Contractor's plans for carrying out the Work. The Agency will review the schedule, and any updates or revisions, for conformance to the Contract. Agency review of a schedule, update, or revision does not relieve the Contractor of responsibility for the feasibility of the schedule or requirements for accomplishments of milestones and completion within Contract Time, nor does the Agency review warrant or acknowledge the reasonableness of the schedule's logic, durations, labor estimates, or equipment productivity.

If no separate item is provided in the Bid Form, payment for schedules shall be included in payments for mobilization. If no bid item for mobilization is included in the Bid Form, conformance with this provision is incidental to and included in the various bid items and no additional payment will be made. Updates and revisions of the schedules are included in the prices paid for other items of work.

The Agency may withhold up to twenty-five percent (25%) of the Progress Payment until a satisfactory baseline schedule, update, or revision has been submitted and reviewed.

Progress Schedule

A bar chart or similar form of progress schedule will be required for all contracts. Unless otherwise agreed to by the Agency, the latest version of MS Project or Primavera shall be used. The Contractor shall submit three (3) copies, plus an electronic copy, of a complete baseline progress schedule at the preconstruction conference (see Section 7-3, "Preconstruction Conference and Progress Meetings", in this Section of these Specifications). The baseline progress schedule shall show all major portions of the Work, the estimated dates on which the Contractor shall start each portion of the Work, and the contemplated dates for completing each portion of the Work or the approximate percentage of the Work or portions of the Work scheduled for completion at any time.

Unless agreed to by the Agency, the progress schedule shall be updated and submitted to the Agency with each Progress Payment request or when requested by the Agency. All schedule updates or revisions shall show the effects of any occurrence upon which the Contractor will base a notice of potential claim or has based any claim (see Section 9, "Changes and Claims", of these Specifications), and shall expressly call the Agency's attention to those effects. A revised or updated schedule shall be submitted within ten (10) Working Days of an Agency request.

The Contractor shall carry out the various elements of the Work concurrently, as is practicable, and shall not defer construction of any portion of the Work in favor of any other portion, without the express written approval of the Agency.

Despite the submission of a progress schedule, the Contractor shall be governed by the direction of the Agency if, in the Judgment of the Agency, it becomes necessary to accelerate the Work or any part thereof, or cease work at any particular point and concentrate the Contractor's forces at such other point or points, with the intent of preventing delays.

Critical Path Method

When required by the Special Provisions, in lieu of the progress schedule required by the previous Section (Section 7-5.01), the Contractor shall submit a practicable Critical Path Method (CPM) network schedule within thirty (30) days of receipt of the Contract. Unless otherwise agreed to by the Agency, the latest version of MS Project or Primavera shall be used. The CPM network diagram shall be time-scaled and include printouts showing the mathematical analysis of the CPM network diagram. Activities shall include, but not be limited to, construction activities, procurement activities, submittal activities, and any other activities by the Contractor, the Agency, or any other entity that may impact the Work. Submittal and procurement activities shall include falsework drawings, post tensioning drawings, test procedures, mix designs, long time lead items, etc. The following information shall be shown for each activity:

Unique number(s) for each activity

Activity description

Activity relationships and dependencies (logic)

Activity duration in Working Days

Early start, early finish, late start, late finish dates (calendar date, i.e. day, month, year)

Total float, free float

For completed activities: actual start dates, actual finish dates, duration, and logic

Interim milestone dates and completion dates

Detailed list of work contained within each activity

Manpower loading for each item of work for unit price contracts

Cost loading for each item of work for lump sum contracts

The Contractor shall submit three (3) full-size paper copies and an electronic copy of each CPM schedule. Updates to the CPM schedule shall be submitted with each Progress Payment request, when Contract events are changed, or within ten (10) Working Days of an Agency request. A narrative describing the general status of the Work and addressing any problem areas or delays shall be submitted with each revision or update, with impacts on critical path items of work highlighted. A corrective course of action shall also be included when problem areas or delays are encountered.

All schedule updates or revisions shall show on the critical path the effects of any occurrence upon which the Contractor has based a notice of potential claim or will base any claim (see Section 9, "Changes and Claims", of these Specifications) and shall expressly call the Agency's attention to the effects.

Four-Week Rolling Schedule

A four-week rolling schedule shall be provided by the Contractor at each progress meeting. The schedule shall provide an accurate representation of the work performed the previous week and work planned for the current week and subsequent two (2) weeks.

The schedule shall be provided in a bar chart form with information derived from and consistent with the current project schedule. The schedule shall include activity ID number, activity description, start and finish dates (both scheduled and actual), and any other information requested by the Agency. Each activity shall be coded to note activities on the critical path and activities that are behind schedule.

7-6 UNUSUAL SITE CONDITIONS

The Contractor shall promptly, and before the following conditions are disturbed, notify the Agency, in writing, of any:

108. Material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, and that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
109. Subsurface or latent physical conditions at the site differing from those indicated in the Contract.
110. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The Contractor shall follow up the prompt notification with written documentation of the unusual site condition within five (5) Working Days. The Agency will have the site remediated or issue a Contract Change Order per Section 9, "Changes and Claims", of these Specifications if it finds that the conditions do materially differ or involve hazardous waste.

7-7 PURSUANCE OF WORK DURING INCLEMENT WEATHER

During inclement or unsuitable weather or other unfavorable conditions, the Contractor shall pursue only such portions of the Work that will not be damaged by the weather or unfavorable conditions. When the weather or unfavorable conditions creates hazardous travel or working conditions, as determined by the Agency, the Contractor may be directed to stop that portion of the Work, in accordance with Section 5-21, "Temporary Suspension or Delay of Work", of these Specifications, until the weather clears or the conditions are no longer unfavorable.

The Contractor must keep roads safe and inspect and maintain stormwater pollution prevention and erosion control devices during inclement weather or unfavorable conditions. Lane and road closures may not be allowed if the Agency determines that the traffic controls will create unnecessary risk to the traveling public, the Contractor, and/or Agency employees.

7-8 PEAK HOURS, HOURS OF DARKNESS, HOLIDAYS, AND WEEKENDS

7-8.01 ALLOWABLE TIMES AND HOURS OF WORK

Unless otherwise noted in the Special Provisions or approved by the Agency, no work shall be done between the hours of 6 p.m. and 7 a.m., or on Saturdays, Sundays, or legal holidays. Unless otherwise noted in the Special Provisions or approved by the Agency, no lane of traffic shall be closed to the public during the peak hours of 7:00 a.m. to 8:00 a.m. and 3:30 p.m. to 6:00 p.m., except as necessary for the proper care and protection of work already performed or in case of an emergency repair as defined below. These exceptions are allowed only with the Agency's written permission.

Off-Period Work

A written request to work between 6 p.m. and 7 a.m. or on Saturdays, Sundays, or legal holidays, or to close a lane of traffic during peak hours must be submitted at least two (2) Working Days in advance of the intended work. The Agency will evaluate the Contractor's request to determine if there is a benefit to the Agency, a nuisance or a hazard to the public, the project, or the area surrounding the site, and if the Contractor should pay any Agency overtime costs related to the off-period work. The Agency may place conditions on any approval of off-period work based on this analysis.

Emergency Repairs

An emergency repair is a repair to the Work (including traffic controls, barricades, or temporary signs) required as a result of an unforeseen event that poses a danger to the public or Jeopardizes the integrity of the Work, whether completed or not. The Contractor may be allowed to close a lane of traffic or work at night, on Saturdays, Sundays, or legal holidays for an emergency repair. The Contractor must notify the Agency within one (1) hour of dispatch of the Contractor's repair crews, and give their name, an emergency contact number, the location of the emergency repair, and a tentative completion date and time. The Contractor shall notify the Agency when the emergency repair is completed and the road is clear, or, if an extension of time is required, the Contractor must provide a revised tentative completion date and time.

Revocation of Permission For Off-Period Work

The Agency may revoke permission for off-period work if the Contractor endangers the public, an employee, or themselves by violating a safety and health regulation, or fails to maintain an adequate work force and equipment for reasonable prosecution and inspection of such work.

Working Shifts

Two- or three-shift operations may be established as a regular procedure by the Contractor upon written permission from the Agency. Such permission may be revoked if the Contractor fails to comply with applicable safety and health regulations, fails to maintain adequate force and equipment for reasonable prosecution and inspection of the Work, or fails to provide sufficient artificial light to permit the Work to be carried out safely and appropriately and to permit proper inspection.

7-9 TEMPORARY FACILITIES AND SERVICES

Unless specified otherwise in the Special Provisions, the Contractor shall be responsible for providing and maintaining necessary material storage facilities, utilities, field offices, temporary roads, fences, security, etc. for prosecuting the Work. The Contractor shall not connect to or draw construction water from fire hydrants without written approval from the utility owner and the Agency.

7-10 PROTECTION OF WORK, PERSONS AND PROPERTY

The Contractor shall protect the Work and materials from damage until completion and acceptance of the Work. Neither the Agency nor any of its agents assume any responsibility for collecting funds from any person or persons that damages the Contractor's work.

The Contractor shall store materials and equipment in accordance with manufacturer's recommendations and erect such temporary structures as required to protect them from damage.

The Contractor shall furnish guards, fences, warning signs, walks, and lights, and shall take all other necessary precautions to prevent damage or injury to persons or property.

7-11 PROOF OF COMPLIANCE WITH CONTRACT

When requested by the Agency, the Contractor shall submit properly authenticated proof of the Contractor's compliance with the Contract.

7-12 DELAYS

The Contractor shall provide notification to the Agency for any delays, in accordance with Section 7-13, "Notice of Delays", in this Section of these Specifications.

Avoidable Delays

The Contractor shall not receive any time extensions or compensation for avoidable delays. Avoidable delays include, but are not limited to, the following:

111. Delays that affect only a portion of the work but do not prevent or delay the prosecution of controlling items of work nor the completion of the whole Work within the Contract Time.
112. Delays associated with the reasonable interference of other contractors employed by the Agency that do not necessarily prevent or delay the prosecution of controlling items of work or the completion of the whole Work within the Contract Time.
113. Delays associated with loss of time resulting from the necessity of submitting plans for Agency approval or from Agency surveys, measurements, inspections, and testing.
114. Delays that could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or Subcontractors.
115. Any curtailment of the Contractor's operations due to the action of the Air Pollution Control Board or the City of Colusa.

Unavoidable Delays

The Contractor may be granted an extension of Contract time for delays that are determined to be beyond the control of the Contractor, impact a controlling item of work, and could not be prevented by the exercise of care, prudence, foresight, and diligence. Unavoidable delays may include Agency acts, acts of God or of the public enemy, fire, floods, epidemics, and strikes. Material shortages and delays in utility company relocations may be classified as unavoidable if the Contractor produces satisfactory evidence of acting in a timely manner.

116. The Contractor shall not receive any additional compensation due to inclement or unsuitable weather or conditions resulting therefrom, acts of God or of the public enemy, fire, floods, epidemics, strikes, material shortages, or utility relocations.
117. The Contractor may be entitled to additional compensation for unavoidable delays the Agency determined resulted from an Agency act or the discovery of cultural resources as specified in Section 10-12, "Archeological and Cultural Resources", of these Specifications, except as modified below:
 - a. Compensation for unavoidable delays shall not be granted when the Contractor could have reasonably anticipated the delay.
 - b. When there are two (2) or more concurrent delays and at least one (1) is non-compensable, no compensation other than time extension shall be provided.
 - c. Compensation for unavoidable delays shall be granted only if such unavoidable delay affects controlling operations that would prevent completion of the Work in accordance with the provisions of Section 9-10 "Compensable Unavoidable Delays."

7-13 NOTICE OF DELAYS

The Contractor shall immediately notify the Agency in writing if the Contractor foresees any delay in the prosecution of the Work or immediately upon the occurrence of any unavoidable delay, but in no case shall the written notice be provided to the Agency later than two (2) Working Days after the occurrence of the unavoidable delay. The Contractor shall state the probability of the delay occurring and its cause so the Agency may take steps to prevent the occurrence or continuance of the delay and determine whether the delay is avoidable or unavoidable, its duration, and the extent.

The Agency will assume that all delays were avoidable unless the Agency was notified as indicated above and through its investigation found them unavoidable. No consideration for additional time or compensation will be given for any delay not called to the Agency's attention at the time of its occurrence.

7-14 CARELESS DESTRUCTION OF STAKES AND MARKS NO CAUSE FOR DELAY

If the Contractor or Subcontractors carelessly destroy Agency-placed stakes and marks causing a delay in the Work, the Contractor shall have no claim for damages or time extensions. See also Section 5-9, "Surveys", of these Specifications.

7-15 TIME OF COMPLETION

Time is of the essence on all Agency contracts. The Contractor shall complete all of the Work called for under the Contract within the Contract Time set forth in the Special Provisions.

The Agency will furnish the Contractor a weekly statement showing the number of days charged to the Contract for the preceding week, the number of days of time extensions approved or under consideration, the number of days originally specified for the completion of the Contract, and the extended date for completion. The Contractor will be allowed fifteen (15) days from the issuance of the weekly statement to file a written protest stating how the Contractor's estimate of Contract days charged to the Contract differs from the Agency's. If no protest is received, it shall be deemed by the Agency that the Contractor has accepted the statement as being correct-

7-16 EXTENSION OF TIME NOT A WAIVER

Time extensions granted for unavoidable delays or for the execution of extra or additional work shall not operate as a waiver of the Agency's rights under the Contract.

7-17 INCLEMENT WEATHER AND CONTRACT TIME

A Contract day will not be charged if, in the opinion of the Agency, inclement or unsuitable weather or its effects prevents working on the current controlling operation at the beginning of the shift for at least five (5) consecutive hours, or for at least (5) hours during the shift. A current controlling operation is any feature of the Work (e.g., an operation or activity including settlement, curing periods, and submittal activities) that if delayed or prolonged will delay the time of completion of the Contract.

7-18 EXTENSION OF TIME

The Contractor will be allowed a time extension to complete the Work equal to the sum of all unavoidable delays as determined in accordance with Section 7-12.02, "Unavoidable Delays", in this Section of these Specifications, plus any adjustments in Contract Time due to Contract Change Orders as outlined in Section 9-12, "Time Extensions for Changes", in these Specifications. During such time extension, the Contractor will not be charged for extra engineering and inspection or liquidated damages. Requests for a time extension must be submitted in writing to the Agency within ten (10) days of the event that is the reason for the request for time extension and before the expiration of the Contract time. The written request shall include a time impact analysis that demonstrates how the occurrence delayed the work underway at the time of the occurrence that caused the delay.

7-19 SUBSTANTIAL COMPLETION

When the Contractor considers the entire Work, or a specific portion of the Work, substantially complete, the Contractor shall certify in writing to the Agency that the Work is substantially complete and request that the Agency grant substantial completion. Within five (5) Working Days, the Agency and the Contractor shall inspect the Work to determine the status of completion. If the Agency does not consider the Work ready for its intended use, the Agency will notify the Contractor in writing, giving the Agency's

reasons. If the Agency considers the Work ready for its intended use, the Agency will grant substantial completion. The Agency will provide a list of items to be completed or corrected (punch list) before Final Acceptance and Final Payment. Within ten (10) Calendar Days of being provided a list of items to be completed or corrected, the Contractor shall proceed to correct or complete such items. The counting of time for liquidated damages will cease for the entire Work, or a specific portion of the Work, on the date substantial completion is granted, but shall not bind the Agency to formal acceptance nor relieve the Contractor from the responsibility of completing or correcting any work.

7-20 CLEANING UP

Throughout the construction period, the Contractor shall keep the site of the Work in a presentable condition, dispose of any surplus materials, keep roadways reasonably clear of dirt and debris, keep all sidewalk and other pedestrian areas clear of dirt, loose gravel, debris and any tripping hazards, clean out all drainage ditches and structures, and repair any fences or other property damaged during the progress of the Work, to the satisfaction of the Agency. The Contractor shall also keep the work site cleaned of all rubbish, excess material, and equipment. All portions of the work shall be left in a neat and orderly condition prior to requesting final inspection. Surplus material shall be disposed of in accordance with Section 18-7, "Surplus Material Disposal", of these Specifications.

The final inspection will not be made until final clean up has been accomplished.

7-21 FINAL INSPECTION AND FIELD ACCEPTANCE

The Contractor shall notify the Agency in writing of the completion of the Work, and the Agency shall promptly inspect the Work. The Contractor or the Contractor's representative shall be present at the final inspection. The Contractor will be notified in writing of any defects or deficiencies. The Contractor shall proceed to correct such defects or deficiencies within ten (10) days of such notification. When notified that correction of the defective or deficient work is complete, the Agency will again inspect the Work to ascertain that the corrections are in accordance with the Contract. The Agency will issue a field acceptance letter and will recommend to the City Council final acceptance of the Work if it finds all the corrections acceptable. Field acceptance by the Agency shall cause the commencement of warranty periods, but shall not bind the City Council to final acceptance nor relieve the Contractor from the responsibility of completing or correcting any work.

7-22 FINAL ACCEPTANCE AND NOTICE OF COMPLETION

The Contractor acknowledges and agrees that completion for purpose of final payment shall mean the Contractor's complete performance of all Work required by the Contract Documents, amendments, Change Orders, Construction Change Directives and punch lists, and the City's formal acceptance of the Work, without regard to prior occupancy, substantial completion doctrine, beneficial occupancy or otherwise.

Acceptance of the Work shall be made only by formal written acceptance by the City. Recordation of a Notice of Completion shall be in the manner prescribed by law, provided that the Work shall then be fully and satisfactorily completed and the provisions of the Contract Documents fully and satisfactorily performed in all respects.

SECTION 8.

MEASUREMENT AND PAYMENT

8-1 BASIS AND MEASUREMENT OF PAYMENT QUANTITIES

It is the Contractor's responsibility to measure and/or compute the quantities of work completed, subject to verification by the Agency, under the terms of the Contract, in computing quantities, the length, area, solid contents, number, weight, or time as specified in the Contract or the Schedule of Values shall be used.

Unit Price Contracts

Payment for all work bid at a price per unit of measurement will be based upon the actual quantities of work as measured upon completion. The Estimated Quantities provided in the Bid Documents are for comparative bidding only. The Agency does not express or imply that the actual amount of work or materials will correspond to the Estimated Quantities. The Contractor shall make no claim nor receive any compensation for anticipated profits, loss of profit, damages, or any extra payment due to any difference between the amounts of work actually completed, or materials or equipment furnished, and the Estimated Quantities. See also Section 9-14, "Contract Change Order (CCO)", of these Specifications.

Lump Sum or Job Contracts

Progress Payments will be based on the Schedule of Values prepared by the Contractor and approved by the Agency prior to acceptance of the first Progress Payment request (see Section 8-5, "Progress Payment Procedures", in this Section of these Specifications). If requested by the Agency, the Contractor shall furnish full copies of Subcontracts showing actual costs, including an agreed amount for the Contractor's overhead. The Schedule of Values shall be consistent with the baseline progress schedule prepared by the Contractor pursuant to Section 7-5.01, "Progress Schedule", of these Specifications.

Payment for Mobilization

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the site; for the establishment of all offices, buildings, and other facilities necessary for the Work; and for all other work and operations which must be performed, or costs incurred, prior to beginning the Work.

Payment for mobilization will be as follows:

Mobilization Not a Pay Item

When the Contract does not include a separate pay item for mobilization, full compensation for mobilization will be included in the Contract lump sum price or in the prices paid for the various items of work in a unit price contract, and no additional compensation will be paid.

Mobilization a Pay Item

When the Contract or proposed Schedule of Values includes a separate item for mobilization, payment for mobilization will include full compensation for the furnishing of all labor, materials, tools, equipment, administrative costs, and incidentals for mobilization.

The Agency will pay no greater than five percent (5%) of the Total Contract Price as a separate pay item for mobilization. In the event the Contractor submits a mobilization pay item greater than five percent (5%) of the Total Contract Price, the Agency will pay any excess mobilization amount with the final Progress Payment.

Payment for mobilization will be prorated as follows:

When the Progress Payment request is five percent (5%) or more of the original Total Contract Price (excluding mobilization), fifty percent (50%) of the contract item price for mobilization or two and one-half percent (2.5%) of the Total Contract Price, whichever is less, will be paid for mobilization.

When the Progress Payment request is ten percent (10%) or more of the original Total Contract Price (excluding mobilization), seventy percent (70%) of the contract item price for mobilization or three and one-half percent (3.5%) of the Total Contract Price, whichever is less, will be paid for mobilization.

When the Progress Payment request is twenty percent (20%) or more of the original Total Contract Price (excluding mobilization), ninety percent (90%) of the contract item price for mobilization or four and one-half percent (4.5%) of the Total Contract Price, whichever is less, will be paid for mobilization.

When the Progress Payment request is fifty percent (50%) or more of the original Total Contract Price (excluding mobilization), one hundred percent (100%) of the contract item price for mobilization or five percent (5%) of the Total Contract Price, whichever is less, will be paid for mobilization.

After final acceptance of the Contract, the amount, if any, of the Contract item price for mobilization in excess of five percent (5%) of the original Total Contract Price will be included for payment in the final estimate made in accordance with Section 8-11, "Final Estimate and Payment", in this Section of these Specifications.

The Agency will not pay additional mobilization compensation for work under a Contract Change Order. Payment for mobilization shall be subject to retention per Section 8-7, "Retention", in this Section of these Specifications.

8-2 SCOPE OF PAYMENT

General

Compensation under the terms of the Contract shall be full payment for the Work, including loss or damage arising from the nature of the Work, action of the elements, or unforeseen difficulties encountered during the prosecution of the Work and until its final acceptance; and all risks connected with the prosecution of the Work.

Unit Price Contract

Progress Payments will be made based on the unit price bid and measured quantities, for work completed, plus work completed on approved Change Orders. For compensation for alterations in quantities of work, including deviations greater than twenty-five percent (25%), see Section 9-8.02, "Payment for Changes - Unit Prices", in these Specifications.

Lump Sum or Job Contract

Progress Payments will be based on the approved Schedule of Values for work completed, plus work completed on approved Change Orders.

Final Pay Items

An item designated as a Final Pay Item in the Contract shall be paid for as specified in Section 9-1.015, "Final Pay Items", of the State Specifications.

Allowances

Allowances may be included in the Bid Form for materials and/or work that may be added during the course of the Contract. The Allowance may be used in whole, in part, or not at all as determined by the Agency. Whenever costs of the Work included in the Allowance item are more or less than the specified Allowance amount, the Total Contract Price will be adjusted accordingly by Contract Change Order. The

Contractor shall make no claim nor receive any compensation for anticipated profits, loss of profit, damages, or any extra payment due to any difference between the amounts of work actually completed, or materials or equipment furnished, and the Estimated Quantities for the Allowance.

Payment for Material Not Incorporated in the Work

No Progress Payments will be made for materials and equipment not incorporated in the Work, unless specifically set forth in the Special Provisions or authorized by the Agency.

8-3 WORK TO BE DONE WITHOUT DIRECT PAYMENT

Compensation for any portion of the Work not specifically identified in the Bid Form or Schedule of Values is understood to be included in the price for other items, unless specified in the Special Provisions as extra work. No additional compensation is allowed for additional shifts or premium pay necessary to ensure that the Work is completed within the time limits specified in the Contract.

8-4 PAYMENT FOR USE OF COMPLETED PORTIONS OF WORK

If the Agency accepts a completed or partially completed portion of the Work under Section 4-10, "Use of Completed Portions", of these Specifications, the Contractor will be compensated in accordance with Sections 8-11, "Final Estimate and Payment", and 8-12, "Final Payment to Terminate Liability of Agency", in this Section of these Specifications. When the Agency accepts a completed or partially completed portion of the Work, the warranty period for that portion commences and the Contractor will be relieved of any further maintenance and protection of that portion. The Contractor will not be relieved of the Contract requirements for repairing or replacing defective work and materials.

8-5 PROGRESS PAYMENT PROCEDURES

No Progress Payment will be made when, in the judgment of the Agency, the Work is not proceeding in accordance with the provisions of the Contract or when the total work done since the last Progress Payment amounts to less than one thousand dollars (\$1,000). Unless otherwise agreed to at the preconstruction meeting or identified in the Special Provisions, on the 20th of each month the Contractor shall submit in writing for Agency review an estimate of the total amount and value of work done, including that done under approved Change Orders, and the acceptable materials furnished and incorporated in the work through the 20th day of the month. The Bid Form or Schedule of Values shall be used to prepare a Progress Payment request for the items, or portions of items, of the Work completed during the monthly progress period. After deducting all previous payments, the retention as described in Section 8-7, "Retention", in this Section of these Specifications, and other withholdings as specified in the Contract from the estimated total value, the Agency will pay the Contractor the balance.

The payment of a Progress Payment or the acceptance thereof by the Contractor does not constitute acceptance of any portion of the Work, and does not reduce the Contractor's liability to replace unsatisfactory work, material, or equipment. An inadvertence or error in an approved Progress Payment request will not release the Contractor or the Contractor's surety from damages arising from the work covered by the approved payment request or from enforcement of every provision of the Contract. The Agency has the right to correct any error made in any Progress Payment.

8-6 INSPECTION AND PROGRESS PAYMENTS NOT A WAIVER OF CONTRACT PROVISIONS

No inspection, order, measurement, approval modification, payment, acceptance of work or material (including, but not limited to, acceptance of the entire Work), time extension, or possession of the Work or any part thereof shall be a waiver of any of the terms and conditions of the Contract, the powers reserved by the Agency, or any right of the Agency to damages or to reject the Work in whole or part. No breach of this Contract shall be construed a waiver of any other or subsequent breach. All remedies

provided in the Contract shall be cumulative and shall be in addition to all other rights and remedies that may exist at law or in equity.

8-7 RETENTION

Retention to Ensure Performance

As described in Section 8-11, "Final Estimate and Payment", in this Section of these Specifications, the Agency will retain ten percent (10%) of each Progress Payment to ensure performance under the Contract until thirty-five (35) days after filing of the Notice of Completion.

Non-Compliance

The Agency may also retain portions of a Progress or Final Payment for Contract non-compliance in an amount deemed appropriate by the Agency.

Substitution of Securities

At the request and expense of the Contractor, in accordance with California Public Contract Code Section 22300, in lieu of the Agency withholding the ten percent (10%) retention defined in Section 8-7.01, "Retention to Ensure Performance", in this Section of these Specifications, the Contractor may: 1) substitute a deposit of securities at least equivalent to the retention to be paid, or 2) request the Agency pay retention directly to an escrow agent.

The Contractor and Agency shall enter into an escrow agreement in the form set forth in Public Contract Code Section 22300 as modified by the Agency. All forms or correspondence pertaining to Security Deposit in Lieu of Withhold shall be addressed to:

City of Colusa, City Engineer

425 Webster Street

Colusa, CA 95932

8-8 WITHHOLDINGS/DENIAL OF PROGRESS PAYMENT REQUEST

The Agency may deny a Progress Payment request and/or withhold money from any Progress Payment to:

118. Cover any unpaid claims filed pursuant to Civil Code Sections 3179 et seq.;
119. Protect the Agency's interest; and/or
120. Pay any fines levied against the Work by the Agency or other entities. The Agency may also deny a Progress Payment request and/or withhold money, or modify any previous Progress Payment, as necessary to protect the Agency from loss due to or affecting enforcement of:
121. Defective work not remedied.
122. Stop notices filed.
123. Failure of the Contractor to make payments properly to Subcontractors for labor, materials, or equipment.
124. Evidence that the Work cannot be completed for the unpaid balance of the Contract sum.
125. Evidence that the Work will not be completed within the Contract time.
126. Damage to the Agency or another contractor.

127. Failure to carry out the Work in accordance with the Contract.
128. Any violation or non-compliance with Contractor's legal responsibilities (see Section 6, "Legal Relations and Responsibilities", of these Specifications), including withholds for wages adjustments in accordance with California Labor Code Section 1727 and any fines incurred by the Agency as a result of the Contractor's actions.

When, under the provisions of the Contract, the Agency charges any sum of money against the Contractor, the Agency will deduct and retain the amount of such charge from a Progress or Final Payment. If, on completion or termination of the Contract, sums due the Contractor are insufficient to pay the Agency charges against the Contractor, the Agency has the right to recover the balance from the Contractor or the Contractor's surety.

8-9 DEDUCTIONS FOR IMPERFECT WORK

For any portion of the Work retained in accordance with Section 5-19, "Right to Retain Imperfect Work", of these Specifications, the Agency will deduct from a Progress Payment a just and reasonable amount.

8-10 LIQUIDATED DAMAGES FOR DELAY

All parties to the Contract agree that time is of the essence, and that the Work shall be completed within the time stated in the Special Provisions, plus any time extensions as provided in Section 7-18, "Extension of Time", of these Specifications. The Contractor's failure to complete the Work within the time allowed will result in damages to the Agency. Because it is impracticable to determine the actual amount of damage by reason of such delay, the Contractor agrees that the sum(s) set forth in the Special Provisions is (are) a reasonable amount to be charged for liquidated damages. It is agreed that the Contractor shall pay to the Agency the sum set forth in the Special Provisions for each and every day's delay beyond the time prescribed in the Contract, and the Contractor further agrees that the Agency may deduct and retain the amount thereof from any monies due or to become due the Contractor under the Contract.

8-11 FINAL ESTIMATE AND PAYMENT

Subsequent to Field Acceptance as detailed in Section 7-21, "Final Inspection and Field Acceptance", of these Specifications, the Contractor shall provide a proposed Final Payment request, segregated as to Contract item and Contract Change Order work.

When all provisions of the Contract have been performed to the satisfaction of the Engineer, the Agency shall proceed with all reasonable diligence to determine the final quantities and final payments for all work included in the Contract. Final payments and quantities shall include all work performed at contract unit bid prices, contract lump sum bid prices, approved Contract Change Orders, any work performed under Force Account, and a reasonable estimate of value for any disputed extra work items. All Progress Payments shall be subject to correction in the Final Payment.

Within fifteen (15) Calendar Days after the proposed Final Payment request is returned to the Contractor, the Contractor shall submit to the Agency a written approval of said request or a written statement of exceptions. The Contractor's statement of exceptions shall be in sufficient detail for the Agency to ascertain the basis and amount of the exceptions; failure to provide the detail shall be sufficient cause for denial of the exceptions. Any claim of the Contractor or the Contractor's Subcontractors or suppliers with respect to the performance or breach of the Contract or any alterations thereof (except for payment of the balance of the Contract price as set forth in the Final Payment request) not specifically set forth in the statement of exceptions, is waived by the Contractor. If the Contractor fails to file a statement of exceptions within the time allowed, the Agency will infer acceptance of the final Progress Payment request as submitted to the Contractor.

If no liens or claims have been filed against the Contractor after thirty-five (35) days from the filing of Notice of Completion, the Agency will approve for payment the entire sum due, including the release of any retention.

8-12 FINAL PAYMENT TO TERMINATE LIABILITY OF AGENCY

Payment of the final amount due under the Contract shall release the Agency, and the Agency's officers, officials, agents, employees, members, volunteers, affiliates, and their duly authorized representatives from all claims or liability on account of work performed under the Contract. Tender of this payment shall constitute denial by the Agency of any unresolved claim of the Contractor not specifically excepted in writing by the Contractor. The Contractor's acceptance of the Final Payment shall release the Agency and the Agency's officers, officials, agents, employees, members, volunteers, affiliates, and their duly authorized representatives from all claims or liability on account of work performed under the Contract or any alterations thereof, except unresolved items set forth in the statement of exceptions.

8-13 DISPUTED PAYMENTS

The Agency will decide disputes regarding payments under the Contract according to the procedures set forth in Section 9, "Changes and Claims", of these Specifications. The decision of the Agency will be final.

SECTION 9.

CHANGES AND CLAIMS

9-1 AUTHORITY FOR CHANGES

The Agency reserves the right to order corrections, alterations, additions, modifications, deletions or other changes as required for the proper completion of the Work. The order may be made prior to the final acceptance of the Contract without voiding the Contract, without notice to the Contractor's sureties, and in accordance with the provisions of Section 9-2, "Ordering of Changes", in this Section of these Specifications.

The Contractor shall not perform corrections, alterations, additions, modifications, deletions, or other changes to the Work without a written order from the Agency, in accordance with Section 9-2, "Ordering of Changes", in this Section of these Specifications.

Payment for changed or extra work will not be made without the Agency's written authorization,

9-2 ORDERING OF CHANGES

The Engineer may order a change, in writing, during the course of the Work, and the Contractor shall comply with the order. Changes to the Work shall in no way affect, invalidate, or make void the Contract or any part thereof, except that which is necessarily affected by such changes and is clearly the evident intention of the parties to the Contract.

Changes to the Work may be initiated as described in Section 4-5, "Field Instructions or Other Written Directives", of these Specifications, Changes that require an adjustment to the total Contract Price or the Contract Time will be formalized in a Contract Change Order, in accordance with Section 9-14, "Contract Change Order (CCO)", in this Section of these Specifications. Failure of the Agency and Contractor to agree to terms of any order for change shall not relieve the Contractor of his obligation to complete all work specified in the order.

9-3 CONSTRUCTION INCENTIVE CHANGE PROPOSAL (CICP)

The provisions of this section (CICP) shall only apply when allowed in the Special Provisions.

General

The Construction Incentive Change Proposal (CICP) Program provides a program for the Contractor to use his expertise to improve Contract performance to create an overall reduction in the Total Contract Price. Proposing to delete work is not a CICP. Deleted work is addressed in Section 4-8, "Deleted Items", in these Specifications. The CICP Program shall not apply to Agency contracts of less than two hundred thousand dollars (\$200,000). The Contractor and Subcontractors may participate in the CICP Program. Participation of Subcontractors shall be through the Contractor. The Contractor and Subcontractor must agree upon the sharing arrangement; written evidence of such agreement must be submitted with the CICP.

While a CICP is being considered or processed, the Contractor shall proceed with the Work as scheduled.

Description

A CICP is a formally written proposal for a Contract Change Order. A CICP must be initiated, developed, and identified as such by the Contractor or his Subcontractor. A CICP must result in a net capital cost

reduction while causing no increase in the total life cycle cost of the project and shall comply with the following conditions:

Required function, reliability, and safety of the project will be maintained without detracting from the life expectancy or increasing maintenance requirements.

The proposed change shall not cause undue interruption of the Work, nor shall it extend the Contract Time.

The proposed change shall comply with all applicable permits, regulations, and code requirements, and any other requirements as set forth in the Contract. The proposed change shall not involve payment of royalties by the Agency to the Contractor.

Submittal

The Contractor shall submit a brief description of the proposed CICP prior to preparing the detailed submittal as outlined below.

A CICP submittal must contain pertinent information in supporting documents for Agency evaluation. As a minimum, the following information shall be submitted:

Name of Individuals associated with the development and preparation of the CICP.

A detailed description and duly signed plans and specifications showing work as presently designed and the proposed changes.

A clear identification of all advantages and disadvantages for each proposed change.

A detailed procedure and schedule for implementing the proposed change. This detailed procedure and schedule shall include all necessary Contract amendments. Also indicated must be the latest date that the CICP can be approved for implementation without exceeding the Contract time.

A summary of estimated costs, including the following:

Project construction costs before and after the CICP. This shall be a detailed estimate identifying the following items for each trade involved in the CICP:

Quantities of material and equipment

Unit prices of materials and equipment

Labor hours and rates for installation

Subcontractor and prime Contractor mark ups

Operation and maintenance costs before and after the CICP

Cost for implementing the CICP not included elsewhere

Contractor's share of the savings based on the sharing provision in Section 9-3.05, "Sharing Provisions and Formula", in this Section of these Specifications.

Other data as required by local permits and regulations and code requirements as set forth in the Contract.

Time required for execution of the proposed change.

To the extent indicated herein, the Contractor may restrict the Agency's use of any CICP or the supporting data submitted pursuant to this program. Suggested wording for inclusion in CICPs is as follows:

"This data furnished pursuant to the construction incentive clause of the Contract shall not be disclosed or duplicated in whole or in part beyond what is necessary to accomplish the review. This restriction does not limit the Agency's right to use the information if it is available from any source without limitations. The Agency has the right to duplicate, use and disclose any information if the CICP is accepted."

The Agency may modify, accept, or reject the CICP. However, if the CICP is modified or not acted upon within the time allotted in the proposal, the Agency will not be liable for the Contractor's cost of developing the CICP if it is withdrawn or rejected.

Acceptance

The Agency will use the processing procedure specified for Change Orders in Section 9-14, "Contract Change Order (CCO)", in this Section of these Specifications, if a CICP is accepted.

The Agency's written approval of the CICP is required. If the CICP is rejected, the Contractor shall not appeal the decision.

Sharing Provisions and Formula

Upon acceptance of the CICP, the Contractor will receive fifty percent (50%) of the Net Capital Savings based on the following formula:

Net Capital Savings = Contract Cost Prior to CICP - (Revised Contract Cost after CICP + CICP Development Cost + CICP Implementation Cost)

The Contractor's development cost is limited to that directly associated with the preparation of the CICP package. Development costs will be reimbursed after approval. However, the Agency will reject costs that cannot be satisfactorily substantiated.

The CICP implementation costs include, when appropriate, engineering costs for reviewing and redesigning the changes. However, Agency costs for processing the CICP are excluded.

9-4 CHANGES TO THE CONTRACT

If directed by the Engineer, within fourteen (14) Calendar Days of issuance of an order for a change, the Contractor shall provide a cost and time proposal prepared in accordance with the requirements of Sections 9-8, "Payment for Changes", and 9-12, "Time Extensions for Changes", in this Section of these Specifications. The Contractor's proposal shall indicate the amount to be added or deducted from the Total Contract Price, supported by complete details of all Contractor, Subcontractor, vendor or supplier costs per Section 9-6, "Cost and Pricing Data", in this Section of these Specifications.

If the Contractor does not submit a proposal within fourteen (14) Calendar Days, and unless the Engineer is otherwise notified within fourteen (14) Calendar Days of a potential cost impact, the Contractor agrees to perform the work described in the order for change with no additional compensation. If the order for change is issued on a force account basis, the Contractor must immediately begin keeping records in accordance with Section 9-8.03, "Force Account", in this Section of these Specifications.

9-5 PROSECUTION OF CHANGES TO THE CONTRACT

The Contractor shall comply with and prosecute all portions of the order for change with the same diligence and manner as if the changes were originally included in the Contract, except as otherwise provided in the order.

If agreement is reached regarding payment, but not a time adjustment, the Agency shall have the right to direct the Contractor to proceed with the change at the agreed price. The impact of the changed work on the project schedule will be considered by the Agency in accordance with Section 9-12, "Time Extensions for Changes", in this Section of these Specifications.

When the Agency and Contractor cannot agree on the credit for deleted work, the Agency's estimate will be deducted from the Total Contract Price, unless the Contractor presents proof prior to the Final Payment that the Agency's estimate is in error.

9-6 COST AND PRICING DATA

Cost and pricing data submitted by the Contractor shall be true, complete, accurate, and current. The Agency may require a formal certification to verify Contractor-submitted cost and pricing data. The Agency shall have access to the records supporting such cost and pricing data in accordance with the following Section (Section 9-7, "Access to Records"),

9-7 ACCESS TO RECORDS

Upon reasonable notice and during normal business hours, the Agency shall have access to the Contractor's and Subcontractors' records for the purpose of verifying and evaluating the accuracy of cost and pricing data submitted by the Contractor. "Records" as used in this Section shall include, but not be limited to: original estimates, subcontract agreements, purchase orders, books, documents, accounting records, papers, project correspondence, project files, and scheduling information necessary to determine the direct and indirect costs, Job site, area and home office overhead, delay and impact costs. Records shall include the original Bid and all documents related to the Bid and its preparation, the as-planned construction schedule and all related documents. Such access shall include the right to examine and audit such records and make excerpts, transcriptions, and photocopies at the Agency's cost.

9-8 PAYMENT FOR CHANGES

The method of payment agreed upon by the Contractor and the Agency, or selected by the Agency in the absence of agreement, shall be set forth in the order for change. The three methods of payment are as follows:

Lump Sum Price

The Contractor shall submit a lump sum price proposal. The proposal shall include an estimate of labor, material, equipment, Subcontractor, and material supplier costs. The proposal shall include labor surcharges according to State Specifications Section 9-1.03.

Unit Prices

If payment for Contract work is based on unit prices, payment for changed work will be made based on actual quantities of work done at the unit prices contained in the Contract or unit prices otherwise agreed upon by the Agency and Contractor if none are contained in the Contract. Payment for changed work based on Contract or agreed upon unit prices includes the full cost of the item of work including profit and overhead; and no additional payment or adjustment will be allowed. If the final quantity of any item of work required under the Contract varies from the Engineer's Estimate by twenty-five percent (25%) or more, compensation will be adjusted in accordance with State Specification Section 4-1.03B, "Increased or Decreased Quantities".

Force Account

When extra work is to be paid for on a force account basis, the labor, materials and equipment used in the performance of that work shall be subject to the approval of the Engineer and compensation will be determined according to State Specifications Section 9-1.03.

9-9 MARKUPS FOR CHANGED WORK

This section deleted and shall reference State Specifications Section 9-1.03.

9-10 COMPENSABLE UNAVOIDABLE DELAYS

Payments will be made as follows for compensable unavoidable delays, as defined in Section 7-12.02, "Unavoidable Delays", in these Specifications.

Construction Equipment

Compensation will be paid for construction equipment idle as a result of a compensable unavoidable delay to the extent costs are incurred. The prices paid for equipment will be those in the current edition of the Caltrans publication, "Labor Surcharge and Equipment Rental Rates", with the following modifications:

129. The right-of-way delay factor for each classification of equipment will be applied to the rental rate.
130. Compensation will be provided for the actual time of the delay, but not more than eight (8) hours per day.

Compensation will be provided for each day or portion of a day, excluding Saturdays, Sundays and holidays, for the duration of the delay.

Jobsite Indirect Costs

Indirect costs shall be limited to the following:

131. Actual payroll costs for field office staff incurred as a result of the delay, including management, supervision, safety, estimating, engineering, drafting, clerical, secretarial and accounting. A twenty-six percent (26%) surcharge for taxes, insurance, and all other payments made to or on the behalf of the employee may be added to the payroll costs.
132. Actual cost for third-party services provided for the field office, such as management, supervision, safety, estimating, engineering, drafting, clerical, secretarial, and accounting utilized in lieu of employees.
133. Applicable field office expenses for rent and utilities that are substantiated by invoices. Compensation for on-site plant, incidentals, and facilities for non-field office personnel including branch office and home office personnel will not be provided. Compensation for these items and other incidentals is included in the following Section (Section 9-10.03, "Markup for Compensable Unavoidable Delays").

Markup for Compensable Unavoidable Delays

Except for compensable unavoidable delays associated with archeological and cultural resources as described in Section 10-12, "Archeological and Cultural Resources", of these Specifications and right-of-way delays, fifteen percent (15%) shall be added to job-site indirect costs for onsite plant, incidentals, overhead, home and branch office costs, bonds and profit. The Contractor shall determine the distribution of the markup among the Contractor, Subcontractors, and suppliers.

Duplicated Overhead Costs

If the Contractor is compensated for delays in accordance with this Section, and the delay is attributable to direct cost changes to which markups were added, equitable adjustments shall be made to eliminate the duplication of compensation for indirect and overhead costs and profit.

9-11 LIMITATIONS ON PAYMENTS FOR CHANGED WORK

The Agency will not pay the Contractor for costs in excess of prevailing market values, unless the Contractor can establish, to the satisfaction of the Agency, that the Contractor has investigated all possible means of providing the work and that the excess costs could not be avoided. The Agency will be the sole judge of the necessity of incurring costs in excess of market value and whether the excess costs are directly required for performance of changed work. The Agency's determination will be final.

9-12 TIME EXTENSIONS FOR CHANGES

The Contractor is entitled only to adjustment in Contract Time if completion of the entire Work is extended due to the change impacting the controlling item of work. Each proposal submitted by the Contractor in accordance with Section 9-4, "Changes to the Contract", in this Section of these Specifications shall state the amount of extra time the Contractor believes the change added to the overall project schedule. Failure to request a time extension, including the required time impact analysis, within the time allowed constitutes a waiver of the Contractor's right to subsequently claim an adjustment in Contract Time.

9-13 EFFECT ON SURETIES OF CHANGES TO THE WORK

No alterations, time extensions, extra or additional work or other changes authorized by these conditions or any part of the Contract shall affect the sureties' obligations under the Contract.

9-14 CONTRACT CHANGE ORDER (CCO)

The Agency will issue a Contract Change Order (CCO) for approval if a change to the Total Contract Price or Contract Time is necessary. The Contractor shall not be entitled to any adjustments in either Total Contract Price or Contract Time for changes performed before receipt of a Contract Change Order approved by the City Engineer. A Contract Change Order is generally comprised of one or more Field Instructions or other written directives, and contains a summary of each change and changes to the Total Contract Price and Contract Time.

9-15 ACCEPTANCE OF ORDERS FOR CHANGES

The Contractor's written agreement of a Contract Change Order, Field Instruction, or other written directive will constitute his final and binding agreement to the provisions of the Contract Change Order, Field Instruction, or other written directive, and a waiver of all claims in connection therewith, whether direct or consequential in nature, including those of any Subcontractors or suppliers. If the Contractor disagrees with any Contract Change Order, Field Instruction, or other written directive, the Contractor may submit a notice of potential claim to the Agency in accordance with Section 9-17, "Notice of Potential Claim", in this Section of these Specifications. Disagreement with the provisions of a Change Order, Field Instruction, or other written directive will not relieve the Contractor of the Contractor's obligations under the Contract.

9-16 DISPUTE REGARDING CONTRACT REQUIREMENTS

If the Contractor and Agency fail to agree whether or not any work or other matter is within the scope of the Contract, the Contractor shall nevertheless immediately perform such work upon receipt of a written Field Instruction or other written directive. Within fourteen (14) Calendar Days after receipt of the Field Instruction or other written directive, the Contractor may submit a written protest detailing the Contract requirements exceeded and the approximate cost and/or time change. Failure to submit a protest within the specified period constitutes a waiver of the Contractor's rights to adjustments in the Total Contract Price or Contract Time for the disputed Contract requirement.

The Contractor shall not stop performing the Work pending resolution of a dispute, unless ordered in writing by the Agency.

If the Agency agrees with the Contractor's written protest, the Total Contract Price and/or Contract Time will be adjusted through a Contract Change Order. Protests and claims denied by the Agency will be so stated in writing.

9-17 NOTICE OF POTENTIAL CLAIM

The Contractor shall not be entitled to payment of any additional compensation for any cause, including any disagreement, protest, or change, any act or failure to act by the Agency, or the happening of any event, thing or occurrence, unless the Contractor has given the Agency due advance written notice of potential claim as hereinafter specified. The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation and/or time will or may be due, the nature of the costs and/or time involved, and, insofar as possible, the amount of the potential claim.

Except as required below, the Contractor shall promptly provide written notification to the Agency upon discovery of concealed or unknown conditions or any disagreement, protest, situation, event, or occurrence that may result in a claim. This notice shall be submitted no more than two (2) Working Days after the discovery or occurrence of any event that may be the basis for a claim for additional compensation; failure to do so will waive the claim.

9-18 SUBMISSION OF CLAIMS

Claims Less Than \$375,000

Claims for three hundred seventy-five thousand dollars (\$375,000) or less shall be in accordance with Section 20104 of the Public Contract Code.

Claims Greater Than \$375,000

For claims greater than three hundred seventy-five thousand dollars (\$375,000), the Contractor shall furnish claim documentation as herein specified.

Contractor shall submit three (3) certified copies of all claim documentation. All claim documentation shall be complete when submitted. The evaluation of the Contractor's claim will be based on Agency's records and the claim documentation submitted by Contractor.

Claim documentation shall conform to generally accepted auditing standards and shall be in the following format:

Introduction and background

Issues

Index of issues

For each issue:

Background

Chronology

Contractor's position (reason for Agency's potential liability)

Supporting documentation of merit

Supporting documentation of damages

Critical path method schedules, as-planned versus as-built, and delay analysis

Productivity and damages exhibits

Summary of issues and damages

Supporting documentation of merit for each issue shall be cited by reference, photocopies, or explained. Supporting documentation may include, but not be limited to, general conditions, technical specifications, drawings, correspondence, conference notes, shop drawing logs, survey books, inspection reports,

delivery schedules, test reports, daily reports, subcontracts, fragmentary critical path method schedules, photographs, technical reports, requests for information, field instructions, and other related records.

Supporting documentation of damages for each issue shall be cited, photocopied, or explained. Supporting documentation may include, but not be limited to, certified detailed labor, materials, equipment, and construction equipment and services costs; purchase orders; invoices; project as-planned and as-built costs; subcontractor payment releases; quantity reports; other related records; general ledger and any other accounting materials.

Each copy of claim documentation shall include the following certification, signed in the same manner as the Contract was signed:

"I, _____, being the *(must be an officer)* of *(general contractor)*, declare under penalty of perjury under the laws of the State of California, and do personally certify and attest that; I have thoroughly reviewed the attached claim for additional compensation and/or extension of time, and know its contents, and said claim is made in good faith; the supporting data is truthful and accurate; that the amount requested accurately reflects the Contract adjustment for which the Contractor believes the Agency is liable; and, further, that I am familiar with California Penal Code Section 72 and California Government Code Section 12650, et seq., pertaining to false claims, and further know and understand that submission or certification of a false claim may lead to fines, imprisonment and/or other severe legal consequences.

(Signature of officer) _____ *(Date)* "

If the Contractor is unable to support any part of a claim and it is determined that such Inability is attributable to falsity of such certification or misrepresentation of fact or fraud by the Contractor, the Contractor shall be liable to the Agency for three (3) times the amount of damages which the Agency sustains, plus the cost of civil action, and may be liable to the Agency for a civil penalty of up to ten thousand dollars (\$10,000) for each false claim.

9-19 ENGINEER'S DECISION

The Engineer may be requested to consider a dispute or claim if the Agency and Contractor representatives reach an impasse. A request for an Engineer's Decision shall be made by the Contractor, in writing, within fourteen (14) days of the date of impasse. In requesting an Engineer's Decision, each party shall provide a detailed description of their position and state the objections to the position of the other party. Evidence, records, and supporting information shall be included. Copies of all correspondence and information shall be provided to both parties.

The Engineer will review the facts of the dispute and may request additional information, evidence, or testimony. The Engineer will render a fair, impartial decision based on the Contract, and the evidence submitted by the Agency and Contractor representatives.

If provided for in the Special Provisions, the Engineer may decline to consider a dispute and refer the matter to a Dispute Review Board.

9-20 ALTERNATIVE DISPUTE RESOLUTION

After all remedies and provisions of the Contract are exhausted, any dispute related to the Work or Contract may be resolved by Mediation if the Contractor and the Agency agree in writing. The Contractor shall submit a written request for Mediation no later than thirty (30) days after the Agency issues the final written decision.

Said Mediation is voluntary, non-binding, and intended to provide an opportunity for the parties to evaluate each other's cases and arrive at a mutually agreeable solution. These provisions relating to voluntary Mediation shall not be construed or interpreted as mandatory arbitration.

Initiation of Mediation

Any party to a dispute or claim may initiate Mediation by notifying the other party or parties in writing.

Request for Mediation

A Request for Mediation shall contain a brief statement of the nature of the dispute or claim, and the names, addresses, and phone numbers of all parties to the dispute or claim, and those who will represent them, if any, in the Mediation.

Selection of Mediator

Upon receipt of a Request for Mediation, within thirty (30) days, the parties will meet and confer to select an appropriate Mediator agreeable to all parties. If the parties cannot agree on a Mediator, they hereby agree to accept a Mediator appointed by a recognized association such as the American Arbitration Association.

Qualifications of a Mediator

Any Mediator selected shall have expertise in the area of the dispute and be knowledgeable in the Mediation process. No person shall serve as a Mediator in any dispute in which that person has any financial or personal interest in the result of the Mediation. Before accepting an appointment, the prospective Mediator shall disclose any circumstances likely to create a presumption of bias or prevent a prompt meeting with the parties. Upon receipt of such information, the parties shall meet and confer and decide whether to select another Mediator.

Vacancies

If any Mediator shall become unwilling or unable to serve, another Mediator shall be selected unless the parties agree otherwise.

Representation

Any party may be represented by persons of their choice, who shall have full authority to negotiate. The names and addresses of such persons shall be communicated in writing to all parties and to the Mediator.

Time and Place of Mediation

The Mediator shall set the time of each Mediation session. The Mediation shall be held at any convenient location agreeable to the Mediator and the parties, as the Mediator shall determine. All reasonable efforts will be made by the parties and the Mediator to schedule the first session within thirty (30) days after selection of the Mediator.

Identification of Matters in Dispute

At least ten (10) days before the first scheduled Mediation session, each party shall provide the Mediator with a brief memorandum setting forth its position with regard to the issues that need to be resolved. Such memoranda shall be mutually exchanged by the parties. At the first session, the parties will be expected to produce all information reasonably required for the Mediator to understand the issue presented. The Mediator may require each party to supplement such information.

Authority of Mediator

The Mediator does not have authority to impose a settlement upon the parties but will attempt to help the parties reach a satisfactory resolution of their dispute. The Mediator is authorized to conduct joint and separate meetings with the parties and to make oral and written recommendations for settlement. Whenever necessary, the Mediator may also obtain expert advice concerning technical aspects of the dispute, provided the parties agree and assume the expenses of obtaining such advice. Arrangements for obtaining such advice shall be made by the Mediator or the parties, as the Mediator shall determine. The Mediator is authorized to end the Mediation whenever, in the Mediator's judgment, further efforts at Mediation would not contribute to a resolution of the dispute between the parties.

Privacy

Mediation sessions are private. The parties and their representatives may attend Mediation sessions. Other persons may attend only with the permission of the parties and with the consent of the Mediator.

Confidentiality

Confidential information disclosed to a Mediator by the parties or by witnesses in the course of the Mediation shall not be divulged by the Mediator. All records, reports, or other documents received by a Mediator while serving as Mediator shall be confidential. The Mediator shall not be compelled to divulge such records or to testify in regard to the Mediation in any adversary proceeding or judicial forum. The parties shall maintain the confidentiality of the Mediation and shall not rely on, or introduce as evidence in any arbitration, judicial or other proceedings or any of the following: (a) Views expressed or suggestions made by the other party with respect to a possible settlement of the dispute; (b) Statements made by the other party in the course of the Mediation proceedings; (c) Proposals made or views expressed by the Mediator; or (d) Whether the other party had or had not indicated willingness to accept a proposal for settlement made by the Mediator.

No Stenographic Record

There shall be no stenographic record of the Mediation.

Termination of Mediation

The Mediation shall be terminated (a) by the execution of a settlement agreement by the parties; (b) by a written declaration of the Mediator to the effect that further efforts at Mediation are no longer worthwhile; or (c) by a written declaration of a party or parties to the effect that the Mediation proceedings are terminated.

Exclusion of Liability

No Mediator shall be a necessary party in judicial proceedings related to the Mediation; No Mediator shall be liable to any party for any act or omission in connection with any Mediation conducted hereunder.

Interpretation and Application of These Mediation Provisions

The Mediator shall interpret and apply these Mediation provisions insofar as they relate to the Mediator's duties and responsibility.

Expenses

The expenses of witnesses for either side shall be paid by the party producing the witnesses. All other expenses of the Mediation, including required traveling and other expenses of the Mediator, the expenses of any witness called by the Mediator, and the cost of any proofs or expert advice produced at the request of the Mediator, shall be split equally between the parties.

9-21 NO ALTERNATIVE CLAIMS PROCEDURE

Nothing in the Contract constitutes an agreement for an alternative claim procedure under the provisions of Government Code Section 930.2, nor relieves the Contractor of the requirements of Government Code, Part 3, Chapters 1 and 2 and Title 1, Division 3.6, Chapters 1, 2, 3, and 4.

9-22 ASSIGNMENT OF CLAIMS

The Contractor shall not assign any portion of the moneys due the Contractor without written Agency approval. No person other than the party signing the Contract has any claim under the Contract, except as provided in the Contract.

SECTION 10.

ENVIRONMENTAL CONTROLS AT WORK SITE

10-1 DUST CONTROL

Dust control shall conform to Section 17, "Dust Control", of these Specifications.

10-2 AIR POLLUTION CONTROL

The Contractor shall comply with all Federal, State, Agency, and local air pollution control rules, regulations, ordinances, and statutes that apply to the Work. The Contractor shall also comply with the requirements of any permits issued to the Agency as noted in the Special Provisions.

10-3 BURNING

Unless otherwise provided in the Special Provisions or approved by the Agency in writing, material shall not be burned on site.

10-4 EROSION, SEDIMENT, AND WATER POLLUTION CONTROL

General

The Federal Clean Water Act requires construction sites to prevent pollutants entering storm drain systems. Storm drain systems include both constructed and natural facilities, including streams, waterways, and other bodies of water. The Contractor shall protect the local storm drain system from pollution, and shall conduct and schedule operations to avoid erosion and sediments. Where erosion may cause water pollution due to the nature of the material or the season, the Contractor's operations shall be scheduled so temporary or permanent erosion control features are installed concurrently with, or immediately following, grading operations.

The Contractor is responsible for organizing and scheduling the Work to prevent, control, and/or abate water pollution. In order to provide effective and continuous control of water pollution, it may be necessary for the Contractor to perform the Work in small or multiple units, on an out-of-phase schedule, and/or with modified construction procedures. The Contractor shall coordinate water pollution control work with all other Contract work.

Agency Requirements

Unless specified otherwise in the Contract, all construction projects in the City of Colusa must have a water pollution control program as follows:

Construction projects disturbing more than the threshold number of acres as defined in the State General Construction Permit [currently five (5) acres] must have a Stormwater Pollution Prevention Plan (SWPPP) (See Section 10-4.04 of these Specifications.)

Construction involving the grading, filling, excavating, storage, or disposal of three hundred fifty (350) cubic yards or more of soil, or the clearing or grubbing of one (1) acre or more must have an Erosion and Sediment Control Plan (ESCP) (See Section 10-4.05 of these Specifications.)

All other construction must comply with the Minimum Agency Requirements (See Section 10-4.06 of these Specifications.).

The minimum program required will be specified in the Special Provisions or by the Agency. Contractor may opt to comply with a more restrictive program than that which is required by the Special Provisions

or the Agency. The Contractor must then conform to all requirements of both the minimum applicable program and the more restrictive program. (For example, if an ESCP is required but the Contractor chooses to prepare a SWPPP, the SWPPP must be prepared by a civil engineer as required by the erosion control ordinance).

Before starting the Work, the Contractor shall develop a program for the control of water pollution during the Work. The program shall indicate how the Contractor proposes to effectively control water pollution during the Work. The program shall also describe how the Contractor plans to monitor the effectiveness of the program. The program shall show erosion control work and all water pollution control measures the Contractor plans to implement in connection with the Work. The Contractor shall not perform any clearing, grubbing or earthwork on the project, other than that specifically authorized in writing by the Agency, without a water pollution control program. When requested by the Agency, the Contractor shall submit the program for review.

The Agency is not liable to the Contractor neither for any portion of the water pollution control program or subsequent revisions nor for any delays to the Work due to the Contractor's failure to prepare and implement a program nor for any delays as a result of Agency review.

Regulations, Ordinances, Permits, and Specifications

The Contractor is responsible for compliance with all Federal, State, Agency and local permits, rules, regulations, ordinances, statutes, and Agency directions that apply to erosion, sediment, and water pollution control. The Contractor, at a minimum, shall comply with the most stringent regulation, ordinance, permit, or specification of the following applicable to the Work:

This Section or the Special Provisions

The City of Colusa Design Standards, Section 11 – Erosion and Sediment Control.

State of California Construction Activities Storm Water General Permit

Specific or general National Pollution Discharge Elimination System (NPDES) or other permits that cover the Work or are specific to the area of the Work

Stormwater Pollution Prevention Plan

Construction projects which disturb more than the threshold number of acres, must obtain coverage under the State Water Resources Control Board (SWRCB) General Storm Water Permit to Discharge Storm Water Associated with Construction Activity (General Permit). The General Permit is issued by the SWRCB and is enforced by the Agency and the Central Valley Regional Water Quality Control Board (Regional Board). Failure to obtain General Permit coverage or to comply with the requirements of the General Permit could result in significant daily fines. General Permit coverage is obtained by certifying and filing a Notice of Intent (N01) with the Regional Board. The owner of the project will be responsible for filing the N01 unless specified otherwise in the Special Provisions. The General Permit also requires inspection of erosion and sediment control measures before, during, and after storm events.

The SWPPP shall be prepared in accordance with the General Permit or other permit specified in the Special Provisions, regardless of whether or not the Work is subject to said permit. The SWPPP shall be prepared by an individual knowledgeable about storm water pollution prevention methods and requirements, and shall be signed by the preparer of the SWPPP. The SWPPP shall be implemented by the Contractor before Work commences. The

Contractor may not be allowed to mobilize until the plan is accepted. The SWPPP shall be kept onsite at all times, updated for the various phases of the project, and made immediately available for Agency and Regional Board Inspectors upon request. Updates shall be submitted to the Agency immediately for review. At a minimum, the SWPPP shall include:

Site Drawing (to scale)

City of Colusa: Construction Specifications

Indicate Best Management Practices (BMP's) locations and types.

Indicate location of soil stockpiles and solid waste containers.

Delineate vehicle and equipment fueling, servicing, cleaning and storage areas.

Designate material storage areas.

Show grading limits.

Indicate site drainage during execution of the Work.

Identify provisions for stabilization of vehicle access to site.

Details

Provide drawings and information for BMP's and other pollution prevention measures.

Provide drawings for secondary containment.

Narrative

Indicate chemicals, potential pollutants and hazardous materials to be used and methods for safekeeping.

Describe de-watering operations.

Describe methods for spill prevention and control.

Describe secondary containment.

Describe handling and disposal of solid waste.

Describe method and equipment for treatment and disposal of de-watering discharge.

Describe storage and dispensing of fuel and lubricants.

Describe cleanout and disposal of ready mix concrete.

Describe sanitation provisions.

Describe method to ensure effectiveness of BMP's.

Monitoring procedures (including forms and schedules)

Erosion and Sediment Control Plan

Construction projects involving the grading, filling, excavating, storage, or disposal of three hundred fifty (350) cubic yards or more of soil, or the clearing or grubbing of one (1) acre or more are required to comply with the provisions of the Agency Grading and Erosion Control Ordinance.

An Erosion and Sediment Control Plan (ESCP) shall be prepared by a civil engineer. When requested by the Agency, the ESCP shall be reviewed by the Agency before work commences. Unless otherwise approved by the Agency, the Contractor will not be allowed to mobilize until the plan is prepared. If the Contractor's methods fail to prevent erosion or siltation, the Contractor shall revise and adjust the control measures to provide effective control, and shall be responsible for any damage resulting from erosion or siltation originating on the Work site and any other site the Contractor controls or passes through.

Minimum Agency Requirements

If the Work does not fall under Sections 10-4.04 or 10-4.05 of these Specifications, the Contractor, prior to commencing work, shall prepare a water pollution control program detailing the following:

Location of soil stockpiles and solid waste containers

Vehicle and equipment fueling, servicing, cleaning and storage areas

City of Colusa: Construction Specifications

Material storage areas

Chemicals, potential pollutants and hazardous materials to be used and methods for safekeeping

Site drainage during execution of the Work

Stabilization of vehicle access to site

De-watering operations

Methods for spill prevention and control

Secondary containment

Handling and disposal of solid waste

Storage and dispensing of fuel and lubricants

Clean out and disposal of ready mix concrete

Sanitation provisions

Monitoring procedures

When requested by the Agency, the water pollution control program shall be submitted to the Agency for review.

Compliance

Compliance with the provisions in this Section does not relieve the Contractor of the responsibility for compliance with other Contract provisions.

The Contractor shall perform routine inspection and maintenance of BMP's. Inspections shall be done prior to, during, and after each rain event. The Contractor is solely responsible for preparing and maintaining inspection and monitoring records; and for including those records in the SWPPP or, in the case of Erosion and Sediment Control Plans, the site or project Maintenance Log, copies of which shall be available to the Agency for review upon request.

The Contractor shall immediately correct or replace any ineffective BMP. If the measures taken by the Contractor are inadequate to effectively control water pollution, the Agency may direct the Contractor to revise the operations and water pollution control program. The Agency may restrict work from being performed until the water pollution control measures are adequate and, if required, a revised water pollution control program is in place. Continued non-compliance may result in the Agency suspending the Work in accordance with Section 5-21, "Temporary Suspension or Delay of Work", of these Specifications. The Agency reserves the right to take corrective action and withhold Agency costs for corrective action from progress payments or final payment in accordance with Section 8-8, "Withholdings/Denial of Progress Payment Request", of these Specifications.

Any fines, including third-party claims, levied against the Agency as a result of Contractor's non-compliance are the Contractor's sole responsibility and will be withheld from progress payments or final payment in accordance with Section 8-8, "Withholdings/Denial of Progress Payment Request", of these Specifications.

Payment

Except as otherwise provided in the Special Provisions, full compensation for compliance with all applicable erosion and sediment control and storm water pollution and prevention requirements will be included in the prices paid for the various Contract items of work and no additional compensation will be allowed.

10-5 CONTROL OF WATER IN THE WORK

When groundwater or surface run-off water is encountered, the Contractor shall furnish, install, maintain, and operate all necessary machinery, appliances, and equipment to keep excavations and wet areas reasonably free from water. De-watering operations shall remain in effect until the Work has been completed, inspected, and approved, and all danger of flotation and other damage is eliminated. Water pumped from waterways, trenches, excavations, or low spots shall be disposed as specified in the Special Provisions or as directed by the Agency. The Contractor is not allowed to dispose of any water that contains sediment or other contaminants. The Contractor is responsible for providing filtration, settlement, or disposal facilities as required to comply with the requirements of Section 10-4, "Erosion, Sediment, and Water Pollution Control", of these Specifications.

10-6 NOISE CONTROL

The Contractor shall comply with all local noise control and noise level rules, regulations, and ordinances that apply to the Work. The Special Provisions may contain specific or additional requirements. Internal combustion engines used for any purpose on the Work must be equipped with a muffler recommended by the manufacturer.

10-7 CONTAMINATED AND HAZARDOUS MATERIALS OR ENVIRONMENTS

Contaminated or Hazardous Materials

The Contractor shall comply with all Federal, State and local rules, regulations, ordinances, and statutes that apply to the handling, storage, and disposal of contaminated and hazardous materials. All work involving material containing asbestos must be performed in accordance with California Labor Code, Sections 6501.5 through 6510 and California Code of Regulations, Title 8, Section 5208 and any other pertinent regulations.

Hazardous Environments

Existing sewers and appurtenances exposed to sewage and industrial wastes are considered contaminated with disease-causing organisms. The Contractor shall advise all personnel (including Subcontractor personnel) in contact with contaminated facilities, debris, wastewater, or similar items of the necessary precautions to avoid disease. It is the Contractor's responsibility to urge all personnel to observe a strict regimen of proper hygienic precautions, including any inoculations recommended by the local public health officer.

10-8 USE OF EXPLOSIVES

The Contractor shall not use explosives on the Work unless the Agency grants permission in writing or the use of explosives is specified in the Contract Documents, and then only under such conditions as the Agency prescribes.

10-9 SANITARY REGULATIONS

The Contractor shall comply with all Federal, State and local rules, regulations, ordinances, and statutes with respect to sanitation. The Contractor shall obey and enforce such sanitary requirements, and shall take precautions against contagious or infectious diseases.

Sanitary conveniences for the use of the workers shall be obscured from the public and constructed or installed and maintained by the Contractor. The Contractor shall strictly enforce use of such facilities.

10-10 CONFINED SPACES

Contractor Responsibilities and Qualifications

When working in a confined space, the Contractor shall comply with all confined space requirements of Title 8, General Industry Safety Orders (Cal-OSHA), Article 108, Sections 5156 through 5159.

Prior to any confined space entry, the Contractor shall submit for Agency review:

The Contractor's procedures for confined space operations.

Copies of all documents and certificates that qualify the Contractor to safely perform work in permit-required confined spaces. The Contractor shall also submit all applicable Material Safety Data Sheets (MSDS) and hazard information on chemicals, products, materials, or procedures.

Sufficient documentation and evidence that a permit-required confined space entry can be made in accordance with Article 108. Documentation shall include, but not be limited to the following:

Equipment availability, suitability, and integrity

Personnel training

Experience

Supervision

Safety

Accident experience

Permit-required confined space policy

Hot work procedures (if applicable)

Lock-out/tag-out procedures (if applicable)

The Contractor's submittal shall be made thirty (30) days prior to any confined space entry in accordance with Section 5-8, "Contractor's Submittals", of these Specifications.

The Contractor will not be allowed to make a permit-required confined space entry until the Agency has reviewed the Contractor's qualifications and proposed methods.

The Contractor shall conform to the procedures established by the Contractor's submittal during all confined space operations. Contractor shall provide all monitoring and safety equipment necessary to perform pre-entry checks of confined spaces. The Contractor shall also provide all monitoring, safety, and communications equipment required for confined space operations.

Agency Responsibilities for Permit Confined Spaces

The Contractor shall be provided with information regarding known hazards and known or potential permit spaces.

After the Agency has reviewed the Contractor's submittal to perform permit-required confined space entry work, the Contractor will be provided with the following:

Notification of the location, physical characteristics, known hazards, etc. regarding the permit-required confined space the Contractor anticipates entering.

Information regarding safety items (e.g. nearby emergency equipment), precautions, procedures, safeguards, etc. installed or implemented and that may be available to the Contractor's employees in or near the permit-required confined space.

A debriefing session will be held with the Contractor at the conclusion of the entry operation to ascertain if any hazards were encountered or created and remain.

The Agency's failure to identify a confined space does not relieve the Contractor of the responsibility for compliance with the requirements of Article 108 (Cal-OSHA) and this Section (Section 10).

Existing Sewers and Storm Drains

Because of the potential danger of solvents, gasoline, and other hazardous material in existing sewers and storm drainpipes, these areas shall be treated as permit-required confined spaces unless it has been proven, through appropriate testing, that no hazards exist or are expected to develop.

Joint Agency - Contractor Entries

Unless otherwise directed in writing by the Agency, when Agency employees work along side the Contractor in a permit-required confined space, the permit procedures for both the Agency and the Contractor shall be used. The Entry Supervisor shall coordinate the requirements of both permit procedures prior to entry.

10-11 CLEANING UP

The Contractor shall keep the site in a neat and presentable condition. The Contractor shall dispose of surplus materials, clean out all drainage ditches and structures, and repair any fences or other property damaged during the progress of the Work. When material is disposed of outside of an easement, street, or highway right-of-way, or other Agency-owned properties, the Contractor shall do so in accordance with the Contract Documents.

10-12 ARCHEOLOGICAL AND CULTURAL RESOURCES

If archeological or cultural resources are discovered during the Work, the Contractor shall cease all construction operations in the vicinity of the discovery until a qualified archeologist can assess the value of these resources and make recommendations to the State Historic Preservation Officer. Archeological and cultural resources include artifacts, large amounts of bone, shell, or flaked stone, and other evidence of human activity. If the State Historic Preservation Officer or the Agency directs that work be temporarily ceased at the location of an archeological or cultural find, the Contractor shall temporarily suspend work at the location.

If the Agency or the State Historic Preservation Officer temporarily suspends a portion of the Work for cultural purposes, any associated delays are considered unavoidable in accordance with Section 7-12.02, "Unavoidable Delays", of these Specifications.

10-13 PROTECTION OF EXISTING TREES

Special attention shall be given to protection of certain native and ornamental trees or shrubs, landmark trees, and all native oak trees in the City of Colusa. Additional requirements for specific trees may be shown on the Plans, or designated in the Special Provisions or by the Agency. No native oak trees shall be removed or disturbed unless specifically designated for removal on the Plans or by the Agency. Every reasonable effort shall be made to avoid creating conditions adverse to the tree's health. The natural ground within the dripline of protected trees shall remain as undisturbed as possible. The dripline area shall be identified on the ground by a circle with a radius measurement from the trunk of the tree to the tip of its longest limb. The limb cannot be cut back in order to change the dripline. The area within the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs within the dripline does not change the originally protected root zone. Measures required for protection of existing trees shall include, but are not limited to, the following;

134. Temporary protective barrier fencing, with a minimum height of four feet (4'-0") shall be installed continuously around the dripline perimeter of the protected trees prior to beginning the Work.
135. No signs, ropes, cables, or any other items shall be attached to a protected tree, except those cables recommended by a Certified Arborist for limb support.

136. No vehicles, construction equipment, temporary or mobile buildings, supplies, materials, or facilities shall be driven, parked, stockpiled, or located within the dripline of protected trees.
137. Unauthorized grade cuts or fills are not permitted within the dripline of protected trees. Cuts or fills necessary beyond the dripline but near the protected trees shall be contoured to drain away from the protected tree's dripline.
138. No utility line trenching will be permitted within the driplines of protected trees. If it is necessary to install underground utilities within the dripline of a protected tree, the utility line shall be either bored or drilled to avoid damaging roots. If the Agency determines boring or drilling is inappropriate, the utility line trench may be hand dug under the direct supervision of a Certified Arborist to avoid damaging roots.
139. Roots approved by a Certified Arborist to be severed or that fall within the structural section of the facility to be constructed, including building foundations or wall footings, shall be pruned cleanly and covered with moist earth as soon as possible. If, due to the construction, the roots must be unearthed for more than two (2) hours, they must be kept moist and covered with wet burlap or an approved equal until they are covered by moist earth. Supporting structural buttress roots that provide stability to the tree or keep it from toppling shall be protected in place. The Contractor shall hand-dig in the dripline of protected trees to prevent root cutting and mangling. Roots one inch (1") or greater in diameter encountered within the tree's dripline shall not be cut without the Agency's approval, and shall be kept moist, as approved by the Agency, and covered with earth within forty-eight (48) hours.
140. Where required by the Agency, a piped aeration system and/or a post and grade beam foundation shall be installed beneath that portion of the paving, foundation, or concrete slab that encroaches into the dripline of a protected tree. The piped aeration system shall be installed under the direct supervision of a Certified Arborist.
141. Only drought resistant plant species, tolerant of the natural and semi-arid environment of the native oak understory, shall be planted within the driplines of native oak trees.
142. No sprinkler systems that will irrigate or require trenching within the dripline of a native oak tree will be permitted. An above ground drip irrigation system, which allows for controlled application rates, may be installed to irrigate native or semi-arid plants within the dripline of a native oak tree.

All protected trees within the Work area that require pruning for construction clearance shall be pruned prior to commencement of construction. Native oak trees that require pruning of branches larger than two inches (2") in diameter shall be pruned by a Certified Arborist.

EXPLANATION OF TECHNICAL PROVISIONS AND USE OF CONSTRUCTION SPECIFICATIONS SECTIONS 11 - 50

The City of Colusa has used the Improvement Standards published by the County of Sacramento as the foundation of its own Improvement Standards and has hereby adopted the Technical Provisions (Sections 11 through 50) of the 2004 County of Sacramento Construction Specifications, **with the exception of the changes noted in this document, which shall supersede any and all conflicting provisions.** Any variance from the Technical Provisions as modified by these changes requires prior written approval by the City Engineer or the Public Works Administrator.

The County of Sacramento Construction Specifications, Sections 11 – 50, can be purchased from the County of Sacramento Technical Resources Division, 827 Seventh Street, Room 105, Sacramento, California or obtained via a no-fee download from the county’s website at <http://www.saccountyspecs.net/>.

The City of Colusa hereby supercedes any conflicting portions of the adopted Technical Provisions with the following:

CHANGES TO THE TECHNICAL PROVISIONS

General Changes

All references to the County or County of Sacramento shall be replaced by City of Colusa.

All references to the County Improvement Standards shall be replaced by City of Colusa Improvement Standards unless otherwise noted in this Addendum.

All references to the Water Maintenance District shall be replaced by City of Colusa Water & Sewer Department.

All references to the County Corporation Yard location shall be replaced by the City of Colusa Corporation Yard location at 12th and Main Street and City Supply Yard at 1411 Will S. Green Avenue.

Any other Sacramento or Sacramento County address or department reference not identified in this document shall be corrected as needed by contacting the City of Colusa Public Works.

Section 11 – 13

No Modifications

Section 14

Standard Drawing 4-31 shall be replaced by Standard Drawing 4-20

Section 15 – 17

No Modifications

Section 18

18-4.07: Standard Drawing 9-26A shall be replaced by Standard Drawing 9-19

18.4.07: paragraph 2 shall be deleted.

Section 19

Standard Drawing 4-31 shall be replaced by Standard Drawing 4-20

Section 20

All Standard Drawings referenced as L shall be obtained from the County of Sacramento by way of their offices or their website <http://www.saccountyspecs.net/drawings.htm>

20-5.03: Drawing 5-8 is not available in the Improvement Standards. The City Engineer shall be consulted for further direction.

20-5.05D: Standard Drawings 8-8A or 8-8B shall be replaced by Standard Drawings 8-8 Sheet 1 and Sheet 2.

20-5.05D: See Section 50-43.25 for changes to backflow prevention devices.

Section 21 – 22

No Modifications

Section 23

All Standard Drawings 4-23A,B, & C shall be replaced by Standard Drawings 4-3.

23-4: This subsection shall be deleted.

Sections 24 – 26

No Modifications

Section 27

27-12: This subsection shall be deleted.

Sections 28 – 37

No Modifications

Section 38

All sewer pipe in public rights-of-way shall be VCP.

38-4.05: Standard Drawings 7-13 shall be replaced by Standard Drawings 7-5.

38-5: Standard Drawings 7-5 shall be replaced by Standard Drawings 7-7 Sheet 1.

38-5: Standard Drawings 7-9 & 7-10 shall be replaced by Standard Drawings 7-7 Sheet 2 and Sheet 3.

Section 39

39-2.01 paragraph 2 shall be deleted.

39-2.01: County Sanitation District 1 shall be replaced with City Sewer.

39-2.01: Standard Drawings 7-1A & 7-1B shall be replaced by Standard Drawings 7-1 Sheet 2 and Sheet 3.

39-2.01: All references to Standard Drawings 7-2A through 7-2E shall be deleted.

39.2.01: Standard Drawings 7-11 and 7-11A shall be replaced by Standards Drawing 7-2 Sheet 1 and Sheet 2.

39-2.01: All references to Standard Drawings 7-11B through 7-12C shall be deleted.

City of Colusa: Construction Specifications

39-2.02: All references to Standard Drawings 7-7A shall be deleted.

39.2.02: Standard Drawings 9-9, 9-10 and 9-11 shall be replaced by Standards Drawing 9-5, 9-6 and 9-7.

39-3.02: Standard Drawings 9-8A shall be replaced by Standard Drawing 9-3.

Section 40

40-1.01: Standard Drawings 4-38 shall be replaced by Standard Drawing 4-23.

Section 41

All Standard Drawing reference with an "A", "B", "C", etc shall reference Sheet 1, 2, 3, etc. unless otherwise stated.

41-2: All water main pipe shall be ductile iron pipe.

41-5: All references to Standard Drawings 8-4B shall be deleted.

41-7: All references to Standard Drawings 8-2B shall be deleted.

41-7: All water mains shall be ductile iron pipe.

41-9: All references to Standard Drawings 8-8C shall be deleted.

41-11: All references to Standard Drawings 8-13B and 8-13C shall be deleted.

41-14: Copper services will not be allowed in residential water services.

41-21: All references to Standard Drawings 8-14B shall be deleted.

41-22: This subsection shall be deleted.

Sections 42 – 43

No Modifications

Section 44

44-2: This entire subsection shall be deleted.

Section 45-48

No Modifications

Section 49

County Department of Transportation (and all sub-departments) shall be replaced by City Engineer.

49-2.02: All references to Standard Drawings 8-4-31 shall be replaced by Standard Drawing 4-20.

49-2.05: Standard Drawing 5-16 and 5-17 shall be deleted.

49-2.07: Standard Drawing 5-20A and 5-20B shall be deleted

49-2.11: Standard Drawings 5-8 through 5-11 shall be deleted.

49-6.03: This subsection shall be deleted. Internally Illuminated Street Name Sign will not be utilized with the City of Colusa unless required by the City Engineer.

49-8: County Traffic Signal Shop shall be replaced with City of Colusa Public Works Department.

Section 50

50-26: PVC pipe for sewers shall not be utilized for sewer mains without prior approval by City Engineer.

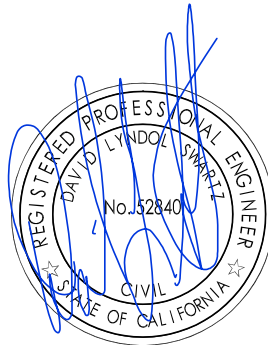
City of Colusa: Construction Specifications

- 50-34: Standard Drawings 9-9 and 9-11 shall be replaced by Standard Drawings 9-5 and 9-7.
- 50-34: Standard Drawings 7-11 shall be replaced by Standard Drawings 7-2.
- 50-34 Standard Drawings 7-11B shall be deleted.
- 50-34 paragraph 5 (36" manholes) shall be deleted.
- 50-34 paragraph 8 (locking covers) shall be deleted.
- 50-34 last paragraph shall be deleted.
- 50-37: Standard Drawings 7-2B shall be deleted.
- 50-40: Type "K" Copper shall not be utilized for residential water services without prior approval by City Engineer.
- 50-43.04: This subsection shall be deleted.
- 50-43.25: The latest list of approved Backflow Prevention devices can be obtained from the Sacramento County Environmental Health Division or their website at <http://www.emd.saccounty.net/EMDforms.htm#Crossconnection#Crossconnection>



CITY OF COLUSA
Department of Public Works

**CONTRACT DOCUMENTS
FOR
Walnut Ranch Unit I, II, And III
Waterline Improvements Project &
Sanitary Sewer Improvements Project
Volume 2**



2/5/2024
CITY OF COLUSA

DEPARTMENT OF PUBLIC WORKS

CONTRACT NO. 0610002-002C
CONTRACT NO. D2201019, C-06-8421-110

VOLUME 2 SPECIAL PROVISIONS

CONTRACT: CITY OF COLUSA – WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT AND
SANITARY SEWER IMPROVEMENTS PROJECT

SECTION 1. SPECIFICATIONS AND PLANS

The work embraced herein shall be performed in accordance with the State of California CDPH Standard Specifications dated 2010 and the State of California Standard Plans dated 2010, of the State of California Department of Transportation, insofar as the same may apply and in accordance with the following Special Provisions. The most recently published General Prevailing Wage Rates and Labor Surcharge and Equipment Rental Rates of the State of California Department of Industrial Relations shall be in effect at the time the work is accomplished. All of the aforementioned documents will be referred to hereinafter as Standard Specifications.

In case of conflict between the Standard Specifications and these Special Provisions, the Special Provisions shall take precedence over and be used in lieu of such conflicting portions.

The first sentence of the first paragraph of Section 1-1.29, "Plans", of the Standard Specifications is amended to read:

The official project plans and Standard Plans, profiles, typical cross sections, working drawings and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be performed.

A non-mandatory pre-bid meeting is scheduled on April 16th, at 10 AM, located at City Hall, 425 Webster St. Colusa, CA.

SECTION 1-1.01 DEFINITIONS AND TERMS

SPECIFICATIONS OR STANDARD SPECIFICATIONS: State of California CDPH Standard Specifications dated 2010 and the State of California Standard Plans dated 2010, of the State of California Department of Transportation, General Prevailing Wage Rates and Labor Surcharge and Equipment Rental Rates of the State of California Department of Industrial Relations

MUNICIPALITY: The City of Colusa.

CITY OF COLUSA ADMINISTRATIVE OFFICE: City of Colusa Office Building, located at 425 Webster Street, Colusa, California, 95932, (530) 458-4740.

OWNER: City of Colusa.

PROJECT ENGINEER: Project Engineer shall mean the Consulting City Engineer hired by the City whom prepared said construction documents, or his authorized agent acting within the scope of his authority who shall act as the representative of the City during the term of the contract.

LABORATORY: An Accepted laboratory of the CDHP of the State of California or laboratories authorized by the Engineer to test materials and work involved in the contract.

SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 GENERAL. -- The bidder's attention is directed to the provisions in Section 2, "Proposal Requirements and Conditions," of the California Department of Transportation Standard Specifications and these Special Provisions for the requirements and conditions which the bidder must observe in the preparation of the proposal form and the submission of the bid.

The last sentence in Section 2-1.01, "Contents of Proposal Forms," of the California Department of Transportation Standard Specifications is deleted.

The first sentence of the last paragraph in Section 2-1.07, "Proposal Guaranty" of the California Department of Transportation Standard Specifications, is amended to read:

The bidder's bond shall conform to the bond form in the book entitled "Proposal and Contract" for the project and shall be properly filled out and executed.

Attention is directed to Section 2-1.05, "Proposal Forms," Section 2-1.10, "Disqualification of Bidders," and Section 3, "Award and Execution of Contract," of the State of California Standard Specifications, and Section 820 of the Streets and Highways Code.

The form of Bidder's Bond mentioned in the last paragraph in Section 2-1.07, "Proposal Guaranty", of the California Department of Transportation Standard Specifications will be found following the signature page of the Proposal. Furthermore, in accordance with section 20392.5 of the Public Contract Code, the bidder's security shall be in the form of cash, a cashier's check made payable to the City of Colusa, a certified check made payable to the City of Colusa, or a bidder's bond executed by an admitted surety insurer and made payable to the City of Colusa.

The bidder's attention is directed to the provisions of Section 2-1.12, "Material Guaranty," of the Standard Specifications. The successful bidder shall furnish a written guaranty covering all work

performed or delivered under the contract against any defect in materials or workmanship that may be discovered within one year after City accepts the work as complete. The guaranty to be executed by the Contractor is included in these contract documents.

In accordance with Public Contract Code Section 7106, a Non-collusion Affidavit is included in the Proposal. Signing the Proposal shall also constitute signature of the Non-collusion Affidavit.

2-1.02 REQUIRED LISTING OF PROPOSED SUBCONTRACTORS. -- Each proposal shall have listed therein the name and address of each subcontractor to whom the bidder proposes to subcontract portions of the work in an amount in excess of 1/2 of one percent (0.5%) of his total bid or \$10,000, whichever is greater, in accordance with the Subletting and Subcontracting Fair Practices Act, commencing with Section 4100 of the Public Contract Code. The bidder's attention is invited to other provisions of said Act related to the imposition of penalties for a failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions. The list of subcontractors shall set forth the portion of work that will be done by each subcontractor listed. A sheet for listing the subcontractors is included in the Proposal.

2-1.03 DELETED

2-1.04 DELETED

2-1.05 DELETED

2-1.06 FEDERAL LOBBYING RESTRICTIONS. -- Section 1352, Title 31, United States Code, prohibits Federal funds from being expended by the recipient or any lower tier subrecipient of a Federal-Aid contract to pay for any person for influencing or attempting to influence a Federal agency or Congress in connection with the awarding of any Federal-Aid contract, the making of any Federal grant or loan, or the entering into of any cooperative agreement.

If any funds other than Federal funds have been paid for the same purposes in connection with this Federal-Aid contract, the recipient shall submit an executed certification and, if required, submit a completed disclosure form as part of the bid documents.

A certification of Federal-Aid contracts regarding payment of funds to lobby Congress or a Federal agency is included in the Proposal. Standard Form - LLL, "Disclosure of Lobbying Activities," with instructions for completion of the Standard Form is also included in the Proposal. Signing the Proposal shall constitute signature of the Certification.

The above-referenced certification and disclosure of lobbying activities shall be included in each subcontract and any lower- tier contracts exceeding \$100,000. All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the Engineer.

The Contractor, subcontractors and any lower-tier contractors shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by the Contractor, subcontractors and any lower-tier contractors. An event that materially affects the accuracy of the

information report includes:

- (1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
- (2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
- (3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

2-1.07 DESIGN ENGINEER MAY NOT BID ON CONSTRUCTION CONTRACT. -- No engineering or architectural firm which has provided design services for a project shall be eligible to bid on the contract to construct the project. The firms ineligible to bid include the prime contractor for design, subcontractors of portions of the design, and affiliates of either. An affiliate is a firm, which is subject to the control of the same persons, through joint ownership or otherwise.

2-1.08 – 2-1.11 RESERVED

2-1.12 DISADVANTAGED BUSINESS ENTERPRISES

2-1.12A GENERAL

Section 2-1.12 applies to a federal-aid contract.

Under 49 CFR 26.13(b):

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

“During the performance of this contract, the contractor agrees as follow:” (a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

“ (b) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

“(c) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers’ representative of the contractor’s commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

“(d) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

“(e) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

“(f) In the event of the contractor’s noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

“(g) The contractor will include the provision of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issue pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, That in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter in such litigation to protect the interest of the United States.”

2-1.12B UNDERUTILIZED DISADVANTAGED BUSINESS ENTERPRISES

2-1.12B (1) GENERAL

Section 2-1.12B applies if a UDBE goal is shown on the Notice to Bidders.

To ensure equal participation of DBE groups provided in 49 CFR 26.5, the Department shows a goal for UDBEs. A UDBE is a firm that meets the definition of DBE and is a member of one of the following groups:

1. Black Americans
2. Native Americans
3. Asian-Pacific Americans
4. Women

References to DBEs include UDBEs, but references to UDBEs do not include all DBEs. Make work available to UDBEs and select work parts consistent with available UDBE subcontractors and suppliers.

Meet the UDBE goal shown on the Notice to Bidders or demonstrate that you made adequate good faith efforts to meet this goal.

You are responsible to verify that the at the bid opening date the UDBE firm is certified as DBE by the CA Unified Certification Program.

Only UDBE participation will count toward the UDBE goal. DBE participation will count toward the Department's federally-mandated statewide overall DBE goal. Credit for materials or supplies you purchase from UDBEs counts toward the goal in the following manner:

1. 100 percent if the materials or supplies are obtained from a UDBE manufacturer.
2. 60 percent if the materials or supplies are obtained from a UDBE regular dealer.
3. Only fees, commissions, and charges for assistance in the procurement and delivery of materials or supplies, if they are obtained from a UDBE that is neither a manufacturer nor regular dealer. 49 CFR 26.55 defines "manufacturer" and "regular dealer." You receive credit toward the goal if you employ a UDBE trucking company that performs a commercially useful function as defined in 49 CFR 26.55(d)(1)–(4), (6).

2-1.12B(2) UDBE COMMITMENT SUBMITTAL

Submit UDBE information on the *Caltrans Bidder - UDBE - Commitment* form (UDBE commitment form) included in the *Bid* book. If the form is not submitted with the bid, remove the form from the *Bid* book before submitting your bid.

If the UDBE commitment form is not submitted with the bid, the apparent low bidder, the 2nd low bidder, and the 3rd low bidder must complete and submit the form to the Office Engineer. The UDBE commitment form must be received by the Office Engineer no later than 4:00 p.m. on the 4th business day after bid opening.

Other bidders are not required to submit the UDBE commitment form unless the Department requests it. If the Department requests a UDBE commitment form from you, submit the completed form within 4 business days of the request.

Submit written confirmation from each UDBE shown on the form stating that it will be participating in the Contract. Include confirmation with the UDBE commitment form. A copy of a UDBE's quote will serve as written confirmation that the UDBE will be participating in the Contract.

If you do not submit the UDBE commitment form by the specified time, your bid is nonresponsive.

2-1.12B(3) GOOD FAITH EFFORTS SUBMITTAL

If you have not met the UDBE goal, complete and submit the *Good Faith Efforts Documentation* form with the bid showing that you made adequate good faith efforts to meet the goal. Only good faith efforts directed toward obtaining participation by UDBEs are considered. If good faith efforts documentation is not submitted with the bid, it must be received by the Office Engineer no later than 4:00 p.m. on the 4th business day after bid opening.

If your UDBE commitment form shows that you have met the UDBE goal or if you are required to submit the UDBE commitment form, you must submit good faith efforts documentation within the specified time to protect your eligibility for award of the contract in the event the Department finds that the UDBE goal has not been met. Good faith efforts documentation must include the following information and supporting documents, as necessary:

1. Items of work you have made available to UDBE firms. Identify those items of work you might otherwise perform with your own forces and those items that have been broken down into economically feasible units to facilitate UDBE participation. For each item listed, show the dollar value and percentage of the total bid. You are responsible to demonstrate that sufficient work to meet the goal was made available to UDBE firms.
2. Names of certified UDBEs and dates on which they were solicited to bid on the project. Include the items of work offered. Describe the methods used for following up initial solicitations to determine with certainty whether the UDBEs were interested and include the dates of the follow-up. Attach supporting documents such as copies of letters, memos, facsimiles sent, telephone logs, telephone billing statements, and other evidence of solicitation. You are reminded to solicit certified UDBEs through all reasonable and available means and provide enough time to allow UDBEs to respond.
3. Name of selected firm and its status as a UDBE for each item of work made available. Include name, address, and telephone number of each UDBE that provided a quote and its price quote. If the firm selected for the item is not a UDBE, provide the reasons for the selection.
4. Name and date of each publication in which you requested UDBE participation for the project. Attach copies of the published advertisements.
5. Names of agencies and dates on which they were contacted to provide assistance in contacting, recruiting, and using UDBE firms. If the agencies were contacted in writing, provide copies of supporting documents.
6. List of efforts made to provide interested UDBEs with adequate information about the plans, specifications, and requirements of the contract to assist them in responding to a solicitation. If you have provided information, identify the name of the UDBE assisted, the nature of the information provided, and date of contact. Provide copies of supporting documents, as appropriate.
7. List of efforts made to assist interested UDBEs in obtaining bonding, lines of credit, insurance, necessary equipment, supplies, and materials excluding supplies and equipment that the UDBE subcontractor purchases or leases from the prime contractor or its affiliate. If such assistance is provided by you, identify the name of the UDBE assisted, nature of the assistance offered, and date assistance was offered. Provide copies of supporting documents, as appropriate.
8. Any additional data to support demonstration of good faith efforts.

The Department may consider UDBE commitments of the 2nd and 3rd bidders in determining whether the low bidder made good faith efforts to meet the UDBE goal.

SECTION 3. AWARD AND EXECUTION OF CONTRACT

3-1.01 AWARD OF CONTRACT. -- Section 3-1.01, "Award of Contract," of the Standard Specifications is amended to read:

The right is reserved to reject any and all proposals. The award of contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed.

3-1.02 BONDS. -- Contractor shall provide, at the time of the execution of the agreement or contract for work and at his own expense, a surety bond in an amount equal to at least one hundred percent (100%) of the contract price as security for the faithful performance of said agreement. Contractor shall also provide, at the time of the execution of the agreement or contract for the work, and at his own expense, a separate surety bond in an amount equal to at least one hundred percent (100%) of the contract price as security for the payment of all persons performing labor and furnishing materials in connection with said agreement. Sureties on each of said bonds shall be satisfactory to the City Counsel. Bonds shall remain in effect until final acceptance by the City.

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in Section 8-1.03, "Beginning of Work," in Section 8-1.06, "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the California Department of Transportation Standard Specifications and these General Conditions. Contractor will start work to be performed under this contract within fifteen (15) calendar days after the Contractor is instructed in writing by the Project Engineer to proceed with the work. Said work shall be diligently prosecuted to completion. All the work shall be completed and ready for acceptance within **120** working days after being instructed to proceed with the work.

The Contractor shall pay to the City of Colusa the sum of **\$100.00 per day** for each and every working day's delay in finishing the work in excess of the number of working days prescribed above.

The Engineer will call no pre-construction conference. However questions received either by telephone or in writing shall be recorded, answered and faxed or emailed to all plan holders.

All articles of archaeological interest, which may be uncovered by the Contractor during the progress of the work, shall be reported immediately to the Engineer. The further operations of the Contractor, with respect to the find, will be decided under the direction of the Engineer.

SECTION 5. GENERAL

SECTION 5-1. MISCELLANEOUS

5-1.01 LABOR NONDISCRIMINATION. -- Attention is directed to the following Notice that is

required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

**NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM
(GOV. CODE, SECTION 12990)**

Your attention is called to the "Nondiscrimination Clause," set forth in Section 7-1.01A(4), "Labor Nondiscrimination," of the Standard Specifications, which is applicable to all nonexempt state contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The Specifications are applicable to all nonexempt state construction contracts and subcontracts of \$5,000 or more.

5-1.02 LABOR CODE REQUIREMENTS. – Notice is hereby given that all contractors must be registered with the Department of Industrial Relations, prior to entering into a contract with the City of Colusa for any and all public works projects. Public works law requires private construction contractors to pay prevailing wages to their workers and requires the construction contractor to follow public works law when working on a project funded by a public entity. A public entity can be the State of California, or any public agency such as a county, city, school or a special district. Prevailing wages are due, in most instances, if the project costs more than \$1,000, and involves the following construction work: new construction, alteration, demolition, installation, repair and maintenance. Contractors must make an attempt to hire apprentices when the total project costs exceed \$30,000.

Public Works Projects

The agency awarding the contract for a public works project must notify DIR **within five days of awarding the contract**. This requirement applies to all public works projects that are subject to the prevailing wage requirements of the Labor Code, regardless of size or funding source.

All workers employed on public works projects must be paid the prevailing wage determined by the Director of the Department of Industrial Relations according to the type of work and location. The prevailing wage rates are usually based on rates specified in collective bargaining agreements.

Public works contractor registration is required for all contractors, professional services companies, and trucking firms who perform construction or construction-related work on public works projects. This work includes tasks such as onsite field surveying, on/off refuse hauling, onsite soil/material testing and onsite building/construction inspecting. All these activities require companies to be registered and pay prevailing wages.

IMPORTANT NOTICE to all contractors who bid on a public works project in California on or after March 1, 2015, or who were awarded such a project on or after April 1, 2015: All DIR Public Works new contractor registrations obtained before July 1, 2015, expired at the end of that fiscal year, on June 30, 2015.

- If your DIR Public Works (PW) contractor registration has expired **and** your public works projects are ongoing, or you are bidding on new public works projects, **be sure to renew your registration to avoid incurring high penalties.**

- **Starting on January 1, 2016**, the penalty for lapsed contractor registration (in addition to the \$300 annual renewal fee) will increase from \$300 to \$2,000.
- Please note that if you were registered last year and since July 1, 2015, you have **not bid on or worked on** any public works projects requiring registration (in other words, your registration has expired, but not lapsed), you can renew now or later for this fiscal year without incurring any penalties.

Contractors and subcontractors must register with DIR in order to bid on public works projects as of March 1, 2015, or be awarded a public works project as of April 1, 2015.

Contractor Registration Application Process

Registration with DIR costs \$300 and covers the fiscal year (July 1–June 30th). Credit card payments can be processed within 24 hours, while other forms of payment may delay registration for up to eight weeks.

- **Verify your contractor registration status for the current fiscal year**
 - **Quick tips** for using the active registration search tool most effectively
 - **Please note:** If the current fiscal year search is not pulling up your information and you registered before June 30th, your registration has likely expired. Please begin the renewal process (see the selection just below). A search engine within the renewal application will confirm if your registration has expired and allow you to renew it.
- **Activate or renew your contractor registration**
 - Instructions for completing the contractor registration and renewal application
 - Contractor registration training video
- **Find your project on our database**

Eligibility Requirements

Contractors must:

- Be in good legal standing with no outstanding judgments or liens owed to workers or to the State of California.
- Not be debarred from doing public works by the United States Department of Labor or any state that has public works debarment laws.
- Have a California Contractors State License if one is required (non-construction contractors must provide their professional license number if one exists for their profession).

Consequences of Noncompliance

Contractors shall pay a penalty of

- \$2,000 if the unregistered contractor
 - bid on a public works project on or after March 1, 2015,
 - was awarded a public works contract on or after April 1, 2015, or
 - intentionally allowed registration to lapse while bidding or working on a public works project
- \$300, for inadvertent lapses in registration (failure to renew before bidding or working on a public works project) as long as the registration is renewed by December 31, 2015. Renewing with a lapsed registration after that date will result in a \$2,000 penalty.

The first paragraph of Section 7-1.01A(2), "Prevailing Wage," of the Standard Specifications is amended to read:

The Contractor shall comply with Labor Code Sections 1774 and 1775. Pursuant to said Section 1775, the Contractor shall forfeit to the State or political subdivision on whose behalf the contract is made or awarded a penalty of not more than fifty dollars (\$50.00) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for any public work done under the contract by him or her or by any subcontractor under him or her in violation of the provisions of the Labor Code and in particular, Labor Code Sections 1770 to 1780, inclusive. The amount of this forfeiture shall be determined by the Labor Commissioner and shall be based on consideration of the Contractor's mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages, or the previous record of the Contractor in meeting his or her prevailing wage obligations, or a Contractor's willful failure to pay the correct rates of prevailing wages. A mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages is not excusable if the Contractor had knowledge of his or her obligations under the Labor Code. In addition to said penalty and pursuant to said Section 1775, the difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor..

Section 7-1.01A(2), "Prevailing Wage," of the Standard Specifications is amended to read:

7-1.01A(2) Prevailing Wage.— The Contractor and any subcontractor under the Contractor shall comply with Labor Code Sections 1774 and 1775. Pursuant to Section 1775, the Contractor and any subcontractor under the Contractor shall forfeit to the State or political subdivision on whose behalf the contract is made or awarded a penalty of not more than fifty dollars (\$50) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for any public work done under the contract by the Contractor

or by any subcontractor under the Contractor in violation of the provisions of the Labor Code and in particular, Labor Code Sections 1770 to 1780, inclusive. The amount of this forfeiture shall be determined by the Labor Commissioner and shall be based on consideration of the mistake, inadvertence, or neglect of the Contractor or subcontractor in failing to pay the correct rate of prevailing wages, or the previous record of the Contractor or subcontractor in meeting their respective prevailing wage obligations, or the willful failure by the Contractor or subcontractor to pay the correct rates of prevailing wages. A mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages is not excusable if the Contractor or subcontractor had knowledge of the obligations under the Labor Code. In addition to the penalty and pursuant to Labor Code Section 1775, the difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor or subcontractor. If a worker employed by a subcontractor on a public works project is not paid the general prevailing per diem wages by the subcontractor, the prime contractor of the project is not liable for the penalties described above unless the prime contractor had knowledge of that failure of the subcontractor to pay the specified prevailing rate of wages to those workers or unless the prime contractor fails to comply with all of the following requirements:

1. The contract executed between the contractor and the subcontractor for the performance of work on the public works project shall include a copy of the provisions of Sections 1771, 1775, 1776, 1777.5, 1813, and 1815 of the Labor Code.
2. The contractor shall monitor the payment of the specified general prevailing rate of per diem wages by the subcontractor to the employees, by periodic review of the certified payroll records of the subcontractor.
3. Upon becoming aware of the subcontractor's failure to pay the specified prevailing rate of wages to the subcontractor's workers, the contractor shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for work performed on the public works project.
4. Prior to making final payment to the subcontractor for work performed on the public works project, the contractor shall obtain an affidavit signed under penalty of perjury from the subcontractor that the subcontractor has paid the specified general prevailing rate of per diem wages to the subcontractor's employees on the public works project and any amounts due pursuant to Section 1813 of the Labor Code.

Pursuant to Section 1775 of the Labor Code, the Division of Labor Standards Enforcement shall notify the Contractor on a public works project within 15 days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a subcontractor on that public works project to pay workers the general prevailing rate of per diem wages. If the Division of Labor Standards Enforcement determines that employees of a subcontractor were not paid the general prevailing rate of per diem wages and if the Department did not retain sufficient money under the contract to pay those employees the balance of wages owed under

the general prevailing rate of per diem wages, the contractor shall withhold an amount of moneys due the subcontractor sufficient to pay those employees the general prevailing rate of per diem wages if requested by the Division of Labor Standards Enforcement. The Contractor shall pay any money retained from and owed to a subcontractor upon receipt of notification by the Division of Labor Standards Enforcement that the wage complaint has been resolved. If notice of the resolution of the wage complaint has not been received by the Contractor within 180 days of the filing of a valid notice of completion or acceptance of the public works project, whichever occurs later, the Contractor shall pay all moneys retained from the subcontractor to the Department. These moneys shall be retained by the Department pending the final decision of an enforcement action.

Pursuant to the provisions of Section 1773 of the Labor Code, the Department has obtained the general prevailing rate of wages (which rate includes employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided for in Section 1773.8 of the Labor Code, apprenticeship or other training programs authorized by Section 3093 of the Labor Code, and similar purposes) applicable to the work to be done, for straight time, overtime, Saturday, Sunday and holiday work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification or type of workmen concerned. The general prevailing wage rates and any applicable changes to these wage rates are available at the City of Colusa Public Works Department. General prevailing wage rates are also available from the California Department of Industrial Relations' Internet Web Site at: <http://www.dir.ca.gov>.

The wage rates determined by the Director of Industrial Relations for the project refer to expiration dates. Prevailing wage determinations with a single asterisk after the expiration date are in effect on the date of advertisement for bids and are good for the life of the contract. Prevailing wage determinations with double asterisks after the expiration date indicate that the wage rate to be paid for work performed after this date has been determined. If work is to extend past this date, the new rate shall be paid and incorporated in the contract. The Contractor shall contact the Department of Industrial Relations as indicated in the wage rate determinations to obtain predetermined wage changes.

Pursuant to Section 1773.2 of the Labor Code, general prevailing wage rates shall be posted by the Contractor at a prominent place at the site of the work.

Changes in general prevailing wage determinations which conform to Labor Code Section 1773.6 and Title 8 California Code of Regulations Section 16204 shall apply to the project when issued by the Director of Industrial Relations at least 10 days prior to the date of the Notice to Contractors for the project.

The State will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate set forth in the contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining the bid, and will not under any circumstances be considered as the basis of a claim against the State on the contract.

7-1.01A(2)(a) Travel and Subsistence Payments.— Attention is directed to the requirements of Section 1773.8 of the Labor Code. The Contractor shall make travel and subsistence payments to each workman, needed to execute the work, in accordance with the requirements in Labor Code Section 1773.8.

The first and second paragraphs of Section 7-1.01A(3), "Payroll Records," of the Standard Specifications are amended to read:

7-1.01A(3) Payroll Records.— Attention is directed to the provisions of Labor Code Section 1776, a portion of which is quoted below. Regulations implementing Labor Code Section 1776 are located in Sections 16016 through 16019 and Sections 16207.10 through 16207.19 of Title 8, California Code of Regulations.

"1776. (a) Each contractor and subcontractor shall keep accurate payroll records, 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 employed by him or her in connection with the public work. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

- 1) The information contained in the payroll record is true and correct.
- 2) The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project.

“(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the contractor on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the body awarding the contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the

contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the contractor.

"(c) The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.

"(d) A contractor or subcontractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested the records within 10 days after receipt of a written request.

"(e) Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in a manner so as to prevent disclosure of an individual's name, address, and social security number. The name and address of the contractor awarded the contract or the subcontractor performing the contract shall not be marked or obliterated.

"(f) The contractor shall inform the body awarding the contract of the location of the records enumerated under subdivision (a), including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.

"(g) The contractor or subcontractor shall have 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated in subdivision (a). In the event that the contractor or subcontractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. A contractor is not subject to a penalty assessment pursuant to this section due to the failure of a subcontractor to comply with this section."

The penalties specified in subdivision (g) of Labor Code Section 1776 for noncompliance with the provisions of Section 1776 may be deducted from any moneys due or which may become due to the Contractor.

5-1.03 ARBITRATION. -- The last paragraph in Section 9-1.10, "Arbitration," of the California Department of Transportation Standard Specifications is amended to read.

Arbitration shall be initiated by a Complaint in Arbitration made in compliance with the requirements of said regulations. A Complaint in Arbitration by the Contractor shall be made not later than 180 days after the date of service in person or by mail on the Contractor of the final written decision by the Department on the claim.

5-1.04 NOTICE OF POTENTIAL CLAIM. -- Section 9-1.04, "Notice of Potential Claim," of the California Department of Transportation Standard Specifications is amended to read:

9-1.04 Notice of Potential Claim.—The Contractor shall not be entitled to the payment of any additional compensation for any act, or failure to act, by the Engineer, including failure or refusal to issue a change order, or for the happening of any event, thing, occurrence, or other cause, unless he shall have given the Engineer due written notice of potential claim as hereinafter specified. Compliance with this Section 9-1.04 shall not be a prerequisite as to matters within the scope of the protest provisions in Section 4-1.03, "Changes," or Section 8-1.06, "Time of Completion," or the notice provisions in Section 5-1.116, "Differing Site Conditions," or Section 8-1.07, "Liquidated Damages," or Section 8-1.10, "Utility and Non-Highway Facilities," nor to any claim which is based on differences in measurements or errors of computation as to contract quantities.

The written notice of potential claim shall be submitted to the Engineer prior to the time that the Contractor performs 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 happening of the event, thing, occurrence, or other cause, giving rise to the potential claim.

The written notice of potential claim shall be submitted on Form CEM-6201 furnished by the Department and shall be certified with reference to the California False Claims Act, Government Code Sections 12650 - 12655. The notice shall set forth the reasons for which the Contractor believes additional compensation will or may be due and the nature of the costs involved. Unless the amount of the potential claim has been stated in the written notice, the Contractor shall, within 15 days of submitting said notice, furnish an estimate of the cost of the affected work and impacts, if any, on project completion. Said estimate of costs may be changed or updated by the Contractor when conditions have changed. When the affected work is completed, the Contractor shall submit substantiation of his actual costs. Failure to do so shall be sufficient cause for denial of any claim subsequently filed on the basis of said notice of potential claim.

It is the intention of this Section 9-1.04 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 in order 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 such act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was filed.

Should the Contractor, in connection with or subsequent to the assertion of a potential claim, request inspection and copying of documents or records in the possession of the Department that pertain to the potential claim, Contractor shall make its records of the project, as deemed by the Department to be pertinent to the potential claim, available to the Department for inspection and copying.

5-1.05 PARTIAL PAYMENTS. -- The last paragraph of Section 9-1.06, "Partial Payments," of the Standard Specifications is amended to read:

Attention is directed to the prohibitions and penalties pertaining to unlicensed contractors as provided in Business and Professions Code Sections 7028.15(a) and 7031.

10% will be withheld from each payment to the contractor. Final payment of withheld funds will be made pursuant to the following two sub-sections (5-1.06 & 5-1.07)

5-1.06 PAYMENT OF WITHHELD FUNDS. -- Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications, is amended by adding the following after the third paragraph:

Alternatively, and subject to the approval of the Department, the payment of retentions earned may be deposited directly with a person licensed under Division 6 (commencing with Section 17000) of the Financial Code as the escrow agent. Upon written request of an escrow agent that has not been approved by the Department under subdivision (c) of Section 10263 of the Public Contract Code, the Department will provide written notice to that escrow agent within 10 business days of receipt of the request indicating the reason or reasons for not approving that escrow agent. The payments will be deposited in a trust account with a Federally chartered bank or savings association within 24 hours of receipt by the escrow agent. The Contractor shall not place any retentions with the escrow agent in excess of the coverage provided to that escrow agent pursuant to subdivision (b) of Section 17314 of the Financial Code. In all respects not inconsistent with subdivision (c) of Section 10263 of the Public Contract Code, the remaining provisions of Section 10263 of the Public Contract Code shall apply to escrow agents acting pursuant to subdivision (c) of Section 10263 of the Public Contract Code.

5-1.07 FINAL PAYMENT AND CLAIMS. -- Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications is amended to read:

9-1.07B Final Payment and Claims.—After acceptance by the Director, the Engineer will make a proposed final estimate in writing of the total amount payable to the Contractor, including therein an itemization of said amount, segregated as to contract item quantities, extra work and any other basis for payment, and shall also show therein all deductions made or to be made for prior payments and amounts to be kept or retained under the provisions of the contract. All prior estimates and payments shall be subject to correction in the proposed final estimate. The Contractor shall submit written approval of the proposed final estimate or a written statement of all claims arising under or by virtue of the contract so that the Engineer receives such written approval or statement of claims no later than close of business of the thirtieth day after receiving the proposed final estimate. If the thirtieth day falls on a Saturday, Sunday or legal holiday, then receipt of such written approval or statement of claims by the Engineer shall not be later than close of business of the next business day. No claim will be considered that was not included in the written statement of claims, nor will any claim be allowed as to which a notice or protest is required under the provisions in Sections 4-1.03, "Changes," 8-1.06, "Time of Completion," 8-1.07, "Liquidated Damages," 5-1.116, "Differing Site Conditions," 8-1.10, "Utility and Non-Highway

Facilities," and 9-1.04, "Notice of Potential Claim," unless the Contractor has complied with the notice or protest requirements in said sections.

On the Contractor's approval, or if he files no claim within said period of 30 days, the Engineer will issue a final estimate in writing in accordance with the proposed final estimate submitted to the Contractor and within 30 days thereafter the State will pay the entire sum so found to be due. Such final estimate and payment thereon shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

If the Contractor within said period of 30 days files claims, the Engineer will issue a semifinal estimate in accordance with the proposed final estimate submitted to the Contractor and within 30 days thereafter the State will pay the sum so found to be due. Such semifinal estimate and payment thereon shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except insofar as affected by the claims filed within the time and in the manner required hereunder and except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

Claims filed by the Contractor shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of said claims. If additional information or details are required by the Engineer to determine the basis and amount of said claims, the Contractor shall furnish such further information or details so that the information or details are received by the Engineer no later than the fifteenth day after receipt of the written request from the Engineer. If the fifteenth day falls on a Saturday, Sunday or legal holiday, then receipt of such information or details by the Engineer shall not be later than close of business of the next business day. Failure to submit such information and details to the Engineer within the time specified will be sufficient cause for denying the claim.

The Contractor shall keep full and complete records of the costs and additional time incurred for any work for which a claim for additional compensation is made. The Engineer or any designated claim investigator or auditor shall have access to those records and any other records as may be required by the Engineer to determine the facts or contentions involved in the claims. Failure to permit access to such records shall be sufficient cause for denying the claims.

Claims submitted by the Contractor shall be accompanied by a notarized certificate containing the following language:

Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code Section 12650 et. seq., the undersigned,

_____,
(Name) _____ of
(Title) _____,
(Company)

hereby certifies that the claim for the additional compensation and time, if any, made herein for the work on this contract is a true statement of the actual costs incurred and time sought, and is fully documented and supported under the contract between parties.

Dated _____

/s/ _____

Subscribed and sworn before me this _____ day of _____.

Notary Public
My Commission Expires _____

Failure to submit the notarized certificate will be sufficient cause for denying the claim.

Any claim for overhead type expenses or costs, in addition to being certified as stated above, shall be supported by an audit report of an independent Certified Public Accountant. Any such overhead claim shall also be subject to audit by the State at its discretion.

Any costs or expenses incurred by the State in reviewing or auditing any claims that are not supported by the Contractor's cost accounting or other records shall be deemed to be damages incurred by the State within the meaning of the California False Claims Act.

The City Manager of the City of Colusa which administers the contract will make the final determination of any claims which remain in dispute after completion of claim review by the Engineer. A board or person designated by said City Manager will review such claims and make a written recommendation thereon to the City Manager. The Contractor may meet with the review board or person to make a presentation in support of such claims.

Upon final determination of the claims, the Engineer will then make and issue his final estimate in writing and within 30 days thereafter the State will pay the entire sum, if any, found due thereon. Such final estimate shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

5-1.08 PUBLIC SAFETY. -- In addition to any other measures taken by the Contractor pursuant to the provisions of Section 7-1.09, "Public Safety," of the Standard Specifications, the Contract shall install temporary railing barriers as necessary for public safety.

(1) Excavations. -- Any excavation.

5-1.09 SURFACE MINING AND RECLAMATION ACT. -- Attention is directed to the Surface Mining and Reclamation Act of 1975, commencing in Public Resources Code, Mining and Geology, Section 2710, which establishes regulations pertinent to surface mining operations.

Material from mining operations furnished for this project shall only come from permitted sites in compliance with the Surface Mining and Reclamation Act of 1975.

The requirements of this section shall apply to all materials furnished for the project, except for acquisition of materials in conformance with Section 4-1.05, "Use of Materials Found on the Work," of the Standard Specifications.

5-1.10 BUY AMERICA REQUIREMENTS. -- By May 14, 2022, agencies must ensure that all applicable programs comply with section 70914 of the Build America Buy America Act, including by the incorporation of a Buy America preference in the terms and conditions of each award with an infrastructure project. The Act requires the following Buy America preference:

(1) All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) All manufactured products used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.

5 Attention is directed to the "Buy America" requirements of the Surface Transportation Assistance Act of 1982 (Section 165) and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) Sections 1041(a) and 1048(a), and the regulations adopted pursuant thereto. In accordance with said law and regulations, all manufacturing processes for steel and iron materials furnished for incorporation into the work on this project shall occur in the United States; with the exception that pig iron and processed, pelletized and reduced iron ore manufactured outside of the United States may be used in the domestic manufacturing process for such steel and iron materials. The application of coatings, such as epoxy coating, galvanizing, painting, and any other coating that protects or enhances the value of such steel or iron materials shall be considered a manufacturing process subject to the "Buy America" requirements.

A Certificate of Compliance, conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications, shall be furnished for steel and iron materials. The certificates, in addition to certifying that the materials comply with the specifications, shall also

specifically certify that all manufacturing processes for the materials occurred in the United States, except for the exceptions allowed herein.

The requirements imposed by said law and regulations do not prevent a minimal use of foreign steel and iron materials if the total combined cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract cost or \$2,500, whichever is greater. The Contractor shall furnish the Engineer acceptable documentation of the quantity and value of any foreign steel and iron prior to incorporating such materials into the work.

5-1.11 REMOVAL OF ASBESTOS AND HAZARDOUS SUBSTANCES. -- When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe, and shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In accordance with Section 25914.1 of the Health and Safety Code, all such removal of asbestos or hazardous substances including any exploratory work to identify and determine the extent of such asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for such delay as provided in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

5-1.12 SUBCONTRACTING. -- Attention is directed to the provisions in Section 8-1.01, "Subcontracting," of the Standard Specifications, "Proposal Requirements and Conditions," elsewhere in these Specifications.

The requirement in the third paragraph of said Section 8-1.01 that the Contractor shall perform with his own organization contract work amounting to not less than 50 percent of the original contract price is not changed by the Federal Aid requirement specified under "Required Contract Provisions Federal-Aid Construction Contracts" in Section 14 in these Special Provisions that the Contractor perform not less than 30 percent of the original contract work with his own organization.

Each subcontract and any lower tier subcontract that may in turn be made shall include the "Required Contract Provisions Federal-Aid Construction Contracts" in Section 14 of these Special Provisions. This requirement shall be enforced as follows:

Noncompliance shall be corrected. Payment for subcontracted work involved will be withheld from progress payments due, or to become due, until correction is made. Failure to comply may result in termination of the contract.

5-1.13 PAYMENTS. -- Attention is directed to Sections 9-1.06, "Partial Payments," and 9-1.07, "Payment After Acceptance," of the Standard Specifications and these Special Provisions.

No partial payment will be made for any materials on hand which are furnished but not incorporated in the work.

5-1.14 SOUND CONTROL REQUIREMENTS. -- Sound control shall conform to the provisions in Section 7-1.01I, "Sound Control Requirements," of the California Department of Transportation Standard Specifications and these Special Provisions.

The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dbA at a distance of 50 feet. This requirement in no way relieves the Contractor from responsibility for complying with local ordinances regulating noise level.

Said noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

5-1.15 PROJECT APPEARANCE. -- The Contractor shall maintain a neat appearance to the work.

In any area visible to the public, the following shall apply:

When practicable, broken concrete and debris developed during construction shall be disposed of concurrently with its removal. If stockpiling is necessary, the material shall be removed or disposed of weekly.

The Contractor shall furnish trash bins for all debris from structure construction. All debris shall be placed in trash bins daily. Forms or falsework that are to be re-used shall be stacked neatly concurrently with their removal. Forms and falsework that are not to be re-used shall be disposed of concurrently with their removal.

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

5-1.16 ENVIRONMENTAL CONTROL. The Contractor shall comply with all environmental control rules, regulations, ordinances and statutes that apply to the project and any work performed pursuant to the contract.

All waste materials removed shall be hauled away and disposed of at a proper disposal site by the Contractor.

Unless otherwise designated, all trees, landscaping and shrubbery shall be protected.

5-1.17 PROMPT PROGRESS PAYMENT TO SUBCONTRACTORS. -- Attention is directed to the provisions in Sections 10262 and 10262.5 of the Public Contract Code and Section 7108.5 of the Business and Professions Code concerning prompt payment to subcontractors.

5-1.18 DELETED

5-1.19 DELETED

5-1.20 PROMPT PAYMENT OF WITHHELD FUNDS TO SUBCONTRACTORS. -- The Contractor shall return all monies withheld in retention from the subcontractor within 30 days after receiving payment for work satisfactorily completed, even if the other contract work is not completed and has not been accepted in conformance with Section 7-1.17, "Acceptance of Contract," of the California Department of Transportation Standard Specifications. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or noncompliance by a subcontractor.

5-1.21 AUDIT PROVISIONS. -- The following audit requirements apply from the effective date of this agreement until three years after City's final payment under this agreement:

- A. Contractor shall allow City's authorized representatives to inspect, audit, and copy Contractor's records as needed to evaluate and verify any invoices, payments, and claims that Contractor submits to City or that any payee of Contractor submits to Contractor in connection with this agreement. "Records" includes but is not limited to correspondence, accounting records, subcontract files, change order files, and any other supporting evidence relevant to the invoices, payments, or claims.
- B. City and Contractor shall be subject to the examination and audit of the State Auditor, at the request of the City or as part of any audit of the City. Such examinations and audits shall be confined to matters connected with the performance of this agreement, including but not limited to administration costs.

This section shall survive the expiration or termination of this agreement

5-1.22 SUSPENSION OF WORK. -- In addition to the requirements specified in Section 8-1.05, "Temporary Suspension of Work," of the California Department of Transportation Standard Specifications, the following shall apply:

SUSPENSIONS OF WORK ORDERED BY THE ENGINEER. -- If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the contractor believes that additional compensation or contract time or additional compensation and contract time is due as a result of such suspension or delay, the contractor shall submit to the Engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall

set forth the reasons and support for such adjustment.

Upon receipt, the Engineer will evaluate the contractor's request. If the Engineer agrees that the cost or time or cost and time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers or subcontractors at any approved tier and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Engineer will notify the contractor of his determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.

No contract adjustment will be allowed under the provisions specified in this section to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any term or condition of this contract.

Any contract adjustment warranted due to suspension of work ordered by the Engineer will be made in the same manner as provided for right of way delays in Section 8-1.09, "Right of Way Delays," of the Standard Specifications

5-1.23 FORCE ACCOUNT PAYMENT. -- The fourth paragraph in Section 9-1.03A, "Work Performed by Contractor," of the Standard Specifications is amended to read:

When extra work to be paid for on a force account basis is performed by a subcontractor, approved in accordance with the provisions in Section 8-1.01, "Subcontracting," an additional markup of 5 percent will be added to the total cost of said extra work, including all markups specified in this Section 9-1.03A. Said additional 5 percent markup shall reimburse the Contractor for additional administrative costs and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

The first paragraph in Section 9-1.03A(3), "Equipment Rental," of the Standard Specifications is amended to read:

The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and which is a part of the contract, regardless of ownership and rental or other agreement, if such may exist, for use of such equipment entered into by the Contractor, except that for those pieces of equipment with a rental rate of \$10.00 per hour or less as listed in the Labor Surcharge and Equipment Rental Rates publication and which are rented from a local equipment agency, other than Contractor owned, the Contractor will be paid at the hourly rate shown on the rental agency invoice or agreement for the time used on force account work as provided in Section 9-1.03A(3a), "Equipment on the Work." If a minimum equipment rental amount is required by the local equipment rental agency, the actual amount charged will be paid to the Contractor.

If it is deemed necessary by the Engineer to use equipment not listed in said publication, a suitable

rental rate for such equipment will be established by the Engineer. The Contractor may furnish any cost data, which might assist the Engineer in the establishment of such rental rate. If the rental rate established by the Engineer is \$10.00 per hour or less, the provisions above concerning rental of equipment from a local equipment agency shall apply.

The sixth paragraph in said Section 9-1.03A(3) is amended to read:

Individual pieces of equipment or tools not listed in said publication and having a replacement value of \$500 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefore.

Section 9-1.03A(3), "Equipment Rental," of the Standard Specifications is amended by adding Section 9-1.03A(3d), "Dump Truck Rental," as follows:

9-1.03A(3d) DUMP TRUCK RENTAL. -- Dump truck rental shall conform to the provisions of Sections 9-1.03A(3), "Equipment Rental," 9-1.03A(3a), "Equipment on the Work," and 9-1.03A(3b), "Equipment Not on the Work," except as follows:

Fully maintained and operated rental dump trucks used in the performance of extra work paid for on a force account basis will be paid for at the same hourly rate paid by the Contractor for use of fully maintained and operated rental dump trucks in performing contract item work.

In the absence of contract item work requiring dump truck rental, the Engineer will establish an hourly rental rate to be paid. The Contractor shall provide the Engineer with complete information on the hourly rental rates available for rental of fully maintained and operated dump trucks.

The provisions in Section 9-1.03A(1), "Labor," shall not apply to operators of rented dump trucks.

The rental rates listed for dump trucks in the Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates shall not apply.

To the total of the rental costs for fully maintained and operated dump trucks there will be added a markup of 15 percent. An additional markup of 5 percent will be added by reason of performance of the work by a subcontractor. No markup will be made for labor.

The provisions of Section 9-1.03A(3c), "Owner-Operated Equipment," shall not apply to dump truck rentals.

5-1.24 PAYMENT OF WITHHELD FUNDS. -- Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications is amended to read:

PAYMENT OF WITHHELD FUNDS. -- Attention is directed to Section 9-1.06, "Partial Payments," and in particular to the retention provisions of said section.

Upon the Contractor's request, pursuant to Public Contract Code Section 10263, the City will make payment of funds withheld from progress payments to ensure performance of the contract if the Contractor deposits in escrow with the City Treasurer, or with a bank acceptable to the City, securities equivalent to the amount withheld. The Contractor shall be beneficial owner of any securities

substituted for moneys withheld and shall receive any interest thereon. Upon satisfactory completion of the contract, the securities shall be returned to the Contractor.

Alternatively, upon the Contractor's request, the City will make payment of retention's earned directly to the escrow agent. The Contractor may direct the investment of payments into securities and the Contractor shall receive the interest earned on the investments upon the same terms provided for securities deposited by the Contractor. Upon satisfactory completion of the contract, the Contractor shall receive from the escrow agent all securities, interest and payments received by the escrow agent from the City, pursuant to the terms in Section 22300 of the Public Contract Code.

Securities eligible for investment shall include those listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the City.

The escrow agreement used pursuant to this Section 9-1.065 shall be substantially similar to the "Escrow Agreement for Security Deposits In Lieu of Retention" in Section 10263 of the Public Contract Code, deemed as incorporated herein by reference.

The Contractor shall obtain the written consent of the surety to such agreement.

5-1.25 HAZARDOUS WASTE IN EXCAVATION. -- If the contractor encounters material in excavation which he or she has reason to believe may be hazardous waste, as defined by Section 25117 of the Health and Safety Code, he shall immediately so notify the Engineer in writing. Excavation in the immediate area of the suspected hazardous material shall be suspended until the Engineer authorizes it to be resumed. If such suspension delays the current controlling operation, the contractor will be granted an extension of time as provided in Section 8-1.07, "Liquidated Damages," of the Standard Specifications.

If such suspension delays the current controlling operation more than 2 working days, the delay will be considered a right of way delay and the contractor will be compensated for such delay as provided in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The City reserves the right to use other forces for exploratory work to identify and determine the extent of such material and for removing hazardous material from such area.

SECTION 6. BLANK

SECTION 7. INSURANCE

Contractor shall indemnify, defend and save harmless the City of Colusa, its officers, agents and employees from and against any and all liabilities, claims, demands, damages and costs (including attorneys' fees and litigation costs through final appeal) whatsoever accruing or resulting to any and all persons, firms or corporations furnishing or supplying work, services, materials or supplies in

connection with the performance of this agreement, and from any and all liabilities, claims, demands, damages and costs (including attorneys' fees and litigation costs through final appeal) accruing or resulting to any person, firm or corporation for injury to or death of any person, and for damage to or destruction of any property arising out of or connected with the Contractor's performance of this agreement.

Without limiting the Contractor's indemnification of the City, the Contractor shall provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, the following insurance coverages and provisions:

- A. Prior to commencement of this Agreement, the Contractor shall provide Certificates of Insurance certifying that all coverage as required herein has been obtained and remains in force for the period required by this Agreement. Any required endorsement shall either be attached to the Certificate or certified as issued on the Certificate. All Certificates of Insurance shall be sent to the following address: David L. Swartz, P.E., P.L.S., Chief Executive Officer, California Engineering Company, Inc., 1110 Civic Center Boulevard suite 404, Yuba City, California, 95993.

Contractor shall not proceed with the work or occupancy under this Agreement until it has obtained all insurance required and Certificates of Insurance have been provided to the City. All Certificates of Insurance shall provide that the City will receive thirty (30) days prior written notice of cancellation or major modification before the expiration date.

- B. Should, consistent with the terms of this Agreement, any of the work or premises under this Agreement be sublet, the Contractor shall require each of its subcontractors to provide the insurance required herein, or Contractor may name the subcontractors as additional insureds under its own policies.

C. Insurance Required:

- 1. Comprehensive General Liability Insurance or Commercial General Liability Insurance for bodily injury (including death) and property damage which provides limits of not less than one million dollars (\$1,000,000) each occurrence and written on an occurrence basis. If the insurance has a General Aggregate it must be no less than two million dollars (\$2,000,000). Each type of insurance shall include coverage for Premises/Operations, Products/Completed Operations, Contractual Liability, Broad Form Property Damage, X/C/U Hazards and Personal Injury.

For either type of general liability insurance, coverage shall include the following endorsements:

- a. Additional Insured Endorsement: Insurance afforded by this policy shall also apply to the City of Colusa, and members of the Board of Supervisors of the City of Colusa, the officers, agents and employees of the City of Colusa, individually and collectively, as additional insureds.

- b. Primary Insurance Endorsement: Insurance afforded by the Additional Insured Endorsement shall apply as primary insurance, and other insurance maintained by the City of Colusa, its officers, agents and employees shall be excess only and not contributing with insurance provided under this policy.
 - c. Notice of Cancellation or Change of Coverage Endorsement: Insurance provided by this policy shall not be canceled or changed so as to no longer meet the specified City insurance requirements without thirty (30) days prior written notice of such cancellation or change being delivered to the City of Colusa at the address to which the Certificate of Insurance is sent as specified above.
 - d. Severability of Interest Endorsement: Insurance provided by this policy shall apply separately to each insured who is seeking coverage or against whom a claim is made or a suit brought, except with respect to the policy's limits of liability.
2. Automobile Liability Insurance for bodily injury (including death) and property damage which provides total limits of not less than one million dollars (\$1,000,000) combined single limit per occurrence applicable to all owned, non-owned and hired vehicles.
 3. Workers' Compensation and Employer's Liability Insurance with statutory California Workers' Compensation coverage and Employer's Liability coverage of not less than one million dollars (\$1,000,000) per occurrence for all employees engaged in services or operations under this Agreement.

SECTION 8. MATERIALS

SECTION 8-1. MISCELLANEOUS

8-1.01 SUBSTITUTION OF METRIC MATERIALS AND PRODUCTS. -- Only materials and products conforming to the requirements of the specifications shall be incorporated in the work. When inch-pound (Imperial) system materials and products are not available, and when approved by the Engineer, and at no cost to the City, materials and metric products which are of equal quality and of the required properties and characteristics for the purpose intended, may be substituted for the equivalent materials and products, subject to the following provisions:

- A. Materials and products shown on the plans or in the Special Provisions as being equivalent may be substituted for the metric materials and products specified or detailed on the plans.
- B. Before other non-specified or detailed materials and products will be considered for use the Contractor shall furnish, at the Contractor's expense, evidence satisfactory to the Engineer that the materials and products proposed for use are equal to or better than the materials and products specified or detailed on the plans. The burden of proof as to the quality and suitability of substitutions shall be upon the Contractor and the Contractor shall furnish necessary information as required by the Engineer. The Engineer will be the sole judge as to

the quality and suitability of the substituted materials and products and the Engineer's decision will be final.

- C. When the Contractor elects to substitute non-specified or detailed materials and products, including materials and products shown on the plans or in the Special Provisions as being equivalent, the list of sources of material as specified in Section 6-1.01, "Source of Supply and Quality of Materials," of the Standard Specification shall include a list of substitutions to be made and contract items involved. In addition, for a change in design or details the Contractor shall submit plans and working drawings in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications.

8-2.01 TESTING OF MATERIALS. -- Whenever a reference is made in the specifications to any of the California Test numbers specified below, the corresponding ASTM Designation or AASHTO Designation test numbers may be used to determine the quality of materials.

California Test	ASTM Designation	AASHTO Designation
216	D 1557	T 180
231	D 2922(a)	T 238(a)
203	D 422	T 88
204	D 4318	T 89
		T 90
504	C 231	T 152
518	C 138	T 121
521	C 39	T 22
523	C 293	T 177
	C 78	T 97
533	C 360	--
211	C 131	T 96
	C 535	--

Note:

When ASTM Designation: D2922 or AASHTO Designation: T238 is used, the frequency and area distribution of such tests shall comply with the requirements specified in California Test 231. For each determination of relative compaction by ASTM or AASHTO test methods, laboratory compaction tests per ASTM Designation: D 1557 or AASHTO Designation: T 180 shall be performed, except when the use of previous laboratory maximum dry densities are allowed. Previous laboratory maximum dry densities may be used to determine relative compaction if the material, as determined by the Engineer, is from the same general excavation or plant source and has the same visual characteristics of color, gradation, and soil classification as the previous laboratory maximum dry densities. The use of previous laboratory maximum dry densities will not be permitted for more than 5 working days or for more than 14 determinations of relative compaction.

8-2.02 GENERAL. -- Attention is directed to Section 6, "Control of Materials," of the Standard Specifications.

8-2.03 AGGREGATES. -- Attention is directed to Sections 26-1.02, "Materials," and 39-2.02, "Aggregate," respectively, of the Standard Specifications.

8-2.04 DELETED

SECTION 9. BLANK

SECTION 10. CONSTRUCTION DETAILS

SECTION 10-1. GENERAL

10-1.01 ORDER OF WORK. – Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications.

10-1.02 WATER POLLUTION CONTROL. – Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these Special Provisions.

Water pollution control work shall conform to the requirements in the Construction Contractor's Guide and Specifications of the CALTRANS Storm Water Quality Handbooks, dated April 1997, and addenda thereto issued up to and including the date of advertisement of the project, hereafter referred to as the "Handbook." Copies of the Handbook may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California, 95815, Telephone: (916) 445-3520.

The Contractor shall know and fully comply with the applicable provisions of the Handbook and Federal, State, and local regulations that govern the Contractor's operations and storm water discharges from both the project site and areas of disturbance outside the project limits during construction.

Unless arrangements for disturbance of areas outside the project limits are made by the Department and made part of the contract, it is expressly agreed that the Department assumes no responsibility whatsoever to the Contractor or property owner with respect to any arrangements made between the Contractor and property owner to allow disturbance of areas outside the project limits.

The Contractor shall be responsible for the costs and for liabilities imposed by law as a result of the Contractor's failure to comply with the requirements set forth in this section "Water Pollution Control" including, but not limited to, compliance with the applicable provisions of the Handbook and Federal, State, and local regulations. For the purposes of this paragraph, costs and liabilities include, but are not limited to, fines, penalties, and damages whether assessed against the State or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne

Water Quality Act.

In addition to the remedies authorized by law, an amount of the money due the Contractor under the contract, as determined by the Department, may be retained by the State of California until disposition has been made of the costs and liabilities.

The retention of money due the Contractor shall be subject to the following:

- A. The Department will give the Contractor 30 days notice of the Department's intention to retain funds from partial payments which may become due to the Contractor prior to acceptance of the contract. Retention of funds from payments made after acceptance of the contract may be made without prior notice to the Contractor.
- B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications.
- C. If the Department has retained funds and it is subsequently determined that the State is not subject to the costs and liabilities in connection with the matter for which the retention was made, the Department shall be liable for interest on the amount retained at the legal rate of interest for the period of the retention.

Conformance with the provisions in this section "Water Pollution Control" shall not relieve the Contractor from the Contractor's responsibilities as provided in Section 7, "Legal Relations and Responsibilities," of the Standard Specifications.

10-1.03 PROGRESS SCHEDULE. – A progress schedule will be required for this contract and shall conform to the provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications. The first paragraph of Section 8-1.04 shall be amended to read: "The Contractor shall submit to the Engineer a practical progress schedule at least two (2) working days prior to beginning of work. Full compensation for progress schedule shall be considered as included in the contract lump sum price paid for mobilization and no separate payment will be allowed therefore.

10-1.04 OBSTRUCTIONS. -- Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities," and 15, "Existing Highway Facilities," of the Standard Specifications and these Special Provisions.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workmen and of the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine and toxic or flammable gases; natural gas in pipelines greater than 6 inches in diameter or pipelines operating at pressures greater than 60 psi (gage); underground and overhead electric supply system conductors or cables. Buried conductors or cables may be either directly buried or in duct or conduit which do not have concentric grounded conductors or other effectively grounded metal shields or sheaths.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least two (2) working days prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification center include, but are not limited to, the following:

Underground Service Alert -
Northern California (USA) Telephone: 1(800)642-2444

10-1.05 MOBILIZATION. -- Mobilization shall conform to the provisions in Section 11, “Mobilization,” of the Standard Specifications.

Full compensation for Mobilization shall be made according to the lump sum contract price for the item of work, and no additional compensation will be allowed therefor.

10-1.06 CONSTRUCTION STAKING. – Contractor is responsible for all construction staking and control for this project.

10-1.07 SIGNAGE. -- Construction area signs shall be furnished, installed, maintained, and removed when no longer required in accordance with the provisions in Section 12, “Construction Area Traffic Control Devices,” of the Standard Specifications.

The contractor shall provide two (2) funding signs for the project, one representing the drinking water construction (061002-002) project and a second sign representing the Clean Water Construction Project (D2201019, C-06-8421-110). Signs shall be 8’ wide by 4 ‘ tall and mounted on ¾” exterior grade plywood, semi permanently via wood posts into the ground at the project site entrance and shall be fashioned similarly to below:

Sign 1

Walnut Ranch Water Line Replacement Project
City of Colusa, California



PROJECT CIVIL ENGINEER: California Engineering Company Inc.



CONTRACTOR: _____

Funding for this project has been provided in full or in part by the Drinking Water State Revolving Fund, which may include capitalization funding from the United States Environmental Protection Agency through an agreement with the State Water Resources Control Board.

Sign 2

Walnut Ranch Sewer Line Installation Project
City of Colusa, California



PROJECT CIVIL ENGINEER: California Engineering Company Inc.



CONTRACTOR: _____

Funding for this project has been provided in full or in part under the California's Clean Water State Revolving Fund, which is capitalized through a variety of funding sources, including grants from the United States Environmental Protection Agency and state bond proceeds through an agreement with the State Water Resources Control Board.

Full compensation for construction area signs shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

10-1.08 MAINTAINING TRAFFIC. -- Attention is directed to Sections 7-1.08, "Public Convenience," 7-1.09, "Public Safety," and 12, "Construction Area Traffic Control Devices," of the Standard Specifications.

Full compensation for maintaining traffic shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

10-1.09 EXISTING HIGHWAY FACILITIES. -- The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway

Facilities" of the Standard Specifications and these Special Provisions.

Attention is directed to Section 7-1.06, "Safety and Health Provisions," of the Standard Specifications. Work practices and worker health and safety shall conform to the Cal/OSHA Safety Orders Title 8, of the California Code of Regulations including Section 5158, "Other Confined Space Operations."

SECTION 11. CONTROL OF THE WORK

11-1.01 GENERAL -- Attention is directed to the provisions of Section 5 of the Standard Specifications and the following provisions.

11-1.02 SURVEY MARKERS -- Special attention is called to Section 5.1-07 of the Standard Specifications. In the event of the careless or willful destruction of stakes or marks, the Engineer shall determine the rates for the cost of replacement.

11-1.03 INTENT OF PLANS AND SPECIFICATIONS -- These Specifications, the Plans, the Standard Specifications, and all supplementary documents are essential parts of the contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be cooperative, to describe and to provide for a complete work. Plans shall govern over Standard Specifications, and Technical Specifications shall govern over both Plans and Standard Specifications.

11-1.04 FINAL INSPECTION -- The Contractor shall notify the Engineer in writing of the completion of the work, and the Engineer will promptly inspect the work. The Contractor will be notified in writing of any defects or deficiencies to be remedied. When notified that this work has been completed, the Engineer will again inspect the work and when satisfied that all work has been done in accordance with the contract drawings and these Specifications, he will recommend to the City Council that they formally accept the contract as complete. The completion date, for purposes of computing "Time for Completion" and liquidated damages, if any, will be considered to be the date of Contractor's first written completion notice, provided that, in the Engineer's judgment, the work is substantially complete and operational at that time.

SECTION 12. LEGAL REGULATIONS AND RESPONSIBILITY TO THE PUBLIC

12-1.01 GENERAL -- The Contractor's attention is directed to Section 7 of the Standard Specifications regarding his legal obligations and responsibilities.

12-1.02 LAWS TO BE OBSERVED -- The Contractor shall keep himself fully informed of all existing State and National laws and all municipal ordinances and regulations of the City of Colusa which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

12-1.03 DELETED

12-1.04 PERMITS AND LISCENCES -- The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. There will be no charge for the permits from the City, however the contractor must purchase a business license from the city. These plans and specifications shall function as the encroachment permit for the contractor to perform said work.

12-1.05 INSURANCE -- 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.

MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. Insurance services Office Commercial General liability coverage. (occurrence form CG 0001).
2. Insurance services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).
3. Workers' Compensation Insurance as required by the State of California and Employer's Liability Insurance.

MINIMUM LIMITS OF INSURANCE

Contractor shall maintain limits no less than:

1. General Liability: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
3. Employer's Liability: \$1,000,000 per accident for bodily injury or disease.

DEDUCTIBLES AND SELF-INSURED RETENTION

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

OTHER INSURANCE PROVISIONS

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

1. The City of Colusa, 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, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City of Colusa, 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 of Colusa, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City of Colusa, 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 of Colusa, its officers, officials, employees, agents or volunteers.
4. 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.
5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled 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 Colusa.

ACCEPTIBILITY OF INSURERS

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

VERIFICATION OF COVERAGE

Contractor shall furnish the City of Colusa with original endorsements effecting 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 of Colusa, all endorsements are to be received and approved by the City of Colusa before work commences. As an alternative to the City of Colusa'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.

SUBCONTRACTORS

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate

certificates and endorsements for each subcontractor. All coverage's for subcontractors shall be subject to all of the requirements stated herein.

If the Contractor fails to maintain such insurance, the City of Colusa may take out such insurance to cover any damages for which the City of Colusa 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 the 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.

12-1.06 NO PERSONAL LIABILITY -- Contractor shall identify and hold harmless City and its officers, officials, employees and volunteers from and against all 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 misconduct of the City.

12-1.07 RESPONSIBILITY OF CITY -- The City of Colusa shall not be held responsible for the care or protection of any materials or parts of the work prior to final acceptance, except as expressly provided in these Specifications.

12-1.08 DOMESTIC MATERIALS -- Only such materials shall be used in the performance of this contract as conform to the requirements of Chapter 4 of Division 5 of Title 1 of Government Code of the State of California except as otherwise provided in certain treaties and general trade agreements of the United States.

SECTION 13. WATERING AND DUST CONTROL

13-1.01 DUST CONTROL -- Dust control measures shall be taken in conformance to Section 10 of the Standard Specifications. Contractor shall water the construction site at sufficient intervals to preclude the nuisance of dust caused by the Contractor's operations and/or wind and traffic, at no additional compensation.

SECTION 14. SAFETY - PRECAUTIONS

14-1.01 PRESERVATION OF PROPERTY -- Due care shall be exercised to avoid injury to existing improvements, utility facilities, adjacent property, and roadside trees and shrubbery that are not to be removed or relocated. Concrete surfaces including curbs and sidewalks that are not to be removed shall not be defaced or damaged in any manner, including markings with paint, asphalt over spray, etc. Any such damage or defacement shall be cleaned, repaired, or replaced as necessary to restore such area as nearly as possible to its original condition.

Trees and shrubbery that are not to be removed, and pole lines, fences, signs, markers and monuments, buildings and structures, conduits, pipe lines under or above ground, sewer and water

lines, all facilities and any other improvements or facilities within or adjacent to the work shall be protected from injury or damage, and if ordered by the Engineer, the Contractor shall provide and install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by the Contractor's operations, they shall be replaced or restored at the Contractor's expense, to a condition as good as when the Contractor entered upon the work, or as good as required by the Specifications accompanying the contract, if any such objects are a part of the work being performed under the contract. Damaged sanitary sewer services and storm drain laterals shall be repaired at Contractor's expense, as shown on the detail sheet on the plans. The Engineer may make or cause to be made such temporary or permanent repairs as are necessary to restore to service any damaged facility. The cost of such repairs shall be borne by the Contractor and may be deducted from any monies due or to become due to the Contractor under the contract.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in protecting or repairing property as specified in these Specifications shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

14-1.02 OBSTRUCTIONS -- The location of underground utilities shown on the plans represent the best information available to the City but should be considered as being approximate only. Utility lines may exist that are not as shown on the plans. The exact locations of underground facilities and improvements within the construction area shall be ascertained by the Contractor before using equipment that may damage such facilities or interfere with their service. He will be held liable to the owners of such facilities for any damage or interference with service resulting from his operations.

14-1.03 INTERRUPTION OF SERVICE -- No valves or other controls on existing utility systems shall be operated for any purpose by the Contractor without prior approval of the Engineer and/or the Utility Company.

14-1.04 SAFETY DEVICES -- Sufficient and adequate signs, lights, barricades and cones shall be furnished, placed, and maintained throughout the construction project as may be deemed necessary by the Engineer to adequately protect the public from injury or unnecessary inconvenience due to the construction operations. When traffic is to be interrupted or detoured, flagmen, adequately equipped and instructed, shall be provided by the Contractor as deemed necessary by the Engineer. Payment to the Contractor for all costs incurred by him in conforming to this section and "Maintaining Traffic", below, shall be considered as included in payment for other items of work and no additional special payment will be made therefore.

14-1.05 MAINTAINING OFFICE OPERATIONS -- The Contractor will be required to furnish the City a work schedule sufficiently detailed so that the City may ascertain there from what effect the Contractor's proposed construction program will have on city operations.

The Contractor shall conduct his operation so as to offer the least possible obstruction and inconvenience to the public and office staff, and he shall have under construction no greater amount of work than he can prosecute properly with due regard to the rights of the public.

Spillage resulting from hauling operation along or across a public traveled way shall be removed immediately at the Contractor's expense.

14-1.06 PAYMENT -- Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in Section 14 as specified in these Specifications shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

Walnut Ranch Unit 1, II, And III Waterline Improvement Project Volume 3 Technical Specifications

CITY OF COLUSA

**WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT &
SANITARY SEWER IMPROVEMENTS PROJECT**

LICENSEE RESPONSIBLE FOR SPECIFICATIONS

Contract Documents prepared by or under the direction of the following registered persons:

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INTRODUCTION

This project involves the abandonment of an existing water system, including an existing well, and the installation of new water lines, new services, new meters, and new boxes. The existing water system shall remain in-place and functioning until such time that the new water system installed is operational, tested, disinfected, and flushed. Once the new system has been installed, the existing system shall be abandoned in-place at the locations shown on the Civil plan sheets. Abandonment shall occur by removing sections of water main line and placing blind flange and thrust blocks on the active water main and capping the abandoned water main by placement of a pre-fabricated cap that can be glued or fastened to the abandoned pipeline so that soil and groundwater cannot enter the pipe. The abandoned system shall be sealed.

This project is combined with a sewer line and services installation project. Once the project underground utilities are completed, the contractor will conduct an overlay of the street as described on the civil drawings and herein.

Section 10 CONSTRUCTION MATERIALS

This Section describes various classes and types of materials used in public construction within the City of Colusa. Materials to be used for the work and not included in this section shall be described and specified in the Special Provisions.

10-1 PORTLAND CEMENT

Unless otherwise specified in the Special Provisions, all cement used in concrete shall conform to ASTM C 150 and these Specifications, and shall be Type II, unless otherwise specified herein.

ASTM C 150, Type III, Portland cement shall be used for concrete requiring high early strength where specifically required by the Special Provisions.

Type II and Type III Portland cements shall be "low alkali" containing not more than 0.60 percent by weight of alkalies, calculated as the percentage of Na₂O plus 0.658 times the percentage of K₂O.

When directed by the Engineer, Contractor shall furnish certificates of compliance stating that the cement delivered to the work complies with these Specifications.

10-2 CONCRETE AGGREGATES

Unless otherwise specified in the Special Provisions all concrete aggregates shall conform to ASTM C 33, except that grading requirements shall be as specified in Section 10-5 of these Specifications.

10-3 WATER FOR CONCRETE

Water used for mixing concrete and water used for curing concrete shall be clean, free from oil, acid, alkalies, vegetable matter, or other deleterious matter. No water containing excessive amounts of salts, sulphates, or chlorides shall be used.

10-4 PREFORMED EXPANSION JOINT FILLER

Unless otherwise specified in the Special Provisions, preformed expansion joint filler material shall conform to ASTM D 1751.

10-5 PORTLAND CEMENT CONCRETE

1. Composition:

Portland cement concrete (referred to herein as concrete) shall be composed of Portland Cement, fine aggregate, coarse aggregate, admixtures if used, and water.

Concrete shall be designated as one of the following classes:

Class "A" Concrete shall contain six (6) sacks (564 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of one and one-half inches (1½").

Class "B" Concrete shall contain six (6) sacks (564 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of one inch (1").

Class "C" Concrete shall contain five (5) sacks (470 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of one inch (1").

Class "D" Concrete shall contain five (5) sacks (470 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of three-quarters inch (¾").

When approved by the Engineer, fly ash conforming to ASTM C 618 may be used to replace up to 20 percent of the Portland cement requirement for Class A and B concrete except that fly ash shall not replace Portland cement for concrete used to pave alleys.

Should the quantity of ingredients designed to produce a cubic yard of finished concrete result in a yield greater than one cubic yard, the relative proportions of fine and coarse aggregates shall be adjusted as necessary to maintain a constant quantity of Portland cement in each cubic yard of concrete.

Contractor shall determine the mix proportions for all concrete to be used in the work. A mix design for each class of concrete used in the work shall be submitted to the Engineer for approval at least five (5) working days prior to the proposed concrete being incorporated into the work.

2. Proportioning:

The coarse and fine aggregates shall be combined in such proportions that the percentage composition by weight of the individual and primary sizes of aggregates and of the combined aggregates, as determined by laboratory screens and sieves, will be as follows:

GRADING AND COMPOSITION REQUIREMENTS

Sieve Size	Designation and Nominal Size Percentage					
	Passing Sieves					
	Primary Aggregate Sizes			Combined Aggregate Sizes		
	1½x	1" x	Fine	1½"	1"	¾"
¾"	No. 4	Max.		Max.	Max.	
2"	100	-- 100	--	100	-- 100	--
1½"	88-100	88-100	--	90-100	90-100	-- 100
1"	1-59	37-100	--	50-86	55-100	90-100
¾"	0-17	0-53	-- 100	45-75	45-75	60-80
⅜" No.	0-7	0-16	95-100	38-55	35-60	40-60
4	--	0-6	65-95	30-45	27-45	30-45
No. 8	--	--	45-85	23-38	20-35	20-35
No. 16	--	--	25-55	17-33	12-25	13-23
No. 30	--	--	10-35	10-22	5-15	5-15
No. 50	--	-- 0-2	2-10	4-9	1-5	1-5
No. 100	-- 0-2		0-5	1-3	0-2	0-2
No. 200				0-2		

In addition to the above required grading analysis in the primary aggregate size, the distribution of the fine aggregate sizes shall be such that the difference between the total percentage passing the No. 16 sieve and the total percentage passing the No. 30 sieve shall be between 10 and 40; and the difference between the percentage passing the No. 30 and No. 50 sieves shall be between 10 and 40.

Exact proportions of primary aggregate sizes used in the concrete mix shall be as designated and/or approved by the Engineer. The Engineer may adjust the mix to accommodate changes in aggregates and moisture contents, to improve mixing and placing characteristics and to secure maximum quality of the finished concrete.

3. Mixing:

All concrete mixing shall be done in machine batch mixers of an approved type, having a capacity of not less than a full one-sack batch, unless the quantity to be mixed is, in the opinion of the Engineer, too small to justify the use of a batch mixer. Sacks of cement shall be completely emptied by dumping directly upon other materials previously measured into the mixer, and no splitting of sacks of cement will be allowed, except where Contractor provides suitable equipment approved by the Engineer, the cement may be weighed into the batch from bulk storage.

Mixing shall continue for not less than one (1) minute and in mixers larger than one cubic yard capacity this minimum shall be increased so that minimum mixing time shall not be less than one (1) minute for each cubic yard or part thereof of mixer capacity.

Where transit mixers are used, the mixing period shall conform to the requirements of ASTM C 94.

The total volume of material mixed per batch shall not exceed the rated capacity of the mixer as determined by the standard requirements of the Associated General Contractors of America. All mixing equipment shall be operated at the speeds recommended by the manufacturer, provided, however, that the revolving drum type, except on transit mixers, shall not make less than fourteen (14) or more than eighteen (18) revolutions per minute, and that the rotation rate of transit mixing drums be such as to produce a peripheral speed of approximately two hundred feet (200') per minute. Each paving mixer or stationary mixer shall be equipped with an acceptable timing device.

Should Contractor elect to utilize transit mixing equipment, he shall make adequate advance arrangements for preventing delays in delivery and placing of the concrete. An interval of more than forty-five (45) minutes between any two consecutive batches or loads, or a delivery and placing rate of less than eight (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, 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.

Transit-mixed concrete shall be delivered to the site of the work and discharge shall be completed within ninety (90) minutes after the addition of the cement to the aggregates or before the drum has been revolved 250 revolutions, whichever comes first. In hot weather or under conditions contributing to quick stiffening of the concrete or when the temperature of the concrete is 85 F. or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed forty-five (45) minutes.

A ticket showing volume of concrete and the mix number shall accompany each batch of transit-mixed concrete delivered to the job site. The ticket shall also show the time of day at which the materials were batched.

4. Placing:

The placing of the concrete from a stationary or transit mixer must be done in such a manner as to avoid separation of constituent materials of the concrete. The Engineer shall have the right to stop concrete pouring if the placing of the concrete is improper in this respect.

5. Water Control:

Within the limits hereinafter specified, the amount of water required for the proper consistency of concrete shall be determined by the slump test in accordance with ASTM C 143, except that the ratio of weight of water (water cement ratio) shall not exceed 0.55 unless otherwise approved by the Engineer.

The allowance for slump, unless otherwise directed by the Engineer, shall be as follows:

- a. concrete paving and reinforced structures (heavy sections), not more than three inches (3");
- b. reinforced structures (thin sections) and columns, not more than four inches (4");

concrete placed under water, not less than six inches (6") nor more than eight inches (8").

No additional mixing water shall be incorporated into the concrete during hauling or after arrival at the delivery point, unless authorized by the Engineer. If the Engineer authorizes additional water to be incorporated into the concrete, the drum shall be revolved not less than 30 revolutions at mixing speed after the water is added and before discharge is commenced. If mixing in transit is allowed, the control equipment as above specified shall be at the proportioning plant and there shall be no water added after the mixture

leaves the plant, unless directed by the Engineer.

Contractor shall furnish, without charge, such materials as may be required for making tests of concrete during the progress of the work. Such tests will be made at the expense of the City of Colusa, except that, if tested concrete does not meet required standards, the cost of additional testing shall be borne by Contractor.

No concrete shall be used which has partially set, and no concrete shall be re-tempered or remixed.

10-6 CURING COMPOUNDS FOR CONCRETE

Concrete curing compounds shall be used where specified in these Specifications and the Special Provisions. The compounds shall conform to the requirements of Section 90, "Concrete," of the State Specifications.

10-7 AGGREGATE BASES

Aggregate bases shall conform to the requirements of Section 26 of the State Specifications, except as modified herein.

The combined aggregate shall conform to the grading specified for the three-quarter inch ($\frac{3}{4}$ ") maximum aggregate for Class 2 aggregate base, unless otherwise specified in the Special Provisions. Aggregate may include material processed from reclaimed asphalt concrete, Portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials. The amount of reclaimed material may constitute up to 100% of the total volume of the aggregate used.

Aggregate base will be paid for at the contract price bid per ton or per cubic yard delivered to the job and placed according to the Plans and Specifications. The method used on any work will be shown by the list of quantities on the Proposal and by the type of unit price requested in the Proposal.

The weight of material to be paid for will be determined by deducting from the weight of material delivered to the work, the weight of water in the material, at the time of weighing, as determined by California Test 226, in excess of one (1) percentage point more than the optimum moisture content as determined by ASTM D 1557. The weight of water deducted as provided in this Section will not be paid for.

Quantities of aggregate base to be paid for by the ton or cubic yard will be calculated on the basis of the dimensions shown on the plans adjusted by the amount of any change ordered by the Engineer. No allowance will be made for aggregate base placed outside said dimensions unless otherwise ordered by the Engineer.

The above prices and payment shall be full compensation for furnishing all labor, material, tools, equipment, water, and incidentals, and for all work involved in constructing aggregate base complete in place as shown on the Plans, and as specified in these Specifications and the Special Provisions or as directed by the Engineer.

10-8 AGGREGATE SUBBASE (GRADED)

Aggregate subbase shall conform to the requirements of Section 25 of the State specifications. Aggregate subbase shall be Class 1, unless otherwise approved by the Engineer.

Payment for aggregate subbase shall be per ton of material delivered to the job and placed in accordance with the Plans and Special Provisions. The weight of material to be paid for will be determined by deducting from the weight of material delivered to the work, the weight of water in the material, at the time of weighing, as determined by California Test 226, in excess of one (1) percentage point more than the optimum moisture content as determined by ASTM D 1557. The weight of water deducted as provided in this Section will not be paid for.

The compacting of the material shall be done in accordance with the requirements for placing aggregate bases, as provided in these Specifications. Payment for the material at a price per ton or cubic yard shall constitute full compensation for furnishing, hauling, placing, compacting, and finishing the material including the furnishing of all labor, material, tools, equipment, water and incidentals.

10-9 CEMENT TREATED BASES

Road-mixed and plant-mixed cement treated bases shall conform to the requirements of Section 27 of the State Specifications.

Measurement and payment for cement treated bases shall be in accordance with the State Specifications or may be paid for at a price per ton or cubic yard of cement treated base complete in place as so indicated in the Special Provisions.

10-10 LIME STABILIZATION

Lime stabilization shall conform to the requirements of Section 24 of the State Specifications, except as modified herein.

Unless otherwise specified in the Special Provisions or approved by the Engineer the amount of lime to be added shall constitute a minimum of four and one-half percent (4.5%) by unit weight of the material to be stabilized.

10-11 TREATED PERMEABLE BASES

Treated permeable bases shall conform to the requirements of Section 29 of the State Specifications.

10-12 GEOGRID

Geogrid may be used in areas requiring soil stabilization, such as unsuitable subgrade, or as specified in the Special Provisions, or as approved by the Engineer. Geogrid material shall conform to the following requirements unless otherwise specified in the Special Provisions.

The reinforcement material shall be biaxially oriented geogrid with high tensile modulus in relation to the material being reinforced, with large apertures, thick ribs and junctions to permit significant mechanical interlock with the material being reinforced, and with high continuity of tensile strength through all ribs of the structure.

The geogrid shall maintain its reinforcement and interlock under normal construction practices, and be resistant to both ultraviolet degradation and all forms of biological degradation normally encountered in the material being reinforced. Geotextiles shall not be accepted as reinforcing material. The geogrid shall be installed per the manufacturers recommendations and as specified in the Special Provisions. Grid ties shall be installed a maximum of twenty feet apart and overlaps shall be a minimum of two feet, unless otherwise approved by the Engineer.

The geogrid shall be a single-layer grid that meets the dimensions and properties outlined below. Multi-layered grids fastened together shall not be acceptable. The biaxial geogrids shall conform to the property requirements listed below:

Property	Test Method	Units	Value
Mass	ASTM D 5261-92	oz/sy	8.75 (nom)
Tensile			
Peak Tensile MD (a)	GRI GG1	lb/ft	1,200 (min)
Tensile at 5% MD	GRI GG1	lb/ft	810 (min)
Peak Tensile CMD (b)	GRI GG1	lb/ft	1,970 (min)
Tensile at 5% CMD	GRI GG1	lb/ft	1,340 (min)
Stiffness			
Torsional Stiffness	Corps of Engineers	cm-kg/de g	6.5 (min)
Flexural Stiffness True Initial	ASTM D 1388	mg-cm	750,000 (min)
Modulus in Use MD (c)	GRI GG1 (b)	lb/ft	20,500 (min)
True Initial Modulus in Use CMD (c)	GRI GG1	lb/ft	30,000 (min)
Interlock			
MD dimension	I. D. Calipered	in	0.75-1.50
CMD dimension	I. D. Calipered	in	0.75-1.50
Open area (d)	COE Method Modified	%	70 (min)
Junctions			
Efficiency	GRI GG2	%	90 (min)
Strength MD	GRI GG2	lb/ft	1,080 (min)
Strength CMD	GRI GG2	lb/ft	1,778 (min)

- (a) MD - Machine Direction which is along roll length
CMD - Cross Machine Direction which is across the roll width.
- (b) Resistance to in-plane rotational movement measured by applying a 20 cm-kg moment to the central junction of a 9" x 9" specimen restrained at its perimeter. (U.S. Army Corps of Engineers Methodology).
- (c) True resistance to elongation when initially subjected to a load measured via GRI-GG1 without deforming test materials under load before measuring such resistance or employing "secant" or "offset" tangent methods of measurement so as to overstate tensile properties.
- (d) Percent open area measured without magnification by Corps of Engineers method as specified in CW 02215 Civil Works Construction Guide, November 1977.

Stress transfer capability through junctions (i.e. material overlaps). The value of the Peak Tensile Strength CMD multiplied by Junction Efficiency shall be greater than 1,080 lb/ft.

10-13 BEDDING SAND

Bedding Sand shall have a minimum sand equivalent of 50. Ninety to one hundred percent (90-100%) shall pass the #4 sieve and a maximum of fifteen percent (15%) shall pass the #200 sieve. Sand material shall be of a good quality with a minimum resistivity of 5,000 ohm-cm., a minimum pH of 6.0, a maximum chloride concentration of 300 ppm and a maximum sulfate concentration of 1,000 ppm.

Chemical Analysis	ASTM Method
Conductivity	D 1125
Sulfate	D 516A (SM 4500)
PH	D 2976/D 4972/G 51
Chlorides	D 512C

10-14 CRUSHED SCREENINGS

In these Specifications, in the Special Provisions, or on the Plans, the use of crushed screenings may be specified for certain purposes. When so specified this shall mean a uniformly graded material that is the product of crushing rock or gravel; free of organic matter, oil, alkali, or other deleterious substances and is hard, sound and durable.

Unless otherwise indicated in the Special Provisions, the crushed screenings shall conform to the requirements for Class 1 Permeable Material Type A as set forth in Section 68 of the State Specifications.

10-15 SLURRY CEMENT BACKFILL

Slurry Cement Backfill specified herein for use as trench backfill shall conform to the requirements of Section 19 of the State Specifications and must be a fluid workable mixture of aggregate, cement, and water.

Slurry cement backfill may be used as structure backfill only for pipe culverts.

10-16 CONTROL DENSITY FILL (CDF)

Control Density Fill (CDF), also known as Controlled Low Strength Material (CLSM) or Ready Mixed Flowable Fill (RFF) as processed and distributed by the National Ready Mixed Concrete Association and referred to herein as CDF type materials), may be used as an alternate initial backfill and/or trench backfill material, if approved by the Engineer, or if specified in the Special Provisions. CDF type materials may only be used as an alternate trench backfill material above the initial backfill material if approved in writing by the engineer and the material supplier submits strength tests performed in accordance with either ASTM C31 & C39 or ASTM D4832 that show the mix consistently has a 28-day compressive strength not exceeding 150 psi. Separate approval by the Engineer of CDF type materials as specified herein is not required for filling abandoned pipelines.

Hand Excavatable: Material shall be a hand excavatable mixture of cement, aggregate, entrained-air admixture, and water mixed in accordance with ASTM C 94. The 28-day compressive strength shall not exceed 150 psi unless otherwise directed or approved in writing by the Engineer when used for trench

backfill above the initial backfill zone.

Flowable: Material shall be flowable with a high slump, non-segregating consistency that readily flows and fills voids, congested areas, difficult to reach places, and that may additionally be used for pipe abandonment, structure backfill, and structure cavity fill as directed.

Rapid Set: Material shall obtain early strength gain, to allow traffic load or other live loads on the fill in less than one (1) day after placing the material.

Cement: Shall be type I or II in accordance with ASTM C 150. Mix designs consisting of up to equal parts cement and Type F pozzolan conforming to ASTM C618 may be submitted for consideration.

Pozzolan: Shall be added to improve flowability and shall be type F in accordance with the requirements of ASTM C 618.

Aggregate: Coarse aggregate, if used, shall consist of well graded mixture of crushed rock with a maximum size aggregate of $\frac{3}{8}$ inch. 100% shall pass the $\frac{1}{2}$ -inch sieve. Not more than 30% shall be retained by the $\frac{3}{8}$ inch sieve and not more than 12% shall pass the number 200 sieve. Mix designs consisting of sand only with no coarse aggregate may be submitted for consideration. All aggregate shall be free from organic matter and not contain more alkali, sulfates, or salts than the native materials at the site of work.

Admixtures: Air entrainment admixture shall be added (minimum of 8%, maximum of 20%) to improve workability in accordance with ASTM C 260.

Water: Shall be potable, clean, and free from silty organic matter, alkali, salts, or other impurities.

Compressive Strength: The minimum 28 day compressive strength shall be 20 psi and the maximum shall be 150 psi.

Mixing, transporting and placing CDF type materials shall be in accordance with ACI 304 and ACI 304.6R. Prior to placement, the trench shall be free of loose soil and the trench bottom shall be stable and non-yielding with no excess moisture. The pipe haunch areas shall be clear so that the CDF type material will readily flow around the pipe. Place CDF type material simultaneously on both sides of the pipe to minimize potential lateral displacement of the pipe. Also, pipe sections may need to be secured against floating during CDF type material placement, or place the material in lifts to reduce the potential for flotation. Commence placement of granular trench backfill above CDF type initial backfill only when overlying material placement and compaction will not cause deformation of the initial backfill.

10-17 CLEAN CRUSHED ROCK

In these Specifications, on the Plans, or in the Special Provisions, the use of clean crushed rock may be specified for certain purposes. When so indicated on the Plans or in the Special Provisions, a clean crushed rock of the type indicated shall be provided which is the product of crushing rock or gravel.

Clean crushed rock shall have a minimum Cleanliness Value of sixty (60) as determined by California Test 227, and the portion of the material which is retained on the $\frac{3}{8}$ -inch sieve shall contain at least fifty percent (50%) of particles having three (3) or more fractured faces. The percentage composition by weight of clean crushed rock shall conform to the following gradations for the Type specified.

% Passing Sieves				
Sieve Size	Type A	Type B	Type C	Type D
2"	--	--	--	100
1½"	--	--	100	--
1"	--	100	90-100	--
¾"	100	70-100	30-60	0-17
½"	90-100	30-60	0-20	--
⅜"	20-60	0-20	0-6	0-7
No. 4	0-15	0-5	0-5	--
No. 200	0-2	0-2	--	0-2

10-18 ASPHALT BINDERS AND ASPHALTIC EMULSIONS

Asphalt binders and asphaltic emulsions as required by these Specifications or by the Special Provisions shall mean respectively the asphalt binders as specified in Section 92 of the State Specifications and asphaltic emulsions as specified in Section 94 of the State Specifications.

10-26 WATER PIPE – Distribution (12 inch diameter & smaller)

Water Distribution System pipe shall be of the material type as indicated on the Plans or specified in the Special Provisions and shall comply with AWWA standards and NSF/ANSI Standard 61. All pipe shall be the regular product of a firm which has successfully manufactured comparable pipe for at least three (3) years.

Unless otherwise directed or approved:

- 12-inch diameter buried pipe shall be ductile iron only, and
- 12-inch diameter and smaller pipes placed on bridges shall be liquid-epoxy lined and coated welded steel per AWWA C200 and AWWA 210.

1. Ductile Iron Pipe

All ductile iron pipe shall conform to the following AWWA Standards as listed below:

- a. AWWA C 104 (ANSI A21.4), "Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water," if cement-mortar lined.
- b. AWWA C 111 (ANSI A21.11), "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings."
- c. AWWA C 150 (ANSI A21.50), "Thickness Design of Ductile-Iron Pipe."

- d. AWWA C 151 (ANSI A21.51), "Ductile-Iron Pipe, Centrifugally Cast, for Water."

Pipe shall comply with the following requirements:

- a. Size – 4, 6, 8, 12 inch diameter only
- b. Laying Condition – Type 5
- c. Minimum Depth of Cover – Three (3) feet for improved; four and one-half (4 -1/2) feet for unimproved
- d. Working Pressure-150psi
- e. Laying Length – Minimum eighteen (18) foot nominal lengths with allowable trim pipe lengths in accordance with AWWA C 151 and special shorter lengths provided as required by the drawings.
- f. Joints – Push on or mechanical
- g. Restrained Joints – Bolted flanged connections, push-on locking gasket such as "Field-Lok" gaskets as manufactured by U.S. Pipe, push-on joint restraint such as "TR-Flex" as manufactured by U.S. Pipe, wedge action joint mechanism such as "Megalug" as manufactured by EBAA Iron, Inc. or approved equal.
- h. Gasket Lubricant – Minimum required plus 10% additional
- i. Pressure Class-350
- j. Linings–Standard thickness of cement w/ asphalt seal coat. Coatings–Minimum one (1) mil thick petroleum asphaltic material.
- k. Certification by Manufacturer Required

2. Polyvinyl Chloride Pipe – TO BE USED FOR THIS BID

All polyvinyl chloride pipe in sizes ranging from four through eight inch (4"-8") shall conform to AWWA C 900 "Polyvinyl Chloride (PVC) Pressure Pipe," or AWWA C 909 "Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe". Pipe shall be manufactured with cast iron outside diameters (CIOD) for all sizes.

Pipe shall comply with the following requirements:

- a. Size – 4, 6, 8, 12 inch diameter only
- b. Class 150
- c. Dimension Ratio – 18
- d. Laying Length – 20 feet
- e. Joints – Integral bell and spigot joints conforming to the requirements ASTM D 3139 with factory supplied elastomeric gaskets meeting the requirements of ASTM F 477.
- f. Restrained Joints – Bolted flanged connections, Wedge action joint mechanism such as "Megalug" as manufactured by EBAA Iron, Inc. or approved equal.

- g. Gasket Lubricant—Minimum required plus 10% additional
- h. Each pipe length shall be marked showing the nominal pipe size and

O.D. base, the AWWA pressure class, the AWWA specification designation, and the seal of the testing agency that verified the suitability of the material.

10-27 WATER PIPE FITTINGS – Distribution (12 inch diameter & smaller)

Water pipe fittings shall be of the material type as indicated on the Plans or specified in the Special Provisions and comply with AWWA standards and AWSI

61. All fittings shall be the regular product of a firm which has successfully manufactured comparable fittings for at least three (3) years.

All water pipe fittings shall be Ductile Iron and shall conform to the following AWWA Standards:

1. AWWA C 104 (ANSI A21.4), "Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water," if cement-mortar lined.
2. AWWA C 110 (ANSI A21.10), "Ductile-Iron and Gray-Iron Fittings for Water."
3. AWWA C 111 (ANSI A21.11), "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings."
4. AWWA C 153 (ANSI A21.53) "Ductile-Iron Compact Fittings for Water Service."
5. AWWA C 116 (ANSI A21.16) "Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior surfaces of the Ductile-Iron and Gray-Iron Fittings for Water Supply Service," if fusion-bonded epoxy lined or coated.

Fittings shall comply with the following requirements:

1. Pressure Rating – 250 psi minimum.
2. Coatings – Exterior: Minimum one (1) mil thick petroleum asphaltic material coated. Interior: Lined with standard thickness cement and asphaltic seal coated. Or, exterior and interior: Minimum eight (8) mil thick fusion bonded epoxy coated.
3. Joints – Push-On, mechanical, or flange
4. Certification by manufacturer
5. Dimensions – AWWA C 153 Compact Fittings are approved.
6. Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.
7. Rubber gaskets for flanged joints shall be full faced with a thickness of eight of an inch ($\frac{1}{8}$ "). The material used for the rubber gaskets shall be hardness (Shore A) 70 to 85 suitable for a minimum of one hundred and fifty pounds per square inch (150 psi), cold water service.

10-28 WATER PIPE – Transmission (greater than 12 inch diameter)

Water Transmission System pipe shall be of the material type as indicated on the Plans or specified in the Special Provisions and comply with AWWA standards and ANSI 61. All pipe shall be the regular product of a firm which

has successfully manufactured comparable pipe for at least three (3) years. Pipe shall conform to the following requirements:

1. Welded Steel Pipe (WSP)

All welded steel pipe shall conform to the following AWWA Standards:

- a.** AWWA C 200, "Steel Water Pipe – 6 in. and larger."
- b.** AWWA M 11, "Steel Pipe – A Guide for Design and Installation" except as modified herein.
- c.** AWWA C 205, "Cement-Mortar Protective Lining and Coating for Steel Water Pipe – 4 in. and Larger – Shop Applied."

Pipe shall comply with the following requirements:

- a.** Pipe shall be designed for one hundred and fifty pounds per square inch (150 psi) working pressure with an additional seventy-five pounds per square inch (75 psi) allowance for surge. Pipe design shall be in accordance with AWWA M 11 to withstand the simultaneous application of external earth loads, HS-20 live load and internal pressures. The minimum steel cylinder thickness shall be ten (10) gauge. Drawings shall be submitted to the Engineer for approval and shall include the following:
 - i.** Pipeline layout showing stations and elevations;
 - ii.** Details of standard pipe, joints, specials and fittings;
 - iii.** Calculations for pipe design field welded joint restraint and fittings reinforcement;
 - iv.** Details of joint bonding and field welded joint restraint calculations.
- b.** The nominal diameter or inside diameter of the pipe and other fabricated steel sections as shown on the plans is the clear diameter of the lined pipe after the application of the interior mortar lining.
- c.** Each piece of pipe shall be hydrostatically tested and the stress in the pipe during testing shall not be less than seventy-five percent (75%) of the steel minimum yield strength.
- d.** Minimum Depth of Cover shall be three feet (3') in improved and four and a half feet (4½') in unimproved areas.
- e.** Laying Length – thirty-two to fifty feet (32'-50'), depending on the shop practice of the manufacturer or fabricator, unless otherwise required by the Contract Documents. Sufficient short pieces shall be provided to allow for two foot (2') adjustments within each one-half mile of straight pipe.
- f.** Pipe End Finish – The end finish of individual lengths of pipe to be provided under these Special Provisions shall be one of the following types, unless otherwise indicated on the Plans:
 - i.** Bell and spigot pipe ends for joints with rubber gaskets.
 - a.** Bell and spigot pipe ends for field welded joints.
 - b.** Plain-ends fitted for butt straps for field welded joints.

- iv. Plain-ends fitted with flanges.
- v. Plain-ends for mechanically coupled field joints.

The types of joints proposed to be used shall have been thoroughly tested for water leaks at the design pressures. The Engineer may require Contractor to furnish a record of experience in installing the types of joints for comparable sizes of pipe called for on the Plans. Details of the type of pipe joints proposed to be used shall be included with the shop drawings and lay sheets submitted for the pipe.

Cement mortar lining and coating for WSP shall conform to AWWA C 205. Field joints shall be lined and coated to match pipe in accordance with AWWA C 205.

Bell and Spigot Joints with Rubber Gaskets for WSP shall employ joint rings (Carnegie rings) and shall be designed and fabricated to accommodate a rubber O-ring gasket seal in accordance with AWWA C 303.

The field welding of WSP with bell and spigot joint rings (Carnegie rings) or lap joints shall conform to Standard Drawing W-903. Lap joints shall conform to AWWA C 200. Field welded butt-strap joints shall typically only be used for closure pieces and shall conform to Standard Drawing W-904. The ends of pipes to be fitted with butt straps for field welded joints shall conform to AWWA C 200.

When field conditions warrant and with the approval of the Engineer, straight butt strap welded joints may be used for directional changes in pipe alignment of up to five (5°) degrees.

WSP pipe flanges shall conform and be fitted to plain-end pipe in accordance with AWWA C 207, Class D, and AWWA C 200.

Rubber gaskets for flanged joints shall be full faced with a thickness of eight of an inch ($\frac{1}{8}$ "). The material used for the rubber gaskets shall be hardness

(Shore A) 70 to 85 suitable for a minimum of one hundred and fifty pounds per square inch (150 psi), cold water service.

Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.

WSP ends for mechanically coupled field joints shall be plain and conform to AWWA C 200 and these Standards Specifications. Mechanically coupled joints shall conform to the material, dimensions, and tests of AWWA C 219.

All plain-end pipe joined by flexible couplings shall be fitted with stiffener rings welded to the exterior pipe surface in a plane perpendicular to the axis of the pipe.

Stiffener rings shall have minimum dimensions of three eights inch ($\frac{3}{8}$ ") thick by three inches (3") in width. Stiffener rings that are to be integral with a joint harness shall be suitably increased in thickness and reinforced with plate gussets to adequately withstand the thrust from adjacent fittings. Stiffener rings and harness rings or lugs shall be installed at the pipe manufacturing or fabrication shop. Material for stiffener rings and plate gussets shall be carbon steel meeting the requirements of ASTM A 36 or ASTM A 283, Grade D.

All mechanically coupled field joints shall be encased with eight (8) mil minimum thickness polyethylene material.

Restrained Joints for WSP transmission lines shall conform to the requirements set forth in AWWA M 11, "Steel Pipe - A Guide for Design and Installation." Joints shall be one of the following types:

- a. Lap welded slip joint
- b. Double welded butt strap joint
- c. Flanged and bolted – Flanges shall be in accordance with AWWA C 207 Class D for operating pressures to one hundred and fifty pounds per square inch (150 psi) and surge pressures to two hundred and twenty five pounds per square inch (225 psi).
- d. Mechanical coupling – Mechanical couplings shall be as specified in section 10-29 of these Standard Specifications and shall be harnessed for the maximum pressure in accordance with AWWA M 11.
- e. Carnegie end rings restrained by means of welding the bell and spigot ring

Dimensions for standard and special fittings including tees, wyes, crosses, bends and elbows, reducers, flanged side and bottom outlets, access manholes, etc. shall conform to AWWA C 208. Materials and fabrication of standard and special fittings shall conform to AWWA C 200. All fittings shall be designed to have a strength at least equal to that of the adjacent straight pipe. Flanged outlets shall be designed in accordance with the AWWA Design Manual M 11.

The required transverse steel area in all welded steel pipe fittings shall be provided by the steel cylinder. The length of reducers shall not be less than the diameter of the largest end.

Cement mortar lining and coating of fittings shall conform to the applicable sections of AWWA C 205 and these Standard Specifications.

2. Concrete Cylinder Pipe (CCP)

All concrete cylinder pipe shall conform to the following:

- a. AWWA C 303, "Concrete Pressure Pipe, Bar-Wrapped, Steel- Cylinder Type."

- b.** AWWA Manual M 9 "Concrete Pressure Pipe" except as modified herein.

Pipe shall comply with the following requirements:

- a.** Pipe shall be designed for one hundred and fifty pounds per square inch (150 psi) working pressure with an additional seventy-five pounds per square inch (75 psi) allowance for surge. Pipe shall be designed in accordance with ANSI/AWWA C 303, and AWWA Manual M9 to withstand the simultaneous application of external earth loads, HS-20 live load and internal pressures. Drawings shall be submitted to the Engineer for approval and shall include the following:
- i.** Pipeline layout showing stations and elevations;
 - ii.** Details of standard pipe, joints, specials and fittings;
 - iii.** Calculations for pipe design field welded joint restraint and fittings reinforcement;
- iii.** Details of joint bonding and calculations.
- b.** The cylinders shall be true right cylinders formed from one piece of sheet or coil steel. Field circumferential butt welds are not acceptable.
 - c.** Minimum steel cylinders shall be ten (10) gage.
 - d.** The nominal diameter or inside diameter of the pipe and other fabricated steel sections as shown on the plans is the clear diameter of the lined pipe after the application of the interior mortar lining
 - e.** Laying Length – thirty two to forty feet (32'- 40') for concrete cylinder pipe depending on the shop practice of the manufacturer or fabricator, unless otherwise required by the Contract Documents. Sufficient short pieces shall be provided to allow for two foot (2') adjustments within each one-half mile of straight pipe.
 - f.** Pipe End Finish - The end finish of individual lengths of CCP to be provided under these Standard Specifications shall be one of the following types, unless otherwise indicated on the Plans:
 - i.** Bell and spigot pipe ends for joints with rubber gaskets.
 - ii.** Bell and spigot pipe ends for field welded joints.
 - iii.** Plain-ends fitted for butt straps for field welded joints.
 - iv.** Plain-ends fitted with flanges.
 - v.** Plain-ends for mechanically coupled field joints.

The types of joints proposed to be used shall have been thoroughly tested for water leaks at the design pressures. The Engineer may require Contractor to

furnish a record of experience in installing the types of joints for comparable sizes of pipe called for on the Plans. Details of the type of pipe joints proposed to be used shall be included with the shop drawings and lay sheets submitted for the pipe.

The exposed inside and outside surfaces of the joints, flanges, reinforcement lugs, and all other exposed steel shall be protected from the formation of rust with an AWWA approved coating applied at the time of manufacture or fabrication of the pipe.

The CCP ends shall employ joint rings (Carnegie rings) and shall be designed and fabricated to accommodate a rubber O-ring gasket seal in accordance with AWWA C 303.

The field welding of CCP with bell and spigot joint rings (Carnegie rings) or lap joints shall conform to these Standard Specifications. Lap joints shall conform to AWWA C 200.

Field welded butt-strap joints for CCP shall be typically used for closure pieces and shall conform to Standard Drawing W-904. The ends of pipes to be fitted with butt straps for field welded joints shall conform to AWWA C 200.

When field conditions warrant and with the approval of the Engineer, straight butt-strap welded joints may be used for directional changes in pipe alignment of up to five degrees (5°).

Steel pipe flanges for CCP shall conform and be fitted to plain-end pipe in accordance with AWWA C 207, Class D, and AWWA C 200.

Rubber gaskets for flanged joints shall be full faced with a thickness of eighth of an inch ($\frac{1}{8}$ "). The material used for the rubber gaskets shall be hardness (Shore A) 70 to 85 suitable for a minimum of one hundred and fifty pounds per square inch (150 psi), cold water service.

Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.

CCP ends for mechanically coupled field joints shall be plain and conform to AWWA C 200 and these Standard Specifications. Mechanically coupled joints shall conform to the material, dimensions, and tests of AWWA C 219.

All plain-end pipe joined by flexible couplings shall be fitted with stiffener rings welded to the exterior pipe surface in a plane perpendicular to the axis of

the pipe. Stiffener rings shall have minimum dimensions of three eighths inch ($\frac{3}{8}$ ") thick by three inches (3") in width.

Stiffener rings that are to be integral with a joint harness shall be suitably increased in thickness and reinforced with plate gussets to adequately withstand the thrust from adjacent fittings. Stiffener rings and harness rings or lugs shall be installed at the pipe manufacturing or fabrication shop. Material for stiffener rings and plate gussets shall be carbon steel meeting the requirements of ASTM A 36 or ASTM A 283, Grade D.

All mechanically coupled field joints shall be encased with eight (8) mil minimum thickness polyethylene material.

Restrained Joints for CCP transmission lines shall conform to the requirements set forth in AWWA M 9, "Concrete Pressure Pipe." Joints shall be one of the following types:

- a. Lap welded slip joint
- Double welded butt strap joint
- c. Flanged and bolted – Flanges shall be in accordance with AWWA C 207 Class D for operating pressures to one hundred and fifty pounds per square inch (150 psi) and surge pressures to two hundred and twenty five pounds per square inch (225 psi).
- d. Mechanical coupling – Mechanical couplings shall be as specified in section 10-29 of these Standard Specifications and shall be harnessed for the maximum pressure in accordance with AWWA M 9.
- e. Carnegie end rings restrained by means of welding the bell and spigot ring

Standard and special fittings for CCP shall include adapters, reducers, bends, tees, wyes, connections to mainline valves, closures, beveled pipe, restrained-joint pipe, short pipe, and pipe with outlets required for branches, access manholes, air valves, and blow-offs. The fabrication and manufacture of standard and special fittings shall conform to the requirements of Section 4 of AWWA C 303.

3. Ductile Iron Pipe (DIP)

All ductile iron pipe shall conform to the following:

- a. AWWA C 104 (ANSI A21.4), "Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water."
- b. AWWA C 110 (ANSI A21.10), "Ductile Iron and Gray Iron Fittings for Water."
- c. AWWA C 111 (ANSI A21.11), "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings."
- d. AWWA C 150 (ANSI A21.50), "Thickness Design of Ductile-Iron Pipe."
- e. AWWA C 151 (ANSI A21.51), "Ductile Iron Pipe, Centrifugally Cast, for Water."
- f. AWWA C 153 (ANSI A21.53), "Ductile-Iron Compact Fittings for Water Service."
- g. AWWA M41, "Ductile-Iron Pipe and Fittings." DIP shall also comply with the following requirements:
 - a. The minimum wall thickness design shall be determined using AWWA C 150/A21.50.
 - b. The design working pressure shall be one hundred and fifty pounds per square inch (150 psi) minimum.

- c.** When determining the wall thickness of the pipe, the following shall be considered:
 - i.** internal pressure, including static and transient pressure;
 - ii.** external pressure, including trench loading and earth fill; and
 - iii.** practical considerations for handling, shipping, lining and coating, or similar operations.
- d.** Nominal inside diameter shall not be less than the design diameter or size specified.
- e.** Hydrostatic testing shall be made before the application of cement- mortar lining.
- f.** Ductile iron pipe laying lengths shall be furnished in standard lengths suited to the manufacturer's shop practice and in accordance with AWWA C 151/A21.51. Sufficient field pieces shall be provided to allow for a two foot (2') adjustment - within each one-half mile of straight pipe.

All DIP and fittings shall be cement-mortar lined in accordance with AWWA C 104/A21.4.

Pipe shall be lined by a centrifugal process. Fittings shall be lined by a projection method or by hand application.

The entire ductile iron pipeline including fittings, valves and appurtenances shall be encased in polyethylene material with a minimum thickness of eight (8) mil. The polyethylene shall conform to and be installed in accordance with AWWA C 105/A21.5.

The end finish of individual lengths of DIP to be provided under these Standard Specifications shall be one of the following types, unless otherwise indicated on the Plans:

- a.** Bell and spigot pipe ends for joints with rubber gaskets.
- b.** Mechanically coupled field joints.
- c.** Plain-ends fitted with threaded flanges.

The types of joints proposed to be used shall have been thoroughly tested for water leaks at the design pressures. The Engineer may require Contractor to furnish a record of experience in installing the types of joints for comparable sizes of pipe called for on the Plans. Details of the type of pipe joints proposed to be used shall be included with the shop drawings and lay sheets submitted for the pipe.

The exposed inside and outside surfaces of the pipe joints shall be protected from the formation of rust with an AWWA approved coating applied at the time of manufacture of the pipe.

Bell and spigot joints with rubber gaskets for DIP shall conform to the requirements of AWWA C 111/A21.11 regarding push-on joints.

Mechanically coupled field joints, bolts and nuts for DIP shall conform to the requirements of AWWA C 111/A21.11. All mechanically coupled field joints shall be encased with a minimum eight (8) mil thick polyethylene.

Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.

Ends fitted with threaded flanges for DIP shall conform to the requirements of AWWA C 115/A21.15.

Pipe ends fitted with restraining rings for DIP shall receive approval by the Engineer prior to the installation of the pipe. It is suggested that test documents from the manufacturer's testing documentation be submitted with the required pipe lay sheet submittals.

Restrained Joints for Ductile Iron transmission mains shall be one of the following types:

- a. Flanged and bolted – Flanges shall be in accordance with AWWA C 110 or AWWA C 153 for operating pressures to one hundred and fifty pounds per square inch (150 psi) and surge pressures to two hundred and twenty five pounds per square inch (225 psi).
- b. Push-on locking gasket such as "Field-Lok" gaskets as manufactured by U.S. Pipe.
- c. Push-on joint restraint such as "TR-Flex" as manufactured by U.S. Pipe.
- d. Wedge action joint mechanism such as "Megalug" as manufactured by EBAA Iron, Inc. or approved equal.
- e. Mechanical coupling – Mechanical couplings shall be as specified in section 10-29 of these Standard Specifications.

Fittings and openings for DIP shall conform to the requirements of AWWA C 110/A21.10. Where outlets are required, tees shall be used, with the outlet branch being flanged.

Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.

10-29 BUTTERFLY VALVES & FLEXIBLE COUPLINGS (Transmission)

1. General

Butterfly valves shall be short bodied, tight closing, and rubber-seated with flanged ends. Butterfly valves shall comply with the requirements of AWWA C 504, Class 150B and these Standard Specifications. Valves shall be bubble-tight at rated pressures in either direction, and shall be satisfactory for

throttling service and/or operation and for valve operation after long periods of inactivity. All butterfly valves shall be Triton XR or Groundhog valves as manufactured by the Henry Pratt Company, Lineseal III valves as manufactured by Mueller Company, or approved equals.

Valve discs shall rotate ninety degrees (90°) from the full open position to the tight shut position. The valves shall allow for an angular mis-position of the disc up to one degree (1°) off center without leakage. The manufacturer shall have successfully manufactured tight-closing, rubber seated AWWA butterfly valves for a period of at least five (5) years with local installation list.

Butterfly valves shall be provided with manual actuators. The actuators shall provide sufficient output torque to operate the valves at a shutoff pressure of one hundred and fifty pounds per square inch (150 psi) and at a maximum flow velocity of sixteen feet per second (16 fps) when opening or closing. In no case shall the torque rating be less than required for Class 150B valves per AWWA C

504. The Engineer may request Contractor to provide torque and actuator calculations to verify compliance.

2. Butterfly Valve Materials and Construction

Materials for all parts and components shall be suitable for the intended use of the valve considering strength, ductility and corrosion protection. All materials shall conform to the requirements of AWWA C 504. Valves shall comply with NSF/ANSI 61.

Valve Disc: Valve discs shall be constructed from ductile iron ASTM A 536 for valve sizes thirty inches (30") and larger, from cast iron ASTM A 126, Class B for valve sizes less than twenty inches (20"), or from cast iron ASTM A 48/A 48M

Class 40 for twenty-four inch (24") valves. Valve discs shall be furnished with 316 stainless steel seating edge, ground smooth and polished to mate with the rubber seat on the body. The disc shall not have any hollow chambers that can entrap water or ribs transverse to the flow stream. All surfaces shall be visually inspected and measured to assure all structural members are at full design parameters.

Valve Seat: All seats shall be Buna-N rubber in the body design. Valves twenty inches (20") and smaller shall have bonded seats that meet the test procedures of ASTM D 429 Method B. Seats for valve sizes twenty-four inches (24") and larger shall be retained in the valve body by mechanical means without retaining rings, segments, screws or hardware of any kind in the flow stream. Seats shall be a full three hundred and sixty degrees (360°) without interruption and have a plurality of grooves mating with a spherical disc edge

seating surface. Valve seats shall be field adjustable around the full three hundred and sixty degrees (360°) circumference and replaceable without dismantling operator, disc or shaft and without removing the valve from the line. Seats attached to the valve disc are not allowed.

Valve Shaft: All shafts shall be turned, ground and polished and constructed of 18-8 Type 304 stainless steel conforming to ASTM A 276. Valve shaft seals shall consist of self-adjusting "V" type packing capable of replacement without removal of the valve shaft.

Valve Bearings: All valves shall be fitted with non-metallic sleeve-type bearings. Bearings shall be corrosion resistant and self-lubricating. Bearing load shall not exceed one-fifth of the compressible strength of the bearing or shaft material. Non-adjustable thrust bearings designed to center the valve disc shall be furnished with the valve assembly and be preset at the factory.

Manual Valve Actuator: Manual valve actuators shall be of the traveling nut or permanently lubricated worm gear reducer type suitable for continuously buried and submerged use. All actuator gearing shall be totally enclosed in a rugged case that is both water tight and lubricant tight.

Actuators shall be fully grease packed and totally sealed by gaskets, O- rings, or similar means before shipment. A gasketed removable cover plate shall be provided for maintenance purposes. Actuators shall have a built in packing leak bypass to eliminate possible leakage into the actuator housing. Stuffing boxes are not acceptable.

Manual valve actuators shall be capable of withstanding an input torque of four hundred and fifty foot-pounds (450 ft-lbs) against the open and closed

stops. The valve disc shall be moved through its full stroke with a minimum number of turns of the operating shaft consistent with the torque limitations.

The valve actuator mechanism shall be self-locking and shall hold the valve disc rigidly in any intermediate position between full open and fully closed without creeping or fluttering. Machining and fitting of all parts shall be held to close tolerances to reduce backlash and to keep lost motion to a minimum.

The actuator shall be equipped with a standard water works two inch (2") square wrench nut. The actuator shall open the valve left (counterclockwise), and shall be furnished with a position indicator if installed in a vault. Provide valve operating nut extensions in accordance with Standard Drawing 8-5 in City of Colusa Improvement Standards when installed

valve operating nut is in excess of thirty inches (30") below finish grade.

Valve Exterior Coating: The exterior of the butterfly valves shall be shop coated with two part liquid epoxy per AWWA C550. The coating shall have a nominal thickness of eight (8) mils. Machine finished bearing surfaces shall not be painted. Exposed machined surfaces shall be covered with slush grease or other readily removable protective coating before shipment.

Valve Interior Coating: All interior ferrous surfaces of the butterfly valves, including the disc, which are exposed to fluid flow shall be factory coated with a two part liquid epoxy coating conforming to AWWA C 550 for potable water. The coating shall have a nominal thickness of eight (8) mils.

With no exceptions, all damage to coating incurred during shipping shall be repaired with the original coating material only. The coating shall be NSF/ANSI 61 certified.

Bolts and Nuts: Bolts connecting valves to main shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3. Bolts that thread into the valve body shall have the same thread pitch as the valve body.

3. Flexible Couplings

Flexible couplings suitable for water main applications shall be as manufactured by Smith Blair, Inc., Series 411 or 413, or Dresser Industries, Inc., Style 38 or 162, or an approved equal. The steel middle ring of the flexible coupling shall be lined and coated with fusion bonded epoxy per AWWA C 213.

The flexible couplings shall be installed with provision for thrust restraint ties attached to the water main pipe. The thrust restraint ties on the pipe shall be welded lugs, lugs cast integrally with the pipe, or friction collars. Anchor

studs placed perpendicular to the long axis of the pipe are unacceptable. Resistance to hydraulic thrust shall be adequate to sustain a force developed by a test pressure of two hundred and twenty five pounds per square inch (225 psi).

Flanged coupling adapters shall be Smith Blair 913, Romac Style FC400 or equal for steel piping with insulating gasket. Couplings shall be provided with thrust ties attached to the pipe with welding lugs, cast-in-place lugs, or friction collars. Lugs shall have a minimum thickness equal to that of adjacent flange and shall have holes the same size as those on the flange. Anchor studs placed perpendicular to the longitudinal axis of the pipe are unacceptable.

10-30 APPURTENANCES

i. Air Vacuum and Release Valves

Combination air vacuum and release valves for water transmission mains shall be two (2") or four inches (4") in size. The air vacuum and release valves shall have cast iron bodies and be equal to APCO Valve and Primer Corporation, Model 145C for the two-inch (2") valve and Model 149C for the four-inch (4") valve.

ii. Blind Flanges and Dished Heads

Blind flanges and dished heads for water transmission mains shall conform to the requirements of AWWA C 207 and NSF/ANSI 61. Design pressure classification shall be equivalent to that of the immediately adjacent pipe, valve, or appurtenance. Blind flanges and dished heads shall be epoxy coated. The epoxy coating shall have a minimum thickness of eight (8) mils and shall conform to the requirements of AWWA C 213. Temporary blind flanges and dished heads that are used during construction of the transmission main do not need to be coated when approved by the Engineer.

10-31 FIRE HYDRANTS

All Standard (Low Risk) fire hydrants shall be as specified herein unless otherwise indicated on the Plans or Special Provisions.

- 1.** All fire hydrants shall conform to AWWA C 502 for Dry-Barrel Fire Hydrants as currently in effect or amended and ANSI 61. An Affidavit of Compliance as per Section 1.7 of AWWA C 502. Standard shall be furnished with all

hydrants or groups of hydrants. The Certificate of Compliance shall provide assurance that all material and manufacturing requirements have been met and head losses are within specified limits.

- 2.** Table 3 of AWWA C 502 is amended to limit loss of head (drop in pressure) to a maximum of three pounds per square inch (3 psi) at a flow rate of one thousand gallons per minute (1000 gpm) through one four and one-half inch (4½") diameter pumper outlet nozzle.
- 3.** Markings-All fire hydrants shall be clearly and permanently marked so as to be readily discernable and legible after hydrants have been installed. Such marking should include:

- a. Name of manufacturer
 - b. Model name or number
 - c. Size of main valve opening
 - d. Date of manufacture
 - e. Direction of operation
 - f. Ground or bury line (mark to reflect point of bury to maximize breakaway features.)
4. Two (2) copies of operating manuals and/or descriptive literature shall be furnished with all fire hydrants or groups of hydrants supplied by the same manufacturer. The manuals or literature shall include assembly drawings, schedule of parts, maintenance instructions, and complete tool kits.
5. A complete tool kit for those fire hydrants requiring special tools shall be provided.
6. In addition to the above, Standard fire hydrants shall meet the following requirements:
- a. Size and Type of Inlet Connection:
 - i. Standard Hydrants-Dimension of the foot piece shall be as required to fit cast or ductile iron pipe of six inches (6") nominal inside diameter.
 - ii. Connection-Type of inlet connection for standard shall be either mechanical joint or "push-on" rubber ring. If the "push-on" rubber ring type is used the foot piece shall be provided with lugs for harnessing the hydrant to the branch or lead connection pipe or fitting.
 - b. Breakaway Features-A frangible section immediately above the ground or bury line is required. If breakable features depend upon bolts of reduced cross-section, hollowed out bolts will not be permitted.
 - c. Number and Size of Outlet Nozzles Standard Hydrants – Two (2) hose nozzles each with a nominal inside diameter of two and one-half inches (2½") and one (1) pumper nozzle with a nominal inside diameter of four and one-half inches (4½").
 - d. Outlet Nozzle Arrangement- Standard Hydrant-Nozzle arrangement requires that the two (2) two and one-half inch (2½") diameter hose nozzles be opposite (180°) of each other. The single four and one-half inch (4½") diameter pumper nozzle shall be at right angles (90°) to the hose nozzles. The horizontal centerline of all nozzles shall be on the same plane and not less than sixteen inches (16") above the hydrant ground flange or bury line.
 - e. Three hundred sixty Degree (360°) Nozzle Rotation-Nozzles, or the entire above ground section, shall allow three hundred sixty degree (360°) rotation to the exact desired position after installation.
 - f. Outlet Hose Nozzles and Threads-Hose nozzles shall be made of Grade I. VII, or X bronze. The hose nozzles shall be fastened into the hydrant outlet tap by a thread of not less than seven and one half (7½) threads per inch. A pin shall be employed to prevent the threaded outlet hose nozzle from turning or backing out. The cap or hose accepting end of the outlet nozzles shall be threaded with National (American) Standard Fire-Hose Coupling Screw Threads.

- g.** Nozzle Cap Materials-Grey cast or ductile iron caps with a recess at the inner end of the thread to retain a gasket. Caps shall be securely chained to the hydrant barrel with a metal chain having links made from stock not less than one-eighth inch ($\frac{1}{8}$ ") in diameter. The attachment shall permit free rotation of the cap.
- h.** Size of Hydrant- Nominal diameter of main valve shall be a minimum of five inches (5").
- i.** Main Valve Seat and Seat Ring-Shall be bronze to bronze in hydrants which have the main valve assembly in the lower end of the barrel. Threads shall be isolated from the waterway by O-ring seals.
- j.** Size and Shape of Operating Nut and Outlet Nozzle Cap Nuts shall be the National standard 1½-inch pentagonal, full section without undercutting or hollowing out. A threaded hole not to exceed one- quarter inch ($\frac{1}{4}$ ") in diameter will be allowed in the operating nut for lubrication purposes. Any such hole shall be plugged flush with the top of the operating nut and be water tight.
- k.** Operating Stem, Nut, and Lubricate Reservoir-The nut shall be made of bronze. Threads shall be lubricated by an oil or grease reservoir sealed by double O-rings, top and bottom to prevent intrusion of moisture and dirt. Length of operating stem surface in contact with O-ring seals shall be protected by a bronze sleeve.

A weather shield shall be provided to prevent dirt and moisture from entering between the sides of the operating nut and the hold down nut, or bonnet opening. Wet top hydrants are not acceptable.

- l.** Direction of Rotation: Hydrants shall open left (counter clockwise).
- m.** Stuffing boxes, if used, shall be provided with O-ring seals.
- n.** Barrel Drain Outlet-None required. If hydrant is provided with such an outlet, it must be plugged with a threaded bronze or cast iron plug.
- o.** Toggle Joint Hydrants-Shall be provided with bronze parts as follows: nozzles, lower threaded stem or spindle, stem nuts, seat ring, gate pins, cotter pins, main valve gate threaded stud, and nut.
- p.** All nozzles, caps, operating nuts, O-rings, friction bearing threaded surfaces, and grease fittings shall be lubricated with the appropriate factory recommended lubricating material. All reservoirs designed to hold a designated quantity of lubricant shall be filled to maximum capacity.

- 7.** A coat of aluminum exterior paint shall be applied as a color or finish coat over the primer coat on the top (above ground) section. All hydrant bonnets shall be painted with OSHA approved safety paint. The color shall be based on the diameter of the main that the hydrant is connected to, as follows:

Red: for 6" and smaller mains **Yellow:** for 8" – 10" mains **Green:** for 12" and larger mains

- 8.** Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.

10-32 VALVES

- 1.** Gate valves shall be cast iron, bronze disc, parallel seat, and non-rising stem with a two inch (2") square operating nut. Valves shall conform to AWWA C 500. All interior and exterior ferrous

surfaces shall be and coated with factory applied epoxy in accordance with AWWA C 550. Minimum thickness shall be eight (8) mils.

2. Resilient – Seated gate valves shall be cast iron, non-rising stem with a two inch (2") square operating nut. Valves shall conform to AWWA C 509. All interior and exterior ferrous surfaces shall be and coated with factory applied epoxy in accordance with AWWA C 550. Minimum thickness shall be eight (8) mils.
3. Valves provided shall open left (counter clockwise), and shall have bonnet and valve body markings in accordance with the indicated AWWA standards. Unless otherwise directed, furnish valves with flange, mechanical, and/or push-on joints in accordance with the plans and special provisions. Provide valve operating nut extensions in accordance with Standard Drawing 85 in City of Colusa Improvement Standards when installed valve operating nut is in excess of thirty inches (30") below finish grade.
4. Swing check valves are contained on an approved listing maintained by the Department of Utilities. Alternate swing check valves shall be added to this list upon review, test and acceptance by the Utility Department.
5. Bolts shall be carbon steel ASTM A 307, Grade B. Nuts shall be heavy hex nuts conforming to ASTM A 563, Grade C3.

10-33 VALVE BOXES AND COVERS, DROP CAPS, AND SERVICE VALVE BOXES

Valve boxes and valve box covers for streets and alleys, and drop caps in public utility easements shall conform to Standard Drawing W-303. The castings shall be ductile iron with a minimum tensile strength of twenty five.

thousand pounds per square inch (25,000 psi).

Riser sections shall be (8") diameter SDR 35 PVC pipe.

Service valve boxes shall be in conformance with Standard Drawings W- 305 and W-307. The riser portion shall be as shown.

10-34 WATER SERVICE CONNECTION MATERIALS

Water service material shall be either copper or polyethylene tubing. The Department of Utilities maintains a listing of approved water service connection fittings which establish a standard of material quality. Fitting used shall be limited to those on the list. Alternate material may be added to this list upon review, testing and acceptance by the Department of Utilities.

Copper service tubing shall conform to ASTM B 88, Type K, soft tempered.

Polyethylene tubing shall be two hundred pounds per square inch (200 psi), SDR-9 conforming to ASTM D 2737 and AWWA C 901 standards. Tubing shall be copper tube size and shall be manufactured for use with compression or Mueller Insta-tite fittings. Stainless steel insert stiffeners shall be used at all compression joints. Insert stiffeners shall be flared at one end and beveled at the approximately forty five degrees (45°) at the other end. Stiffeners shall be supplied by the fitting manufacturer. Tubing shall be clearly marked showing manufacturer's trade name, nominal size, type of material, pressure rating, and the seal of approval of an accredited testing laboratory.

Threads for underground water service connection fittings shall conform to AWWA C 800 Threads for Underground Service Line Fittings.

10-35 JOINT MATERIALS FOR CLAY PIPE

Joint materials for vitrified clay pipe shall be an approved type of factory- made mechanical compression joint conforming to the requirements of ASTM C

425. Banded rubber couplings and sleeves conforming to ASTM C 425 are acceptable.

10-36 JOINT MATERIALS FOR CONCRETE PIPE

Joint materials for concrete pipe shall be rubber gasket joints conforming to the requirements of ASTM C 443 and shall be flexible and able to withstand expansion, contraction, and settlement. All rubber gaskets shall be stored in as cool a place as practicable, preferably at 70° F. or less, and in no

case shall the rubber gaskets be exposed to the direct rays of the sun. Rubber gaskets, of the type requiring lubrication, shall be lubricated with the lubricant recommended and supplied by the manufacturer of the pipe.

10-37 JOINT MATERIALS FOR MANHOLES

Joint materials for precast reinforced concrete manhole sections shall conform to one of the following:

1. Mortar proportioned as one (1) cubic foot of Portland Cement to two (2) cubic feet of concrete sand. All mortar shall be used within thirty (30) minutes after the mixing water has been added.
2. Preformed plastic sealing compound shall conform to Type 1 – Rope Form, one and one-half inch (1½") diameter, Federal Specification SS-S-210A.

Section 14 EARTHWORK, EXCAVATION, EMBANKMENT AND SUBGRADE

14-1 ROADWAY EXCAVATION AND BACKFILL

In the Contract this item shall consist of excavating, removing, and satisfactory disposal of all material within the limits of the work for roadways, drainage channels, ditches, and any other work as may be specified in the Special Provisions or shown on the Plans. Suitable excavated material may be used for embankment and for backfilling. The rough excavation shall be carried to such depths that sufficient material will be left above the finished grade to allow for compaction to the required grade. Should Contractor excavate below the designated lines he will be required to replace the material with suitably compacted import material or Class "D" Concrete as determined by the Engineer, without cost to the City.

No excavation shall be started on a project until approval has been given by the Engineer. This approval is to assure all necessary surveys, cross sections, and measurements which may be required for determining the quantities removed are performed.

If all or part of the excavated material is to be used as fill, and preparation for the fill placement has not been made, the Engineer may require the stockpiling of this material. The Engineer shall have the right to select excavated material to be used in fill.

Payment for excavation shall be based on cross section measurements taken prior to the beginning of work and the final lines and grades of the finished section. Payment shall be made per cubic yard of material excavated in accordance with the Plans.

14-2 STRUCTURE EXCAVATION AND BACKFILL

All compaction test results and test agent information shall be submitted to the Engineer for review and approval. Placement of forms, foundations, or footings shall not begin until the City has received written verification that the compaction test results meet the requirements of this specification.

Structure excavation shall consist of excavation performed to place structures such as footings, walls, manholes, junction boxes, etc. Payment for structure excavation and backfilling shall be considered as included in the prices paid for the various items of work involved and no separate payment will be made therefore.

Excavation for placement of manholes will be paid for under the price bid for manholes, complete in place.

Backfill material shall be specified in the Special Provisions or indicated on the Plans. The backfill material shall be compacted by mechanically tamping in maximum eight-inch (8") layers so as to achieve a minimum relative compaction of ninety-five percent (95%).

Material excavated in excess of that required for backfilling will be disposed of away from the site of the work, unless otherwise permitted by the Engineer.

14-3 TRENCH EXCAVATION AND BACKFILL

Trench excavation shall consist of the excavation required to install pipelines **and** its cost will not be paid for separately but compensation will be included in the price bid for placing pipe.

Before excavation of the pipe trench in fill areas of roadway embankments, the fill area or embankment shall be completed to a height above the pipe invert grade line of not less than twice the internal pipe diameter or to final fill or embankment subgrade, whichever is lower, but in no case less than twelve inches (12") above the top of the pipe. Such embankment shall be compacted to a minimum relative compaction of ninety percent (90%) for a distance on each side of the pipe equal to a least two (2) pipe diameters. The remainder embankment shall be compacted as specified elsewhere in these Specifications for the type of construction being pre-formed, or as specified in the Special Provisions or the Plans.

Backfill shall be placed as shown on Standard Drawing 7-4, shall be provided by Contractor and shall be placed in accordance with these Standard Specifications and the pipe manufacturer's recommendations. Initial backfill shall be the material between the top of the bedding material and six inches (6") above the top of the bell or barrel if the pipe does not have a bell.

Initial backfill shall be placed immediately after pipe joints have been completed, inspected, and passed by the Engineer. The material shall be carefully placed so as not to disturb or damage the pipe and shall be brought up evenly on both sides. Initial backfill material shall be placed in layers not exceeding eight inches (8") in depth before compaction at or near optimum moisture content. Contractor shall place initial backfill by shovel slicing, tamping, and/or vibratory compaction in order to produce firmly compacted material under the haunches of the pipe. Compaction shall be by mechanical pneumatic or vibratory compaction equipment approved by the Engineer. Care shall be used to avoid dislodging the pipe. No wedging or blocking of the pipe shall be permitted. Ponding and jetting methods of achieving compaction shall not be allowed. The compacted material must achieve a relative compaction of at least ninety percent (90%) as determined by ASTM D 698.

When the bedding material for the pipe consists of crushed rock, sand shall not be used as initial backfill material.

Unless otherwise approved by Engineer, trench backfill, as shown on Standard Drawing 7-4, shall be provided, and placed to grade by Contractor, in accordance with these Standard Specifications and the pipe manufacturer's recommendations. Trench backfill shall be the material between the initial backfill and the top of trench or sub-grade. The material for trench backfill may be of job excavated, native material provided that such material is free of organic materials or other unsuitable materials as determined by the Engineer that may cause voids or depressions to develop during or after placement of the backfill. Rocks, stones, and solid earth chunks exceeding three inches (3") in greatest dimension shall be removed from the trench backfill material.

Unless otherwise indicated on the Plans or specified in the Special Provisions, trench backfill material shall be placed in layers not exceeding eight inches (8") in depth before compaction at or near optimum moisture content. Until the total backfill above the top of the pipe exceeds three feet (3'), machine-placed backfill material shall not be allowed to "freefall" more than two feet (2').

Unless otherwise shown on the Plans or specified in the Special Provisions, compaction of trench backfill material shall be by mechanical pneumatic or vibratory compaction equipment. Minimum relative compaction of trench backfill material shall be ninety percent (90%) when tested according to ASTM D 1557, except that the top six inches (6") below the subgrade shall be compacted to a relative compaction of ninety-five percent (95%). Trenches in easements outside the street rights-of-way may be compacted to ninety percent (90%) relative compaction throughout the depth. Compaction testing will be performed by the Engineer and the cost thereof will be borne by the City, except that retests of areas which fail to meet the required compaction will be charged to Contractor and deducted from any payment due Contractor for work performed under the terms of the Proposal.

Ponding and jetting methods of achieving compaction are not allowed.

Refer to Section 10-16 Controlled Density Fill (CDF) regarding approval and mix design requirements for use of CDF, CLSM, and/or RFF as an alternate to granular material for initial backfill and trench backfill materials.

14-4 TEMPORARY PAVING

Unless stated otherwise in Contract documents, at the end of the day and prior to opening to traffic, trenches shall be temporarily paved to provide a smooth riding surface. The paving material may be asphalt concrete or temporary paving, "cut back" or other Engineer approved material. Contractor may use non-skid plates to cover trenching when approved by the Engineer. Contractor shall nail down plates, and at edges Contractor shall create and maintain a uniform taper using temporary paving to ensure a smooth traveling surface over the plate.

Cutback shall be placed on the completed aggregate base course, constructed per the Plans and Special Provisions and shall be placed so that the compacted thickness is not less than two inches (2").

Compaction of temporary paving shall be performed using steel wheel rollers or mechanical equipment approved by the Engineer. Compaction by wheel rolling with backhoes or other rubber tire construction equipment shall not be allowed. The temporary paving shall be placed and maintained so that the maximum deviation does not exceed one-half inch ($\frac{1}{2}$ ") using a ten (10) foot straight edge placed in any direction. If, in the opinion of the Engineer, the temporary paving is not properly maintained, Engineer may direct Contractor to install permanent asphalt concrete pavement at no additional cost to the City of Colusa.

14-5 EMBANKMENT AND FILL

Fill on a roadway will normally be made with material excavated on the same work unless otherwise indicated by the Special Provisions or Plans.

Fill will be paid for per cubic yard measured in place by computing the yardage between the original ground elevation and the final grades as shown on the Plans.

Tests performed to determine relative compaction shall be performed using the following methods:

1. ASTM D 1557 laboratory test for maximum dry density at optimum moisture
2. ASTM D 2922 field test for in-place wet density by nuclear methods.
3. ASTM D 3017 field test for in-place moisture content by nuclear methods.

Relative compaction shall mean the ratio of the field dry density to the laboratory maximum dry density expressed as a percentage.

In general, construction of fill shall be in accordance with the methods set forth in the State Specifications. The relative compaction shall be at least ninety percent (90%), unless otherwise indicated.

14-6 LANDSCAPE FILL

The contractor shall provide the engineer a soil analysis report for proposed landscape fill material. Landscape fill shall consist of fertile, friable soil of loamy character. It shall be obtained from well-drained arable land outside of the project limits and shall be free from subsoil, refuse, roots, heavy or stiff clay, stones larger than one inch (1") in size, coarse sand, noxious weeds, such as Bermuda, Nut Grass and Morning Glory, sticks, brush, litter and other deleterious substances. Topsoil shall be capable of sustaining healthy plantlife.

Landscape fill will be paid for per cubic yard, measured in place by computing the yardage between the original ground elevation and the final grades as shown on the Plans; which price shall include full compensation for all labor, equipment and materials necessary for placement of landscape fill. The relative compaction shall be eighty-five percent (85%), unless otherwise indicated.

14-7 SUBGRADE

Sub-grades for pavement, curb and gutter, sidewalk, lined channels and ditches, or for rock base under pavements shall be finished accurately and true to the lines and sections shown on the Plans, within a tolerance of ± 0.05 feet. The top six inches (6") of sub-grade immediately prior to placing subsequent material thereon shall have a relative compaction of not less than ninety-five percent (95%). The sub-grade shall be free of segregated material and shall be smooth and true to the required grade and cross section. Contractor shall repair, at his expense, any damage to a prepared sub-grade caused by his operations or by use of public traffic. No material shall be placed upon the prepared sub-grade until it is in a condition meeting the requirements specified. Unless otherwise provided by the Special Provisions, the finishing of sub-grade will not be paid for as a separate item but this work will be included by Contractor under such items as Contractor deems appropriate.

14-8 UNSUITABLE MATERIAL/IMPORT**1. Definition**

Unsuitable Material for roadway sub-base and trench backfill is defined as soil the Engineer determines to be:

- a. Loose, unstable or yielding, or
- b. Unable to be compacted to specified density using ordinary methods at optimum moisture content, or
- c. Contains visible or excessive deleterious material as determined by the Engineer, or
- d. Too wet to be properly compacted and circumstances prevent processing suitable in-place drying prior to being used as backfill; or
- e. Otherwise unsuitable for planned use.

2. Handling Trench Unsuitable Material

Whenever the bottom of the trench is soft or rocky, or rendered not suitable by the Engineer for pipe bedding, the unsuitable material shall be removed to a minimum depth of six inches (6"), or deeper as determined by the Engineer, for pipelines or twelve inches (12") for manholes or appurtenant structures. Whenever excavated native soil is rendered by the Engineer to be unsuitable for trench strata backfill, Contractor shall remove and replace with import material approved by the Engineer.

For drainage, sewer and water pipelines the unsuitable material shall be replaced with Class 2 aggregate base or approved equal and shall be compacted to 90% relative compaction. For manholes and appurtenant structures, the unsuitable material shall be replaced with material subject to the approval of the Engineer. The Engineer may direct the Contractor to furnish and place geotextile fabric below the bedding materials. The geotextile material shall be a non-woven fabric equal to or exceeding the properties listed in the table below.

REQUIRED NONWOVEN GEOTEXTILE PROPERTIES		
Physical Property	Test Method	Acceptable Minimum Test Results
Tensile strength, lb	ASTMD 4632	200 lbs.
Elongation, %	ASTMD 4632	50%
Permittivity, sec ⁻¹	ASTMD 4491	1.5 sec ⁻¹
Puncture strength, lb	ASTMD 4833	120 lbs.
Mullen Burst strength, psi	ASTMD 3786	380 psi

The cost to remove and replace unsuitable bedding material to the above specified depths shall be included in the specific bid item cost. Excavation of unsuitable material beyond these depths, so ordered removed by the Engineer, will be paid as extra work as provided in Section 4 unless otherwise specified in the Special Provisions.

The cost to haul and replace native soil that is unsuitable for trench strata backfill shall be a separate bid item that includes the import material price and the transporting expenses for both unsuitable and the import material. The cost to replace unsuitable material rendered unsuitable due to any act or omission of Contractor or due to inclement weather shall be borne by Contractor and there will be no compensation therefore.

Excavated unsuitable material shall be the property of Contractor and shall be disposed of away from the project site. For off site disposal, Contractor shall have written permission from the owner upon whose property the disposal is to be made before any material is deposited thereon.

The quantity of unsuitable material/import for trenches shown on the Proposal is for bidding purposes only. The unit price indicated will not be adjusted because the actual quantity varies from the quantity shown on the Proposal.

Payment for handling Unsuitable Material/Import shall be at the contract unit price bid per tonnage of import.

3. Handling Roadway Unsuitable Material

For road sub-grades unsuitable material shall be replaced with pit run base, aggregate base Class II, cement treated bases, lime treated bases, and with geogrid.

Payment for handling Roadway Unsuitable Material/Import shall be at the contract unit price bid per ton, shall be based solely on the tonnage of import, and shall include full compensation for furnishing all labor, materials, tools and equipment, and for performing all work necessary to complete this item in place.

As an alternate the Engineer may direct Contractor to furnish and place geotextile fabric below the bedding materials. The geotextile material shall be a high modulus woven fabric, and shall be inert to commonly encountered chemicals, rot-proof, and resistant to ultraviolet light, insects, and rodents. The geotextile fabric shall have a minimum grab tensile strength of two hundred pounds (200 lbs.) in any direction as measured in accordance with ASTM D 4632, a Mullen burst strength of at least four hundred pounds per square inch (400 psi) per ASTM D 3786, and an Equivalent Opening Size no larger than the U.S. Standard Sieve Number 50 as determined by ASTM D 4751. Geotextile fabric shall be Mirafi 600X or equal. Each roll of fabric shall be handled and placed in accordance with the manufacturer's recommendations. Furnishing and placing of geotextile fabric will be paid for as extra work as defined in 4-6, "Extra Work Force Account" unless otherwise indicated.

Where geogrid is utilized Contractor shall furnish equipment required for satisfactory progress and completion of the project. Before placement of the geogrid, the site shall be cleared of all topsoil, trees, stumps, rocks, and other debris. The grade shall be reasonably smoothed, minimizing all ruts, depressions, and other distortions that would inhibit smooth and proper placement of the geogrid. Geogrid shall be placed in accordance with the suppliers installation recommendations, but in no case shall grid ties be placed less than twenty feet apart or grid overlaps be less than two feet.

Geogrid shall be laid either at the elevation and alignment as shown on the Plans or to the limits approved by the Engineer in the field and shall be oriented such that the roll length runs parallel to the roadway. When geogrid rolls are placed side-by-side, or end-to-end, they shall be overlapped a minimum of two feet or a greater distance recommended by the supplier and approved by the Engineer. Overlap geogrid in the direction that fill will be spread. Geogrid material shall be tensioned by hand and secured to the ground surface.

Care shall be taken to ensure that geogrid sections do not separate at overlaps during construction. Placement of geogrids around corners may require

cutting of geogrid product and diagonal overlapping to ensure that excessive buckling of grid material does not occur. No more than two layers of geogrid are to be placed in direct contact with one another.

When very soft subgrade soils are encountered, fill material placed over the geogrid shall be back dumped from trucks and bladed onto the geogrid in such a manner that the fill rolls onto the geogrid ahead (e.g. by gradually raising the dozer blade while moving forward), Geogrid installation procedures shall be performed so that the geogrid does not "roll" or substantially deflect ahead of the operation and possibly fold over onto itself as this undermines the structural integrity of the geogrid. Care shall be taken during the initial lifts to avoid failing the weak structure of the subgrade by preventing heavy equipment from placing the initial lifts. On firmer but still structurally unsuitable subgrades, pneumatic tired vehicles may operate directly upon the geogrid at slow speeds, less than 5 MPH, provided the geogrid does not require a protective coating.

Tracked construction equipment shall not operate directly on the geogrid. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Care shall be taken by the

operators to avoid sudden sharp turning. Fill material shall be placed over the geogrid to depth and dimensions shown on the plans or as approved by the Engineer. The backfill material placed in contact with the geogrid will be the approved aggregate base material or a material with a maximum aggregate size of one and one-half inches (1 ½") and approved by the Engineer. For damaged or torn geogrids, or for geogrids with protective coatings, any damage to the coating incurred during transportation, storage or installation shall be repaired or replaced to the satisfaction of the Engineer by Contractor at their expense. The coating shall be restored to its original condition.

14-9 PAYMENT

Payment shall be at the unit price per cubic yard and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in the installation, and all other necessary work as directed by the Engineer to conform with this item.

Section 22 ASPHALTIC CONCRETE

This project shall provide an asphalt concrete overlay (FRAC), two and one-half inches thick, underlain by a paving fabric once all underground utilities are installed for both the water and sewer projects.

22-1 ASPHALTIC CONCRETE TYPE AND MIX DESIGN

Asphalt concrete shall contain a high tensile strength aramid fiber reinforcement. Asphalt concrete and the placing thereof shall conform to the requirements of Section 39, "Hot Mix Asphalt Concrete," of the Standard Specifications with the following modifications:

Aggregate shall be Type A, ½" maximum.

Paving asphalt shall be PG64-16 conforming to the latest published provisions in Section 92, "Asphalt," of the Standard Specifications.

Definitions:

HMA - hot mix asphalt.

Aramid fiber - pure aramid fiber meeting the material properties of this specification, without additive materials.

Fiber reinforced asphalt mixture - hot mix asphalt including aramid fibers properly proportioned and distributed, uniformly mixed, and coated with asphalt.

Delivery material(s) - the material(s) combined with the pure aramid fiber to facilitate aramid fiber and HMA proportioning, uniform mixing with the HMA, and asphalt coating of the aramid fibers. Delivery material(s) should keep the pure aramid fiber from flying away.

Aramid product - the aramid supplier's mixture of pure aramid fiber and delivery material(s).

Manufacturer - the company that produces the aramid fiber from raw materials.

Supplier - the company that sales the aramid product.

22-2 MATERIALS FOR ASPHALTIC CONCRETE

Aggregate material shall conform to the requirements of Section 39 of the State Specifications for three-quarter inch (¾") maximum aggregate for major streets and one half inch (½") for residential streets or as determined by the Engineer. Where two lifts are placed, the Engineer may require that the base course be ¾" maximum aggregate and the surface course be ½" maximum aggregate. Consideration shall be given to percentage of heavy vehicles and bus stop locations.

Paving asphalts shall meet the requirements of Section 10-18 of these Specifications.

Unless otherwise indicated on the Plans or in the Special Provisions, asphalt binder to be mixed with aggregate shall be steam-refined paving asphalt: PG 64-10 or PG 64-16 for residential and collector streets and PG 70-10 for on/off

ramps, Intersections, arterials, and thoroughfares. Use ARHM-GG (Asphalt Rubber hot Mix – Gap Graded) with PG 64-16 for overlays, unless otherwise indicated.

Meet the following aramid fiber properties.

Property	Measure	Standard
Material	Aramid	ASTM D276
Form	Monofilament fibers	Manufacturer Certification
Length	0.75 to 1.50 inches (19 to 38mm) \pm 10%	Manufacturer Cert.
Filament Diameter	12 \pm 2 microns	
Specific Gravity	1.44 \pm 0.01 g/cm ³	ASTM D2256
Tensile Strength	400,000 psi (2.758 GPa) minimum	ASTM D2256
Elongation at Break	4.4 % maximum	ASTM D2256
Degradation Temperature	800°F (426° C) minimum	ASTM D2256
Acid and Alkali Resistance	Inert	Manufacturer Certification
Treatment Type	Sasobit® Wax	

22-3 MIXING EQUIPMENT FOR ASPHALTIC CONCRETE

Mixing equipment shall conform to that specified in Section 39 of the State Specifications.

22-4 GENERAL REQUIREMENTS FOR PLACING ASPHALT CONCRETE AND ASPHALT CONCRETE OVERLAYS

Contractor shall notify the public seventy-two (72) hours prior to the start of work by placing door hangers to all business and residences that may be affected by the work as determined by the Engineer. Contractor may be required to contact business owners in person to explain the work schedule as determined by the engineer. No work shall be permitted until the public has been notified.

If Required by the Engineer, Contractor shall notify the following City departments and agencies seven (7) days prior to performing the work: Public Works Solid Waste Division (Street Cleaning Section), Public Works Parking Division, Public Works Street Maintenance Section (Traffic Signs and Markings Section and Traffic Signals and Lighting Section), Police Department Communications Center, Fire Department Communications Center, and Colusa Metro Regional Transit (bus stops and light rail). If required, Contractor shall contact the appropriate representative of each City department or agency, and provide a work schedule in writing.

Contractor shall be responsible for trimming of trees necessary to perform the work as determined by the Engineer. Contractor shall obtain a tree-trimming permit from City Tree Services Division prior to trimming trees.

Contractor shall be responsible for removing all yard waste and debris effecting the work at his expense. Yard waste shall not be relocated to planter strips, pedestrian areas, or other areas not approved by the Engineer. Garbage cans that are temporarily removed from the street shall be placed back in their original position at the end of the workday.

Contractor shall be responsible for removing all vegetation from the roadway surface and edge of pavement, and sweeping in advance of placing the pavement operation (prior to tack coat) to the satisfaction of the Engineer.

Contractor shall clean, sweep, and maintain the cleanliness of the streets to be paved to the satisfaction of the Engineer throughout the course of the work. Materials spilled or dispersed as a result of the work on adjacent streets shall also be cleaned at the expense of Contractor. The street shall be swept with a mechanical type pickup machine and shall be left thoroughly clean and clear of any pavement grindings at the end of each working day. The machine shall spray adequate amounts of water to control dust.

Contractor shall remove and dispose of existing pavement markers prior to placing asphalt. All thermoplastic limit lines, crosswalks, and legends applied to the road surface shall be scarified prior to placing the overlay. No crack sealing is included with this project.

All manholes and utility covers concealed with asphalt concrete shall be carefully referenced out ("cross-tied") prior to the placement of asphalt by Contractor. All exposed survey monuments shall be referenced out prior to the overlay, covered by an appropriate method approved by the Engineer, and uncovered after the overlay without disturbing or damaging the survey monument. All relevant iron (manholes, water valves, etc.) shall be lowered prior to pavement planing as directed by the Engineer. Contractor shall submit "cross ties" to the Engineer prior to the lowering of iron.

Contractor shall coordinate the removal of on-street parking with the Engineer Seventy-two (72) hours prior to the start of work in accordance with City of Colusa Construction Specifications adopted November 2007.

22-5 PAVEMENT KEYCUTTING, CONFORMS, AND PLANING

No pavement planing shall be done to profile the street to a planer surface for this project.

Where specified by the civil plans, pavement keycutting shall be done to provide a key wedge against existing gutter lips. Asphalt concrete removal shall be to a minimum depth of one and a half inch (1½") adjacent to the lip and shall be tapered to the existing pavement grade over a distance of eight feet (8') minimum, from the gutter lip. At cross streets, where the condition of the side street is very good, pavement keycutting shall continue in a straight line from curb line to curb line parallel to the direction of work as directed by the Engineer.

At the beginning and ending limits of pavement keycutting, a planed pavement conform shall be constructed to the drawings shown in City of Colusa Improvement Standards or as directed by the Engineer. At cross streets, where the condition of the side street is poor, planed pavement conforms shall be done between the lip of the main street to the curb return of the side streets. When the beginning or ending limit of work is a crossing street, twenty feet (20') planed conform extending to the round corner of the crossing street shall be constructed except that an eighteen foot (18') planed pavement conform shall be constructed on residential streets. The conform shall span the full width of the street for a distance of twenty feet (20') back from the limit line or feature resulting in the discontinuity in the work.

Contractor shall exercise care to avoid damaging the gutter lips during the grinding operations. Damaged gutter lips which have spalls in excess of one inch (1") deep by five inches (5") long shall be repaired at Contractor's expense.

Grinding operations shall be completed to the satisfaction of the Engineer prior to beginning the paving operation.

Contractor shall remove existing asphalt concrete from the top of the gutter pan and from the face of gutter lip as directed by the Engineer.

The grindings shall become the property of the City of Colusa and disposed of at the City storage yard.

Not more than three (3) calendar days shall elapse between the time pavement planing and/or pavement keycutting begins on any particular section of roadway and the time that the asphalt concrete surfacing is placed unless approved by the Engineer.

22-6 PLACING

Placing of asphaltic concrete shall conform to the requirements of Section 39 of the State Specifications.

Contractor shall use a thirty foot (30') leveling ski on the free floating edge unless otherwise approved.

Before placing asphaltic concrete surface course on an asphaltic concrete base course, a tack coat shall be applied unless otherwise approved.

The material shall be brought to the site of the work in suitable vehicles so equipped that they will operate properly with the spreading equipment being used. The Engineer shall have the right to remove any vehicle from service which is not operating satisfactorily in the spreading of the material. Tarpaulins shall be provided for all trucks and shall be used whenever the Engineer may direct.

Asphaltic concrete shall not be placed on a wet base or subgrade, and the ambient air temperature shall be 50°F. and rising. The temperature of the mix shall not exceed 320°F. nor shall it be laid at a temperature below 250°F unless authorized by the Engineer.

When base course and surface course are used, the extent to which the base course may be laid ahead of the surface course, and the requirement for a tack coat, shall be determined by the Engineer.

22-7 TACK COAT

Tack coats shall be in conformance with the requirements of Section 39 "Paint Binder (tack coat)" of the State Specifications. A tack coat shall be applied to all planed surfaces, paved surfaces to be resurfaced, vertical surfaces of existing pavements, curbs, gutters, and construction joints, and other surfaces as directed by the Engineer.

Tack coats shall be SS-1 asphalt emulsion unless otherwise approved. The proportion of SS-1 and water shall be 80/20, or as determined by the engineer, and shall be applied to the surface at an application rate from .02 to 0.10 gallons per square yard. Typical application rates vary from .05 gallons per square yard for smooth finished surfaces to .10 gallons per square yard for planed pavement surfaces.

Prior to applying tack coat, the street surface shall be swept clean by brooming or washed clean to the satisfaction of the Engineer. The length of the tack coat placed in advance of the paving operation shall be determined by the Engineer to minimized degradation of the tack coat by vehicular traffic. The street surface shall also be free of moisture and dry to the satisfaction of the Engineer.

Under cold weather conditions, the Engineer may approve the use and application rate of PG 64-10 or PG 64-16 paving asphalt as a tack coat.

22-8 SPREADING AND COMPACTING

Spreading and compacting requirements shall be in conformance with Section 39 of the State Specifications except as noted herein. Compaction shall be subject to density testing as defined in Section 22-9 and 22-10 of these specifications in accordance with California Test Methods 304 and 308.

Contractor shall furnish a minimum of two (2) ten (10) ton steel wheel rollers and one (1) twelve (12) ton pneumatic tired roller unless otherwise approved by the Engineer. Vibratory rollers may be substituted when approved by the Engineer.

The initial or breakdown rolling of surface course shall be followed by additional rolling consisting of three (3) complete coverage with a pneumatic-tire roller, while the temperature of the mixture is at or above 150° F. The final rolling of surface course shall be performed with a ten (10) ton, two (2) axle tandem roller.

The rolling of the asphaltic concrete material shall commence immediately after its placement. Rolling shall continue until all ruts and surface imperfections are eliminated and the proper degree of compaction is achieved.

Finish rolling shall be accomplished with a steel wheel tandem roller. A vibrating roller may be used as the finish roller provided that it meets the requirements for a finish roller as herein specified and is operated with the vibratory unit turned off. Rolling shall commence at the lower edge and shall progress toward the highest portion, except that when compacting layers which exceed 0.25-foot in compacted thickness rolling shall commence at the center and shall progress outwards.

At the commencement of the asphaltic concrete paving operations, Contractor shall cooperate with City forces in establishing and agreeing upon a rolling pattern that will insure the obtainment of the maximum

possible density in the compacted asphaltic concrete surface. Once the rolling pattern is established, Contractor shall follow this pattern unless otherwise directed by the Engineer.

Contractor shall place asphalt such that its finished surface is ¼ to ½ inches above the gutter lip.

Pavement surface shall be deemed unacceptable should the surface hold water, the pavement ravel, an uneven gradation of mix be visible, or cracking occur during rolling. Pavement shall be removed by surface planing (a minimum depth of one and one-half inches (1½") when using one-half inch (½") mix, and two inches (2") inches when using three-quarter inch mix), and repaved to the satisfaction of the Engineer. Areas to be removed and replaced will be determined by the Engineer. Should a significant amount of surface be deemed unacceptable, the entire travel lane shall be resurfaced. A series of spot patches will not be accepted. The mix design used during resurfacing shall be the same as the adjacent pavement.

Pursuant to Section 5-14 of these Specifications, the Engineer will have the right and authority, but shall not be obligated, to retain imperfect work instead of requiring the imperfect work to be removed and reconstructed. Patch paving of imperfect work will not be allowed, and the amount of the deduction shall be based on full travel lane widths from beginning to end of the work limits or two nearest intersections as determined by the Engineer.

22-11 PAVEMENT REINFORCING FABRIC

Pavement reinforcing fabric shall be installed on the entire street section prior to overlaying. Pavement reinforcing fabric shall be non-woven polyester, polypropylene, or polypropylene/nylon materials conforming to the requirements of the below indicated ASTMs:

Weight, Oz./sq.yd.

ASTM D 5261 3.0 to 8.0

Grab Tensile Strength (1-inch grip), Pounds

ASTM D 4632 90 min.

Elongation at Break, Percent, ASTM D 4632 50 min

Fabric Thickness Mils.,

ASTM D 5199 12 to 100.

The fabric shall retain the physical properties listed herein after being in contact with asphalt concrete at temperatures of up to 325° F. for five (5) minutes (±15 seconds).

Pavement reinforcing fabric shall be accompanied by a Certificate of Compliance signed by the manufacturer stating that the fabric complies with these Specifications. The fabric shall be protected from exposure to ultraviolet rays and kept dry until placed. Before spreading asphalt binder, large cracks, spalls and chuckholes shall be repaired as directed by the Engineer and such repair work will be paid for as extra work-force account as provided in Section 4-6 of these Specifications.

Immediately prior to placing the fabric, an asphalt binder shall be applied to the street surface. Asphalt binder for pavement reinforcing fabric shall conform to the provisions of Section 10-18 of these specifications and shall be the same grade of the mix design.

Asphalt binder for pavement reinforcing fabric shall be applied at an approximate rate of 0.25 gallons per square yard of surface covered. The width of the asphalt binder spread shall be the width of the fabric mat plus three inches (3") on each side. Asphalt binder shall be applied at a temperature of not less than 290° F.

The fabric shall be stretched, aligned and placed with no wrinkles that lap. The test for lapping shall be made by gathering together the fabric in a wrinkle. If the height of the doubled portion of extra fabric is

one-half inch ($\frac{1}{2}$ ") or more, the fabric shall be cut to remove the wrinkle then lapped in the direction of paving. Laps in excess of two inches (2") shall be removed.

If manual lay down methods are used, the fabric shall be unrolled, stretched, aligned and placed in increments of approximately thirty feet (30').

Adjacent borders of the fabric shall be lapped two to four inches (2-4"). The preceding roll shall lap two to four inches (2-4") over the following roll in the direction of paving at ends of rolls or at any break.

Seating of the fabric with rolling equipment after placing will be permitted. Turning of the paving machine and other vehicles shall be gradual and kept to a minimum to avoid damage.

A small quantity of asphalt concrete may be spread over the fabric immediately in advance of placing asphalt concrete surfacing in order to prevent fabric from being picked up by construction equipment.

Public traffic shall not be allowed on the bare reinforcing fabric, except that public cross traffic shall be allowed to cross the fabric, under traffic control, after Contractor has placed a small quantity of asphalt concrete over the fabric.

Care shall be taken to avoid tracking binder material onto the pavement reinforcing fabric or distorting the fabric during seating of the fabric with rolling equipment.

22-12 PAYMENT FOR ASPHALTIC CONCRETE OVERLAY

Payment for asphaltic concrete pavement overlay shall be at a price per ton of delivered and place material. The method used on any work will be shown by the list of quantities on the Proposal and by the type of unit price requested in the Proposal.

Payment for asphaltic concrete pavement by either of the above two methods, as may be specified in the Proposal for that particular work, shall include full compensation for furnishing and placing the material without additional compensation. Tack coat and the adjusting utility covers, where required, shall also be furnished without additional compensation and as part of the bid per ton or per square foot of asphaltic concrete pavement.

Payment for pavement key cutting shall be at the unit price per lineal foot of street surface and shall include all conforms, planed and shall include full compensation for furnishing all labor, materials tools, equipment and incidentals.

Payment for pavement reinforcing fabric shall be at the unit price bid per square yard of street surface actually covered as determined by the Engineer, and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in placing pavement reinforcing fabric, complete in place, as specified herein.

Payment for full compensation for advance spreading of asphalt concrete over the fabric and for furnishing and placing the asphalt binder in accordance with the requirements of this Section shall be considered as included in the contract prices paid per ton for asphalt concrete surfacing and no additional compensation will be allowed therefore.

Section 23 BITUMINOUS SEALS - Not a part of this project.

Section 24 CURBS, GUTTERS AND SIDEWALKS – Not a part of this project

Section 27 WATER DISTRIBUTION SYSTEMS

27-2

All water pipe, fittings, valves, fire hydrants, blow-offs, air release valves and other appurtenances shall be installed in accordance with the requirements of the project Plans and Special Provisions, these Standard Specifications, the American Water Works Association (AWWA), ANSI-61, the City's Cross Connection Control Policy, and the manufacturer's recommendations. Materials shall be as specified in Section 10 "Construction Materials" of these Standard Specifications.

During construction, Contractor shall not operate any valves in the City's distribution system and must request that City Utilities Department Personnel operate them. Contractor shall request the Engineer to notify the City Utility Department Personnel as specified in Section 27-11 of these Standard Specifications.

27-2 WATER PIPE

1. Water Services - Pipe used for water services two inches (2") in diameter or less shall be copper or polyethylene tubing as specified in Section 10 of these Standard Specifications. Pipe used for water services four inches (4") in diameter or large shall be the same as specified for distribution mains.

Polyethylene services shall be a single piece of tubing (no joints allowed including butt welds) and shall have a locating wire attached with ten (10) mil tape at three foot (3') spacing. The minimum allowable radius shall be thirty (30) times the tubing diameter.

2. Distribution Mains (4" to 12") – Unless otherwise specified on the Plans or Special Provisions, water mains four inches (4") through twelve inches (12") diameter in water distribution systems shall be made of ductile iron pipe (DIP), or polyvinyl chloride pipe (PVC) meeting the applicable requirements of Section 10 of these Standard Specifications.

27-3 TRENCHING FOR WATER PIPE

Trenches for water pipe including water transmission mains, water distribution mains, fire hydrants branch leads, and water services shall be as specified herein unless otherwise indicated on the Plans or in the Special Provisions.

Prior to cutting pavement Contractor shall notify Underground Service Alert (USA) per City of Colusa Construction Specifications adopted November 2007 and shall bring to the Engineer's attention any possible conflicts.

Existing pavement to be removed shall be saw cut the full depth to provide a neat straight pavement break along both sides of the pipe trench. Contractor shall perform the pavement cutting operation by saw cutting.

Trenches for water main pipe shall be excavated to the lines and grades indicated on the Plans and as detailed by Standard Drawing in City of Colusa Improvement Standards. Contractor shall furnish, install, and maintain a trench shoring system in compliance with City of Colusa Construction Specifications.

Water distribution mains constructed in fully improved streets with curb, gutter, and sidewalk shall be installed with a minimum of thirty-six inches (36") of cover and a maximum of fifty-four inches (54") of cover measured from the top of the pipe to pavement surface.

In order to avoid conflicts with other utilities, particularly at street intersections, it may be necessary to deviate from the above-specified minimum and maximum cover requirements. At locations where the crossing of water mains with other underground utilities results in grade conflicts, adjustment to the vertical alignment of the water main may be required. Adjustments over or under the conflicting utility line shall be made as detailed in Standard Drawing in City of Colusa Improvement Standards. The cost to

make these adjustments shall be included in the bid price to install the pipe when the conflicts are shown on the Plans.

In designing the distribution system, it was intended that ten feet (10') be the minimum horizontal distance between parallel water and sanitary sewer lines and services, and that the water main be at least twelve inches (12") higher. No field changes shall be made that conflict with the requirement without prior approval of the Engineer.

The bottom of the excavated trench shall be cleared of rocks and clay lumps larger than two inches (2") in size. All grade stakes, wood, cut and abandoned pipe, or other material shall be removed from the trench. The bottom of the trench shall be smoothed and compacted to provide uniform support of the pipe between the joints. The bottom of the trench shall be compacted to a minimum of ninety percent (90%) of maximum dry density as determined by ASTM Test Designation D698.

Whenever the bottom of the trench is soft or rocky, or, in the opinion of the Engineer, otherwise unsuitable as a foundation for pipe bedding, the unsuitable material shall be removed.

Unsuitable material encountered during excavation of the trench shall be excavated and disposed of as directed by the Engineer. Contractor shall excavate unsuitable material and the resulting space shall be filled per these Standard Specifications.

At the end of each working day, the maximum amount of trench open on any portion of the project shall not exceed the length of open trench necessary for placing pipe the next working day. This open trench shall be bridged. Open trench exceeding the length necessary for placing the pipe the next day shall be backfilled, compacted, and temporarily paved. Within the traveled way in a direction crossing traffic flow, the open trench shall either be bridged or shall be backfilled, compacted, and temporarily repaved.

Unless directed or indicated otherwise, plug or seal the ends of existing pipes cut to install new pipe. As a minimum, provide temporary end covers to prevent dirt from entering pipes that are to be reconnected. The cut ends of abandoned pipes made of plastic, clay, Transite, concrete, or similar materials shall be permanently sealed with a concrete plug extending at least two feet (2') into the cut pipe. Use Class "C" or Class "D" concrete per Standard Specifications Section 10-5. Cut ends of abandoned steel pipes may either be plugged with concrete as above, or sealed by welding quarter inch (1/4") thick steel plates onto each end. Cut ends of abandoned pipe that will be removed do not require permanent seals.

When active water mains must be cut, Contractor shall anticipate that existing water system valves do not seal drip tight, and thus pipes downstream of existing valves may become pressurized. Seal the cut ends of active water mains with watertight 150 psi pressure rated end caps suitable for potable water use. Pressure rated end caps shall be left in-place until the cut pipe is restored, or the Engineer determines that the cut pipe is fully isolated and thus is no longer an active main. If end caps are removed from water mains to be abandoned, plug the exposed ends as described above.

Contractor shall be responsible for the control, removal, and disposal of any groundwater that may be encountered in the course of excavating and backfilling trenches or placing pipe. Whenever water or over-saturated soil conditions exist which may interfere with proper installation, trenches shall be dewatered before placement of any pipe or material. Unless approved in writing by the Engineer, groundwater and/or water from trench dewatering shall be free of sediment and other construction materials before entering the City stormdrain system. A dewatering plan, including a water de-sedimentation plan, shall comply with these Standard Specifications and be approved by the Engineer prior to any discharge of water to the City's storm drain system.

27-4 LAYING WATER PIPES

1. General

Contractor shall take all appropriate measures to prevent any type of foreign material or animals from entering the pipe while the water pipe is being placed. Contractor shall clean the inside of the pipe as directed by the Engineer.

Pipe for water mains shall not be placed during inclement weather or when the conditions in the trench will interfere with proper jointing of the pipe as determined by the Engineer. Whenever the work of placing the water main is discontinued and at the end of each workday, all open ends of water main pipe, fittings and valves at the pipe end shall be sealed. The seal shall be water tight and shall be easily installed and removed. The trench shall be temporarily backfilled to completely cover the seal.

All metallic pipe and fittings shall be wrapped with eight (8) mil polyethylene material in accordance with AWWA Standard C105/A21.5. Polyethylene shall be installed in accordance with the requirements of Section 27-17 "Corrosion Monitoring" in these Standard Specifications.

Pipe for the project shall not be stockpiled within public street right-of-way along the alignment of the water transmission main in excess of an amount representing a five (5) day supply at current rates of pipe laying, and shall never exceed a maximum length of five hundred feet (500') unless otherwise indicated in the Special Provisions. Stockpiling of pipe on the opposite side of the street from construction shall not be allowed without the approval of the Engineer.

Each section of pipe and each fitting shall be thoroughly cleaned before it is installed. All pipes, valves, fittings, and appurtenances shall be lowered into the trench in such a manner as to prevent any damage, particularly to the pipe lining and coating. Under no circumstance shall pipe or appurtenances be dropped into the trench.

The pipe shall be laid true and uniform to line and grade, with no visible change in alignment at any joint unless a curved alignment is shown on the Plans, in which case the maximum deflection at any joint shall not exceed two-thirds ($\frac{2}{3}$) the manufacturer's recommendation for the type of pipe and joint being used.

All pipe jointing, including the deflection at joints in curved alignments, shall be in accord with accepted best practice and as detailed herein and in the manufacturer's installation manual. Both joint surfaces shall be clean before joints are made. Materials used to join the pipe shall only be that furnished with the pipe or recommended by the manufacturer.

When field cutting pipe, the cut ends shall be cut square and all burrs removed from the pipe interior. The beveling of the pipe ends shall be as specified by the manufacturer. Guide marks for jointing the pipe, after cutting, shall be made on the pipe in accordance with the manufacturer's recommendations.

Contractor shall prevent undue pipe deflection and/or unit loading during pipe handling. Damage to the pipe lining or coating shall be repaired by Contractor in accordance with the manufacturer's recommendations as directed by the Engineer

2. Rubber Gasket Joints

The joining of lengths of pipe with rubber gasket joints shall be performed in the following sequence and in accordance with the pipe manufacturer's recommendations:

- a. The spigot groove, inside bell sealing surface and rubber O-ring gasket shall be thoroughly cleaned.
- b. The above-cleaned surfaces shall be thoroughly lubricated with a soft, vegetable soap compound.
- c. The gasket shall be uniformly stretched while placing it in the spigot groove to assure a consistent volume of rubber distributed uniformly around the circumference.
- d. The pipe shall be joined by a firm horizontal push without binding.
- e. A feeler gauge shall be inserted between the bell and spigot to check the position of the rubber gasket around its periphery. If the gasket is in an improper position, it shall be removed, inspected, reassembled, and rechecked.

5. Cleanup-Up Behind Pipe Laying Operations

Contractor shall maintain cleanup operations in pace with pipe laying. Concurrently with or immediately after placing of backfill, all areas affected by Contractor's operations shall be restored to their original conditions (except for final repaved surfacing) and left in a neat and orderly condition.

Excavations at locations of valves, blow-offs, air relief valves, and tie-in connections shall not be left open without the Engineer's written permission.

Replacement of removed improvements or repairs to damaged or disturbed real property or improvements shall be performed concurrently with the cleanup work.

Failure to perform the above work in pace with the forward trenching progress shall be sufficient cause for the Engineer to order Contractor to stop trenching until the Engineer has determined that the work has been caught up.

27-5 PLACING LOCATING WIRE WITH DISTRIBUTION MAINS

All runs of distribution mains (4" to 12") including metal and plastic shall have a locating wire taped to the top of the pipe to facilitate location after installation, as shown on Standard Drawing 8-4 in City of Colusa Improvement Standards. The locating wire shall be a No. 10 gauge copper wire insulated with high molecular weight polyethylene (HMWPE), blue in color, and suitable for direct burial.

27-6 THRUST BLOCKING AND RESTRAINED JOINTS

1. Distribution Main (4"-12")

All plugs, caps, tees, or bends with a deflection greater than eleven and a quarter degrees ($11\frac{1}{4}^\circ$) shall be provided with concrete thrust blocks installed as detailed on Standard Drawing 8-3. Nuts or bolt heads of bolted connections shall not be covered by concrete or form materials. The thrust block shall extend from the fitting to undisturbed soil.

Deadman thrust assemblies shall not be allowed without prior approval from the Engineer.

Mechanically restrained joints may be used in lieu of concrete thrust blocks when approved by the Engineer and shall be the type recommended by the manufacturer of the pipe.

geotechnical evaluation.

27-7 APPURTENANCES

1. General

Appurtenances shall comply with the material requirements of these Standard Specifications and shall be installed per the manufacture's recommendations. All new valves and hydrants to open counter-clockwise.

Appurtenances shall be installed at elevations and locations as shown on the Plans. The joints between the main pipe and side fittings shall be restrained in compliance with the Plans, Special Provisions, and these Standard Specifications. The trench bottom shall be graded uniformly to provide a level base for the fittings and minimize torsional strain when the backfill is placed.

On transmission mains, insulated flanged joints shall be provided at every butterfly valve, gate valve, flanged outlet, at each tie-in connection, at fire hydrant connections, at air release valves, at blow-off connections, at intervals of two thousand five hundred feet (2,500') along the water main pipe, and/or as otherwise indicated on the Plans. Insulated joints shall be installed in accordance with the requirements of Section 27-17, "Corrosion Monitoring".

Polyethylene material with a minimum thickness of eight (8) mil shall be placed around the exterior of the appurtenances in accordance with AWWA Standard C105/A21.5. Polyethylene shall be installed in accordance with the requirements of Section 27-17, "Corrosion Monitoring".

2. Fire Hydrants

In no case shall a fire hydrant be installed within three feet (3') of a building or any other structure that would limit access. All hydrants shall be set plumb and installed and located in accordance with Standard Drawing 8-2 in City of Colusa Improvement Standards.

Only ductile iron or polyvinyl chloride pipe shall be used as branch leads that connect fire hydrants to water mains.

Where the Plans indicate that existing fire hydrants are to be removed and salvaged, the salvaged hydrants shall be removed intact and delivered undamaged to the Corporation Yard as directed by the Engineer.

Fire hydrants placed at street intersections shall be installed at the beginning or end of round corners (curb returns) and not be positioned along the arc of the round corner.

Only one six inch (6') or twelve inch (12') fire hydrant extension kit per hydrant shall be allowed. Contractor shall meet the bury depth requirements by use of forty five degree (45o) fittings.

3. Gate Valves

All gate valves shall be restrained in both directions.

Valve operating nut extensions are required in accordance with City of Colusa Improvement Standards when valve nut is in excess of thirty inches (30") below finished grade.

Contractor shall carefully place valve into position, avoiding contact or impact with other equipment, or trench walls. The pipe ends shall be prepared in accordance with the manufacturer's instructions. The water main shall be properly supported to avoid line stress on valve. The pipe/valve joint shall not be deflected nor shall the valve be used as a jack to pull the pipe into alignment.

4. Backflow Prevention Assemblies and Swing Check Valves

The City maintains a backflow prevention and cross-connection control program in accordance with the requirements of Title 17 of the California Administrative Code. Backflow prevention assemblies shall be installed in accordance with the appropriate Standard Drawings in City of Colusa Improvement Standards (Drawing Numbers 8-7 & 8-8). The backflow prevention assembly must be installed such that the device is readily accessible for testing and maintenance, and shall be located as close as practical to the point of service delivery (meter).

The City of Colusa Department of Utilities maintains a list of approved assemblies. Only assemblies that appear on this list are acceptable for installation. Assemblies shall be shipped from the manufacturers in the fully assembled configuration. This includes bypass arrangements and shutoff valves. Assemblies received for installation not completely assembled are not approved. Field conversions of double check assemblies to a detector assembly, or vice versa, are not permitted.

All assemblies shall be installed to provide protection from vandalism and freezing. Cages must be installed so that adequate clearance is available for maintenance and testing or it should be completely removable and allow for any discharge from the relief valve to fully drain from the protective cage or cover.

As a minimum, backflow prevention assemblies shall be sized equivalent to the diameter of the service connection. The installation of backflow prevention assemblies shall be aboveground.

5. Blow-Offs

a. Distribution Mains

Standard two inch (2") and four inch (4") blow-offs shall conform to and be installed in accordance with Standard Drawings 8-12 & 8-13 in City of Colusa Improvement Standards.

b. Transmission Mains

Blow-offs shall be four inches (4") in size and shall conform to and be installed in accordance with Standard Drawing 8-13 in City of Colusa Improvement Standards.

6. Butterfly Valves

Butterfly valves shall conform to and be installed in accordance with section 8-14 and Standard Drawing 8-5 of City of Colusa Improvement Standards.

Value operating nut extensions are required in accordance with Standard Drawing 8-5 in City of Colusa Improvement Standards when valve nut is in excess of thirty inches (30") below finished grade.

Contractor shall carefully place valve into position, avoiding contact or impact with other equipment, or trench walls. The pipe ends shall be prepared in accordance with the manufacturer's instructions. The water main shall be properly supported to avoid line stress on valve. The pipe/valve joint shall not be deflected nor shall the valve be used as a jack to pull the pipe into alignment.

7. Combination Air Vacuum and Release Valves

Combination air vacuum and release valves shall be one inch (1") in size, as indicated on the Plans. Installation of air vacuum and release valves shall conform to and be installed in accordance with Standard Drawing 8-14 in City of Colusa Improvement Standards.

8. Flexible Couplings and Flanged Coupling Adaptors

a. Transmission Mains

The flexible couplings shall be installed with provision for thrust restraint ties attached to the water main pipe. The thrust restraint ties on the pipe shall be welded lugs, lugs cast integrally with the pipe, or friction collars. Anchor studs placed perpendicular to the long axis of the pipe are unacceptable. Resistance to hydraulic thrust shall be adequate to sustain a force developed by a test pressure of two hundred and twenty-five pounds per square inch (225 psi).

Flanged coupling adaptors shall be provided with thrust ties attached to the pipe with welding lugs, cast-in-place lugs, or friction collars. Lugs shall have a minimum thickness equal to that of adjacent flange and shall have holes the same size as those on the flange. Anchor studs placed perpendicular to the longitudinal axis of the pipe are unacceptable.

Contractor shall ensure that the pipe is in proper alignment. Contractor shall clean all dirt, rust, oil or loose scale from pipe ends for a distance of two inch (2") greater than the length of the flanged coupling. Contractor shall check area where gaskets will seat on pipe and flange faces to make sure there are no dents, projections, gouges, etc. that will interfere with the gasket seals. Welds must be ground flush. Bolt tightening should be done evenly, alternating to diametrically opposite positions to bring bolts to recommended tightness.

b. Distribution Mains:

Flexible couplings shall be installed with provisions for thrust restraint.

9. Mechanical Joints

Contractor shall thoroughly clean socket and plain end of all rust or foreign material. The socket, gasket and plain end shall be lubricated with soapy water or an approved pipe lubricant meeting requirements of AWWA C111. The bolts shall be tightened to draw gland toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the joint using torque-measuring wrenches.

10. Valve boxes

Valve boxes shall be furnished and installed in accordance with City of Colusa Improvement Standards.

27-8 PIPE BEDDING AND BACKFILLING OF TRENCHES

Pipe bedding and initial backfill for water mains, fire hydrant branch leads, and water services shall be furnished and placed according to the requirements contained herein and as detailed on Standard Drawing City of Colusa Improvement Standards. The pipe bedding and initial backfill material shall consist of sand meeting the requirements as given in these Standard Specifications unless otherwise specified in the Special Provisions.

Bedding material shall be placed and compacted along the bottom of the trench to provide uniform support for the water main pipe at every point between the joints. Support of the pipe by wedging or blocking shall not be permitted. At the location of each joint, holes of adequate size shall be provided in the bottom and sides of the trench to permit easy joint preparation, pipe assembly, and visual inspection of the entire joint.

Initial backfill shall be placed immediately after pipe joints have been completed, inspected, and passed by the Engineer. Trench backfill shall be earth material, unless otherwise specified in the Special Provisions, placed and compacted above the granular bedding and initial backfill material to the level of the subgrade in paved areas or to the top of the trench in unpaved areas. Backfill shall be provided by Contractor and shall be placed in accordance with Section 14-3 of these Standard Specifications and the pipe manufacturer's recommendations.

Imported granular material may be used to backfill pipe trenches in place of job excavated native material. The imported granular material placed above the initial backfill shall be uniformly graded Class 2 aggregate base, meeting the requirements of Section 10-7 of these Standard Specifications. Compaction and placement requirements for imported granular material shall be the same as required for compaction of job excavated native material.

Full depth select or imported backfill will be required under the following circumstances:

1. At locations where over excavation is required, i.e., butterfly valves, blow-offs, system tie-in connections, insulated joints, etc.
2. At locations where pipes for sewage or drainage cross above the water transmission main pipe.
3. In areas where the trench section is of unusual configuration.
4. Jacking and receiving pits for the boring and jacking of pipe casings.

Full depth select backfill shall be placed in layers not exceeding eight inches (8") in depth and shall extend to the level of subgrade road subbase and to undisturbed earth on the sides. Compaction and placement requirements for full depth select backfill shall be the same as required for compaction of job excavated native material. Unless otherwise specified on the Plans or Special

Provisions, full depth select backfill material shall consist of sand, Class 2 aggregate base or controlled density fill (CDF) meeting the requirements of Section 10 of these Standard Specifications.

27-9 REPAVING WATER PIPE TRENCHES – NO Trench Paving for this project.

Trenches shall be brought to grade even and compacted with class II Aggregate base, compacted to 95% minimum relative compaction, and the entire project shall receive a fabric with an Asphalt Overlay. The remainder of this section shall only apply to trenches off site, i.e. Wescott Road Tie-ins.

Repaving of trenches for water mains, fire hydrant branch leads, and water services shall be as specified in this Section of these Standard Specifications unless otherwise indicated on the Plans or in the Special Provisions

Contractor shall restore all surfaces, which have been removed or damaged by Contractor in kind, using the same material as existing, unless otherwise noted on the Plans or in the Special Provisions. The repaving is to be done in such a manner to, as closely as possible, replace the cut pavement with a similar type and an equal or greater structural section.

Upon completion of trench backfill, existing pavement as well as any curbs, gutters and sidewalks that have been cut or damaged as a result of the construction activities shall be replaced. The replacement of pavement, curb, gutter or other improvements shall match that of the original as close as practical unless otherwise indicated on the Plans. Segments of pavement that were damaged during construction shall be cut to a neat straight line. To form the required "T" trench, the existing pavement shall be ground or saw cut an additional six inches (6") outside the excavated area prior to paving. The minimum pavement section within public street right-of-way shall be four inches (4") of asphaltic concrete over twelve inches (12") of Class 2 aggregate base unless otherwise noted on the Plans or in the Special Provisions.

Aggregate base for repair and/or replacement of existing pavement shall meet the requirements for Class 2 aggregate base as contained in Section 10 of these Standard Specifications. Aggregate base shall be placed and compacted in accordance with Section 14 of these Standard Specifications, except that it shall be compacted to a relative compaction of not less than ninety-five percent (95%) as measured by tests specified in Section 14 of these Standard Specifications.

Asphaltic concrete pavement and its placement shall conform to the requirements of Section 22 of these Standard Specifications.

Restoration of existing concrete pavement shall consist of at least six inches (6") of concrete and shall conform to the requirements of Section 19. Concrete surfaces to be replaced shall be colorized, as necessary, to match existing adjacent concrete color by the addition of Lamp Black coloring agent. Contractor shall submit concrete mix design for approval including a proposed proportion of coloring agent appropriate to the shade of adjacent concrete.

Where entire alley requires replacement, concrete shall not include coloring agent, unless directed by the Engineer.

Concrete used in the repair and/or replacement of curb, gutter, or sidewalk shall conform to Section 24-1 of these Standard Specifications. Concrete used in the replacement of existing concrete "V" gutter or pavement shall be Class "A" concrete in accordance with Section 10 of these Standard Specifications. Placement of concrete shall conform to the requirements of Section 24 of these Standard Specifications.

Where less than two feet (2') of existing pavement is left between the edge of the trench and the lip of concrete gutter or pavement edge, the narrow strip of existing pavement shall be removed and the area repaved along with the area overlying the trench. All existing asphaltic concrete or concrete pavement adjacent to the pipe trench that has been loosened, cracked, or damaged as a result of Contractor's operations shall be removed and replaced.

Unless otherwise provided on the Plans or in the Special Provisions, pipeline trenches in unpaved portions of street rights-of-way shall have the top twelve inches (12") filled with aggregate base Class 2, conforming to Section 10 of these Specifications and compacted to ninety-five percent (95%) relative compaction as determined by ASTM Designation D1557.

All pavement debris and other excavated material not destined to be used for backfill shall be removed and disposed of outside the limits of the project at Contractor's expense.

27-10 WATER SERVICES

Materials for services shall meet the requirements specified in Section 10 and shall be installed in accordance with the Standard Drawings. All new and reconnected services shall have new meters and boxes installed and the old ones returned to the City of Colusa public works department.

The location of water services extending beneath curbs, gutters and sidewalks shall be denoted by imprinting a two inch (2") size Gothic letter "W" on the upper face of the curb, unless otherwise directed by the Engineer.

Service saddles for one inch (1") and two inch (2") services shall be installed in accordance with Standard in City of Colusa Improvement Standards.

Gate valves for water services three inches (3") and larger in diameter shall be installed at the main with a flanged connection and shall include a valve box and riser. Boxes and risers shall be as specified in and installed in accordance with Standard Drawing in City of Colusa Improvement Standards.

No hydrant branch lead, services or fitting (tee, ell, etc.) shall be tapped to accommodate any service.

Water services shall be installed and reconnected to the existing water service locations at the back of the curbs. The existing meters and boxes shall be removed and left undamaged and returned to the public works department. Any lawn, landscaping, landscape irrigation, planters, concrete etc.. that exist at the time of the removal of existing meters and boxes and reconnection, shall be restored to the original conditions or as closely as possible.

27-11 WATER TAPS TO NEW AND EXISTING MAINS

Prior to scheduling taps on new or existing water mains, Contractor shall provide the Engineer a copy of a bacteriological report showing that all piping including on-site fire services, private fire hydrants, and domestic services meet the requirements of these Standard Specifications.

Water taps on new mains prior to being accepted by the City shall be made by Contractor. Water taps on existing City mains shall only be made by City crews at Contractor's expense.

For any given project, a maximum of two (2) water main shutdowns, water main tie-in connections (tap or "cut-in"), or combination thereof directly involving work by the City crews, shall be scheduled per day. Such work performed by City crews will be between 9:00 am and 3:00 pm. Modification to this procedure may be requested by Contractor and will be considered on a case- by-case basis with the final determination to be made by the Engineer.

Contractor shall notify the Engineer that a shutdown is required and the City will schedule the shutdown within five (5) working days of notification. The Engineer will notify Contractor of the time of shutdown at least two (2) working days prior to the shutdown. Contractor shall excavate around the water main, per Standard Drawing W-404, twenty-four (24) hours prior to the City tapping the water main.

Any change made to the vertical and horizontal alignment of water services shall be made behind the sidewalk and outside the City right-of-way. Within the City right-of-way the water services shall be installed perpendicular to the main.

27-12 DISINFECTION OF WATER MAINS

1. General

The intent of this section is to present procedures essential for the disinfection of newly constructed water mains and appurtenances. No new mains shall be connected to existing mains until they have been disinfected in accordance with this section, and pressure tested in accordance with these Standard Specifications. All disinfection and testing shall be made in the presence of the Engineer. The basic procedure consists of the following:

- a. Preventing contaminating materials from entering the water mains during construction.
- b. Disinfecting any residual contamination that may remain.
- c. Determining the bacteriological quality by laboratory testing after disinfection.

Contractor shall furnish all hoses, pumps, gauges, connections, valves, other necessary apparatus, and personnel required for disinfecting, flushing, and disposal of chlorinated water.

Precautions shall be taken to protect pipe interiors, fittings, and valves against contamination during the construction of the water system.

Chlorination and testing of the pipeline shall be in accordance with AWWA C 651 with the following exception: the first bacteria sample after flushing the main is not required. Water distribution mains up to and including twelve inches (12") in diameter shall be disinfected using the Tablet Method or Continuous-

feed Method described in AWWA C 651. Water transmission mains eighteen inches (18") in diameter and greater shall be disinfected using the Continuous-feed Method described in AWWA C 651.

Disinfecting the pipeline may be performed concurrently with the hydrostatic testing in accordance with Section 27-13. In the event repairs are necessary, as indicated by the hydrostatic test, additional disinfecting may be required as directed by the Engineer.

2. Tablet Method

The Tablet Method shall employ the use of a sufficient number of calcium hypochlorite tablets as a disinfectant to yield an average chlorine dose of approximately twenty-five milligrams per liter (25 mg/l). The five-gram (5g) calcium hypochlorite tablets shall contain at least sixty-five percent (65%) available chlorine by weight. These tablets shall meet the requirements of AWWA B 300, standard for hypochlorites.

Because preliminary flushing cannot be performed when tablets are used, cleanliness must be exercised during construction of the water main.

The calcium hypochlorite tablets shall be placed in each section of pipe and also in hydrants, hydrant branches and other appurtenances. They shall be attached by an adhesive at the top of the pipe to prevent washing to the pipe end. If the tablets are fastened before the pipe section is placed in the trench, their position shall be marked on the section to assist in keeping the tablet's position at the top of the pipe.

Number of 5 Gram Calcium Hypochlorite Tablets*					
Pipe Diameter (Inches)	Length of pipe section (feet)				
	13 or less	18	20	30	40
4	1	1	1	1	1
6	1	1	1	2	2
8	1	2	2	3	4
10	2	3	3	4	5
12	3	4	4	6	7

*Based on 3.25 grams of available grams of chlorine per tablet. Any portion of tablet rounded to next highest number.

*Based on 3.25 grams of available grams of chlorine per tablet. Any portion of tablet rounded to next highest number.

The adhesive shall be Permatex No. 1, or approved equal. There shall be no adhesive on the tablet except on the broad side next to the surface to which the tablet is attached. The number of calcium hypochlorite tablets required for main disinfections shown by the table above.

3. Continuous Feed Method

The continuous feed method consists of completely filling the main to remove all air pockets, flushing the completed main to remove particulates, and filling the main with chlorinated potable water so that after a twenty four (24) hour holding period in the main there will be a free chlorine residual of not less than ten milligrams per liter (10mg/l) at all locations in the main.

Prior to being chlorinated the main shall be filled to eliminate air pockets and shall be flushed to remove particulates. The Flushing velocity in the main shall be not less than two and a half feet per second (2.5fps) unless otherwise directed by the Engineer.

A chlorine-water solution shall be applied by means of a solution feed chlorinating device. Care shall be taken to prevent the highly chlorinated water in the pipeline being treated from flowing back into the pipeline supplying the water. At a point not more than ten feet (10') downstream from the beginning of a new main, the concentrated chlorine solution shall be pumped into the main

at a uniform feed rate until the desired chlorine residual (at least 25mg/l) is measured in the flushed water at the terminal outlet. Chlorine application shall not cease until the entire main is filled with chlorinated water. If at any time the application of chlorine is interrupted, the flow of water shall be stopped until chlorine application is resumed.

4. Pipeline Filling

Before filling the pipeline, Contractor shall:

- a. Remove any and all residual water from the entire pipeline to be tested.
- b. Open all air vents.
- c. Furnish a double check valve assembly to make a single supply connection for testing.

A double check valve assembly hook-up to the City water system must be approved by the Engineer prior to water use. The double check valve assembly shall be approved by a certified tester. The certification tags shall be displayed on the double check valve assembly after approval.

Each section of the pipe to be disinfected shall be slowly filled with water at a velocity of less than one foot per second (1fps), and all air shall be expelled from the pipe. The release of the air can be accomplished by opening fire hydrants and service line cocks at the high points of the system and blow-offs at all dead ends. If required, Contractor shall provide a corporation stop at high points to provide air vents and insure that all air is released. The valve controlling the admission of water into the section of pipe to be disinfected should be opened wide before shutting the hydrants or blow-offs. After the system has been filled with water and all the air expelled, all the valves controlling the section to be tested shall be closed.

5. Disinfection, Flushing and Testing

The disinfection, flushing and testing sequence shall be as follows:

- a. Chlorination and testing of the pipeline shall be in accordance with AWWA Standard C651 with the following exception: the first bacteria sample after flushing the main is not required.

- b. The heavily chlorinated water shall be retained in the main for at least twenty-four (24) hours, during which time all valves and

hydrants shall be operated to ensure disinfection of the appurtenances. At the end of the twenty-four (24) hour period, the main shall have a residual of not less than ten milligrams per liter (10 mg/L) of free chlorine or the disinfection procedure shall be repeated using the continuous-feed or other method described in AWWA C651 as directed by the Engineer.

- c. Contractor shall flush the main until the chlorine residual is less than one part per million (1.0 ppm) or matches distribution system chlorine residual level and turbidity is less than one nephelometric turbidity unit (1.0 NTU). The chlorinated water shall be flushed from the system at its extremities and at each appurtenance, using potable water from a source designated by the Engineer. The minimum water velocity during flushing shall be two and a half feet per second (2.5 fps) or as directed by the Engineer. Temporary inlets/outlets shall be sized to provide adequate velocity to flush the main. The minimum inlet/outlet size shall be two inches (2") in diameter.

d. Samples will be collected at locations along the pipeline identified by the Engineer. Contractor shall notify the Engineer at least twenty-four (24) hours in advance of the time that the bacteriological samples are to be drawn for testing. Contractor shall furnish and install temporary sampling devices at the locations indicated by the Engineer spaced no greater than twelve hundred feet (1200') apart.

e. Twenty-four (24) hours after flushing the chlorinated water from the main the Engineer will collect samples for testing.

f. Bacteriological examination of the samples shall meet the following criteria:

i. Total Coliform absent

ii. Total Plate Count less than five hundred (500) colony forming units per milliliter

Re-disinfection, if required due to test failure, shall be performed by Contractor at Contractor's expense. Cost to retest the water will be at Contractor's expense.

The water shall meet State and Federal drinking water standards; Title 22, California Administrative Code and the Safe Drinking Water Act of 1974, as amended.

6. Disposal of Chlorinated Water

After disinfection of the system and prior to coliform bacteria and turbidity testing, chlorinated water shall be disposed of such that water does not flood, inundate or damage property. Contractor shall dechlorinate the water by use of apparatus that injects or mixes EPA approved chemicals with the water to neutralize the chlorine before it is hard piped to a manhole on the nearest storm or sanitary sewer system. Residual chlorine levels shall be reduced and maintained to a maximum of one hundredth of a milligram per liter (0.01 mg/l). Contractor shall test the discharge at fifteen minute (15) intervals to insure that acceptable levels of neutralization are maintained. Discharge shall be stopped if chlorine levels exceed one hundredth of a milligram per liter (0.01 mg/l).

Dechlorinating apparatus shall be the de-chlorinator by Romac Industries or approved equal. All procedures shall be in accordance with manufacturer's recommendations and as approved by the Engineer.

27-13 PRESSURE TESTING WATER MAIN INSTALLATIONS

Following disinfection, Contractor may use the chlorinated water to perform a hydrostatic pressure test of the system. Prior to making final tie-in connections, the entire system shall be pressure tested by Contractor independent of the existing system or systems to be connected.

Contractor shall furnish all hoses, pumps, pressure gauges, leakage measuring devices, connections, relief valves, temporary pressure heads, other necessary apparatus, and personnel required for hydrostatic pressure and leakage testing. Pressure gauges shall register pressure in pounds per square inch gauge (psig). The range of the gauge shall be from zero to two hundred and seventy-five pounds per square inch gauge (0-275 psig). The gauge readings shall have a five (5) psig incremental tick marks. The gauge shall be calibrated within forty-five (45) days of the hydrostatic test and the calibration tag affixed to the gauge. In no case shall there be placement of permanent pavement prior to successful completion of the test. Joints and fittings must be backfilled to the springline of the pipe and the pipe between joints backfilled to a depth necessary to hold the line securely during the test, but in no case less than eighteen inches (18") above pipe. Thrust blocks shall have been in place for at least thirty-six (36) hours if high-early-strength concrete was used or at least seven (7) days if standard concrete was utilized.

A hydrostatic test pressure of one hundred fifty pounds per square inch gauge (150 psig) shall be maintained for 60 minutes. The allowable leakage criterion is "zero". No leakage, as represented by a measurable drop in pressure below the starting test pressure, is allowed.

Contractor shall determine the cause of unacceptable leakage results, take corrective measures, and conduct subsequent tests until the pipeline meets the allowable leakage criteria. Contractor shall perform

any excavation required to locate and repair leaks or other defects that may develop during the test, including removing backfill that has been already placed. The Engineer shall witness the test and Contractor shall provide the Engineer a forty-eight (48) hour notice prior to the test.

Contractor at his expense shall repair any leaks detected by visual inspection regardless whether test results are acceptable.

Contractor shall take all necessary precautions to prevent joints from drawing while the pipelines and their appurtenances are being tested. Any damage to the pipes and their appurtenances, or any other structures, resulting from or caused by these tests, shall be repaired by Contractor at Contractor's expense.

27-14 "CUT-IN" CONNECTION TO EXISTING WATER MAINS

Connection of new water mains to existing mains shall be made only after the newly constructed water mains have been successfully disinfected and pressure tested including onsite fire systems and domestic services.

Contractor shall furnish and install all pipe, fittings, and valve boxes necessary to complete the "cut-in" as shown on Standard Drawing 8-15 in City of Colusa Improvement Standards.

City crews shall perform all shutdowns of existing water mains. See Section 27-11 for water main shut down procedure.

Contractor shall expose the existing water main at the "cut-in" locations per Standard Drawing 8-15 and shall have all material necessary to complete work onsite at least one day prior to the scheduled "cut-in" to the satisfaction of the Engineer. Contractor shall have all necessary manpower and equipment ready at the time of the scheduled "cut-in" necessary to be able to complete the "cut-in" within four (4) hours of the shutdown to the satisfaction of the Engineer. Failure to comply with above-specified requirements shall result in the cancellation of the scheduled shutdown.

New pipe, fittings and valves required for connection but not included in the hydrostatic pressure testing and disinfection procedures shall be disinfected prior to connection in accordance with AWWA Standard C651 relating to "Connections Equal To or Less Than One Pipe Length".

In the connection of new water mains to existing mains, any offset in horizontal or vertical alignment between the exposed ends of new and existing water main pipes that is six inches (6") or greater shall be taken up by the use of elbow fittings. Ninety degree (90°) elbows shall be used only with the Engineer's approval. Deflection of the pipe joints or the use of flexible couplings shall not be permitted.

27-15 SETTING, ADJUSTING AND LOCATING VALVE BOXES

For all new water valves installed, Contractor shall furnish and install valve boxes, covers, drop caps, and steel risers in accordance with Standard Drawing in City of Colusa Improvement Standards. Unless otherwise shown on the Plans, or specified in the Special Provisions, in construction areas involving elevation changes or where existing valve boxes or risers are disturbed, or as indicated on the Plans, Contractor shall furnish and adjust to final grade all existing valve boxes in accordance with Standard Drawing in City of Colusa Improvement Standards. All non-steel risers shall be replaced with steel risers.

Prior to construction Contractor shall furnish locations or swing ties to all existing valves within the streets to be resurfaced. A copy of the valve location measurements shall be provided for the Engineer prior to any street construction or resurfacing.

27-16 ADJUSTING AIR RELEASE VALVES

Contractor shall install new or adjust existing air valve box or manhole head and cover in accordance with Standard Drawing 8-14 in City of Colusa Improvement Standards.

All precast concrete sections used to construct the vaults or manholes for air release valves shall be set in Portland Cement mortar or preformed plastic sealing compound. The preformed plastic sealing

compound and the mixing of the mortar shall meet the requirements specified in Section 10-37 of these Standard Specifications.

The interior and exterior surfaces of the joints of the precast concrete sections shall be coated with Portland Cement mortar. The precast sections shall be cleaned and moistened immediately prior to setting the sections in the mortar. A moistened brush shall be used to apply and smooth the mortar to the interior and exterior joint surfaces of the precast concrete sections.

27-17 PAYMENT FOR FURNISHING AND INSTALLING WATER DISTRIBUTION SYSTEMS

Unless unit bid prices are required by the Special Provisions, payment for the item "Water Distribution System to construct" shall be made at the lineal foot price for water main lines, and per items basis, as outlined by the bid schedule. Such payment shall be full compensation for furnishing all labor, material, tools, and equipment and doing all work involved in cutting, trenching, laying, blocking, making connections, disinfecting, testing, backfilling, compacting, and restoration of disturbed areas behind the curbs, as required herein, on the Plans or in the Special Provisions.

Section 28 Abandon Existing Well(s) on Lot A.

This specification outlines the procedures and requirements for the abandonment of the former municipal groundwater well(s), located on Lot A, along Third Street, to ensure compliance with both state and Colusa County Environmental Health Department regulatory standards. The abandonment shall be performed in accordance with applicable state and local regulations, as well as industry best practices. Lot A contains three well holes, of which two have pumps and motors. The work scope, in summary will be to remove the pumps, motors and shafts, and return them to the City of Colusa Public Works yard, and remove the remainder of equipment and dispose of it. The remainder of the equipment consists of surface piping, an tank and various other remaining equipment. Then each of the three well holes shall be abandoned per the specs below, and left flush with the ground surface. The final outcome will be that Lot A is cleared of all debris and well equipment and left clean.

1.) Well Permit: Contractor shall obtain a Well demolition permit from Colusa County Environmental Health Department.

2. Site Preparation: Prior to abandonment activities, the area surrounding the well shall be cleared of any obstructions, debris, or vegetation that may interfere with the abandonment process.

3. Materials and Equipment:

- Bentonite grout or approved equivalent material for sealing the well.
- Concrete or bentonite chips for filling the annular space between the well casing and borehole.
- Pumping equipment for removing water and cleaning the well.

4. Abandonment Procedure:

- Step 1: Removal of Pump and Appurtenances:
 - The pump and any associated appurtenances shall be removed from the well.
 - Any equipment remaining in the well shall be extracted and properly disposed of.
- Step 2: Sealing of Well Casing:
 - Bentonite grout or approved equivalent material shall be injected into the annular space between the well casing and borehole.
 - The grout shall be pumped under pressure to ensure complete filling of the annular space.
 - The top of the well casing shall be capped and sealed to prevent the intrusion of surface water.
- Step 3: Filling of Borehole:
 - The borehole shall be filled with concrete or bentonite chips from the bottom up to the surface.
 - The filling process shall be conducted in a manner that prevents bridging or voids within the borehole.

5. Quality Control: Quality control measures shall be implemented throughout the abandonment process to ensure compliance with the specified procedures and regulatory requirements. This may include monitoring of grout injection pressures, verification of grout placement, and documentation of activities.

6. Site Restoration: Upon completion of the abandonment activities, the area surrounding the well shall be restored to its original condition, as much as practicable. This includes some minor grading, removal and disposal of all surface equipment.

7. Reporting: A report documenting the abandonment activities shall be prepared and submitted to Colusa County Environmental Health Department. The report shall include details of the abandonment procedures, materials used, and any observations or deviations encountered during the process.

8. Contractor Qualifications: Contractors performing the well abandonment shall possess appropriate qualifications, experience, and equipment necessary to complete the work in accordance with this specification and applicable regulations.

PAYMENT FOR WELL ABANDONMENT LOT A

Payment for the item "Well(s) Abandonment" shall be made on a lump sum basis, as outlined by the bid schedule. Such payment shall be full compensation for furnishing all labor, material, tools, and equipment and doing all work involved in cutting, capping, backfilling, compacting, equipment and piping disassembly and removal, hauling, and disposal.

**Walnut Ranch Unit 1, II, And III
Sanitary Sewer Improvement Project
Volume 3
Technical Specifications**

CITY OF COLUSA

**WALNUT RANCH UNITS I, II, AND III
WATERLINE IMPROVEMENTS PROJECT &
SANITARY SEWER IMPROVEMENTS PROJECT**

LICENSEE RESPONSIBLE FOR SPECIFICATIONS

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Section 10

CONSTRUCTION MATERIALS

This Section describes various classes and types of materials used in public construction within the City of Colusa. Materials to be used for the work and not included in this section shall be described and specified in the Special Provisions.

10-1 PORTLAND CEMENT

Unless otherwise specified in the Special Provisions, all cement used in concrete shall conform to ASTM C 150 and these Specifications, and shall be Type II, unless otherwise specified herein.

ASTM C 150, Type III, Portland cement shall be used for concrete requiring high early strength where specifically required by the Special Provisions.

Type II and Type III Portland cements shall be “low alkali” containing not more than 0.60 percent by weight of alkalies, calculated as the percentage of Na_2O plus 0.658 times the percentage of K_2O .

When directed by the Engineer, Contractor shall furnish certificates of compliance stating that the cement delivered to the work complies with these Specifications.

10-2 CONCRETE AGGREGATES

Unless otherwise specified in the Special Provisions all concrete aggregates shall conform to ASTM C 33, except that grading requirements shall be as specified in Section 10-5 of these Specifications.

10-3 WATER FOR CONCRETE

Water used for mixing concrete and water used for curing concrete shall be clean, free from oil, acid, alkalies, vegetable matter, or other deleterious matter. No water containing excessive amounts of salts, sulphates, or chlorides shall be used.

10-4 PREFORMED EXPANSION JOINT FILLER

Unless otherwise specified in the Special Provisions, preformed expansion joint filler material shall conform to ASTM D 1751.

10-5 PORTLAND CEMENT CONCRETE

1. Composition:

Portland cement concrete (referred to herein as concrete) shall be composed of Portland Cement, fine aggregate, coarse aggregate, admixtures if used, and water.

Concrete shall be designated as one of the following classes:

Class "A" Concrete shall contain six (6) sacks (564 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of one and one-half inches (1½").

Class "B" Concrete shall contain six (6) sacks (564 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of one inch (1").

Class "C" Concrete shall contain five (5) sacks (470 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of one inch (1").

Class "D" Concrete shall contain five (5) sacks (470 pounds) of Portland cement per cubic yard and shall have a maximum size of coarse aggregate of three-quarters inch (¾").

When approved by the Engineer, fly ash conforming to ASTM C 618 may be used to replace up to 20 percent of the Portland cement requirement for Class A and B concrete except that fly ash shall not replace Portland cement for concrete used to pave alleys.

Should the quantity of ingredients designed to produce a cubic yard of finished concrete result in a yield greater than one cubic yard, the relative proportions of fine and coarse aggregates shall be adjusted as necessary to maintain a constant quantity of Portland cement in each cubic yard of concrete.

Contractor shall determine the mix proportions for all concrete to be used in the work. A mix design for each class of concrete used in the work shall be submitted to the Engineer for approval at least five (5) working days prior to the proposed concrete being incorporated into the work.

10-5 PORTLAND CEMENT CONCRETE (cont.)

2. Proportioning:

The coarse and fine aggregates shall be combined in such proportions that the percentage composition by weight of the individual and primary sizes of aggregates and of the combined aggregates, as determined by laboratory screens

and sieves, will be as follows:

GRADING AND COMPOSITION REQUIREMENTS

Sieve Size	Designation and Nominal Size					
	Percentage Passing Sieves					
	Primary Aggregate Sizes			Combined Aggregate Sizes		
	1½x	1" x	Fine	1½"	1"	¾"
¾"	No. 4	Max.		Max.	Max.	
2"	100	--	--	100	--	--
1½"	88-100	100	--	90-100	100	--
1"	1-59	88-100	--	50-86	90-100	100
¾"	0-17	37-100	--	45-75	55-100	90-100
⅜"	0-7	0-53	100	38-55	45-75	60-80
No. 4	--	0-16	95-100	30-45	35-60	40-60
No. 8	--	0-6	65-95	23-38	27-45	30-45
No. 16	--	--	45-85	17-33	20-35	20-35
No. 30	--	--	25-55	10-22	12-25	13-23
No. 50	--	--	10-35	4-9	5-15	5-15
No. 100	--	--	2-10	1-3	1-5	1-5
No. 200	0-2	0-2	0-5	0-2	0-2	0-2

In addition to the above required grading analysis in the primary aggregate size, the distribution of the fine aggregate sizes shall be such that the difference between the total percentage passing the No. 16 sieve and the total percentage passing the No. 30 sieve shall be between 10 and 40; and the difference between the percentage passing the No. 30 and No. 50 sieves shall be between 10 and 40.

Exact proportions of primary aggregate sizes used in the concrete mix shall be as designated and/or approved by the Engineer. The Engineer may adjust the mix to accommodate changes in aggregates and moisture contents, to improve mixing and placing characteristics and to secure maximum quality of the finished concrete.

10-5 PORTLAND CEMENT CONCRETE (cont.)

3. Mixing:

All concrete mixing shall be done in machine batch mixers of an approved type, having a capacity of not less than a full one-sack batch, unless the quantity to be mixed is, in the opinion of the Engineer, too small to justify the use of a

batch mixer. Sacks of cement shall be completely emptied by dumping directly upon other materials previously measured into the mixer, and no splitting of sacks of cement will be allowed, except where Contractor provides suitable equipment approved by the Engineer, the cement may be weighed into the batch from bulk storage.

Mixing shall continue for not less than one (1) minute and in mixers larger than one cubic yard capacity this minimum shall be increased so that minimum mixing time shall not be less than one (1) minute for each cubic yard or part thereof of mixer capacity.

Where transit mixers are used, the mixing period shall conform to the requirements of ASTM C 94.

The total volume of material mixed per batch shall not exceed the rated capacity of the mixer as determined by the standard requirements of the Associated General Contractors of America. All mixing equipment shall be operated at the speeds recommended by the manufacturer, provided, however, that the revolving drum type, except on transit mixers, shall not make less than fourteen (14) or more than eighteen (18) revolutions per minute, and that the rotation rate of transit mixing drums be such as to produce a peripheral speed of approximately two hundred feet (200') per minute. Each paving mixer or stationary mixer shall be equipped with an acceptable timing device.

Should Contractor elect to utilize transit mixing equipment, he shall make adequate advance arrangements for preventing delays in delivery and placing of the concrete. An interval of more than forty-five (45) minutes between any two consecutive batches or loads, or a delivery and placing rate of less than eight (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, 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.

Transit-mixed concrete shall be delivered to the site of the work and discharge shall be completed within ninety (90) minutes after the addition of the cement to the aggregates or before the drum has been revolved 250

10-5 PORTLAND CEMENT CONCRETE (cont.)

revolutions, whichever comes first. In hot weather or under conditions contributing to quick stiffening of the concrete or when the temperature of the concrete is 85 F. or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed forty-five (45) minutes.

A ticket showing volume of concrete and the mix number shall accompany each batch of transit-mixed concrete delivered to the job site. The ticket shall also show the time of day at which the materials were batched.

4. Placing:

The placing of the concrete from a stationary or transit mixer must be done in such a manner as to avoid separation of constituent materials of the concrete. The Engineer shall have the right to stop concrete pouring if the placing of the concrete is improper in this respect.

5. Water Control:

Within the limits hereinafter specified, the amount of water required for the proper consistency of concrete shall be determined by the slump test in accordance with ASTM C 143, except that the ratio of weight of water (water cement ratio) shall not exceed 0.55 unless otherwise approved by the Engineer.

The allowance for slump, unless otherwise directed by the Engineer, shall be as follows:

- a. concrete paving and reinforced structures (heavy sections), not more than three inches (3");
 - b. reinforced structures (thin sections) and columns, not more than four inches (4");
- concrete placed under water, not less than six inches (6") nor more than eight inches (8").

No additional mixing water shall be incorporated into the concrete during hauling or after arrival at the delivery point, unless authorized by the Engineer. If the Engineer authorizes additional water to be incorporated into the concrete, the drum shall be revolved not less than 30 revolutions at mixing speed after the water is added and before discharge is commenced.

10-5 PORTLAND CEMENT CONCRETE (cont.)

If mixing in transit is allowed, the control equipment as above specified

shall be at the proportioning plant and there shall be no water added after the mixture leaves the plant, unless directed by the Engineer.

Contractor shall furnish, without charge, such materials as may be required for making tests of concrete during the progress of the work. Such tests will be made at the expense of the City of Colusa, except that, if tested concrete does not meet required standards, the cost of additional testing shall be borne by Contractor.

No concrete shall be used which has partially set, and no concrete shall be re-tempered or remixed.

10-6 CURING COMPOUNDS FOR CONCRETE

Concrete curing compounds shall be used where specified in these Specifications and the Special Provisions. The compounds shall conform to the requirements of Section 90, "Concrete," of the State Specifications.

10-19 SEWER AND DRAINAGE PIPE

1. Joints

Unless otherwise specified herein, sewer and drain pipes shall have elastomeric gasket joints providing a water tight seal. An exception to this requirement is fusion welded solid wall HDPE. Any leakage in solid wall, fusion jointed HDPE means that a joint is faulty and must be repaired at the contractor's expense.

2. Manhole Connections

Unless otherwise specified, connecting a 24 inch or smaller inside diameter pipe, not cast into the base of a manhole, shall be accomplished by using a coring machine. The annular space between the outside of the pipe and the manhole wall shall be sealed by using a flexible annular space filler such as "Kor-N-Seal Cavity O-Ring" by NPC Inc. or approved equal. Such connection shall be made in conformance with manufacturer's recommendations.

Unless otherwise specified, connecting a pipe with an inside diameter greater than 24 inch to a manhole shall be accomplished by cutting a hole into

the manhole and grouting in the pipe. The hole shall be no more than the pipe outside diameter plus the thickness of the manhole wall. The annular space between the outside surface of the pipe and the hole in the wall shall be filled with non-shrink grout and the pipe shall be properly installed with an approved water stop.

In the connection of the pipe to a drop inlet, the use of a coring machine and flexible annular space filler are not required.

3. Deflection

For all flexible pipe and fittings, the minimum pipe stiffness at 5% deflection shall be 46 PSI according to ASTM D 2412. All flexible conduits shall be tested with a mandrel 5% smaller than the average inside diameter of the pipe no sooner than 96 hours after placement of the backfill. Mandrel tests may be performed by the City after a 6 month period of time at which time a maximum deflection of 7-1/2% from the base I.D. will be allowed. The mandrel used shall be the PHOS PVC Sewer Pipe Deflection Gauge or other deflection gauge approved by the Engineer.

4. Drainage and Sewer Pipe Requirements

The requirements for the various types of pipe are summarized in the following paragraphs:

a. Acrylonitrile-Butadiene-Styrene (ABS)

ABS gravity sewer pipe and fittings in sizes 4" & 6" shall conform to ASTM D 2661. Eight inch (8") and larger in diameter shall conform to either ASTM D 2751, SDR 23.5 or ASTM D 2680 (ABS composite pipe).

Joints shall be solvent cemented (SC). All Service connections shall be installed with "Tee" fittings. Saddles are not approved. When the sewer main is of a material other than ABS, the connection joint to the sewer main shall be made with a flexible adapter manufactured by FERNCO, or approved equal.

b. Closed Profile Poly Vinyl Chloride (CPPVC)

CPPVC pipe with integral bell and spigot joints shall conform to ASTM F 1803. Joints shall be of the bell and spigot type with elastomeric seals conforming to the requirements of ASTM D 3212. Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. Gasket material shall conform to ASTM F 477 and shall be capable of the same water tightness requirements as smooth or solid wall PVC pipe.

c. High Density Polyethylene (HDPE) Solid Wall Fusion Jointed

HDPE pipe shall be as manufactured by Phillips Drisco pipe, a division of Phillips Petroleum company, or equal. The material shall be listed by PPI (Plastic Pipe Institute, a division of the Society of the Plastics Industry) in PPI TR-4 with a 73.4°F hydrostatic design basis of 800 psi. The PPI listing shall be in the name of the pipe manufacturer and shall be based on ASTM D 2837 and PPI TR-3 testing and validation of samples of the pipe manufacturer's production pipe.

Material Requirements - Pipe shall be high molecular weight, high density polyethylene pipe and shall have a standard dimension ratio of 32.5 (SDR 32.5). The material shall have a standard PE code designation of PE 3408 and have a cell classification of 345434C as described in ASTM D 3350. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant from resin of the same specification from the same raw material pipe

The pipe shall be homogeneous throughout and free of visible cracks, bubbles, holes, foreign inclusions or other injurious defects. It shall be uniform in color, opacity, density, and other physical properties and produced to the dimensions and tolerances specified in ASTM F 714. The inside and outside surfaces shall be semi-matte or glossy in appearance. Any pipe not meeting these criteria shall be rejected.

The polyethylene pipe manufacturer shall provide certification that stress regression testing has been performed on the specific product. The said certification shall include a stress life curve per ASTM D 2837. The stress regression testing shall have been done in accordance with ASTM D 2837, and the manufacturer shall provide a product supplying a minimum Hydrostatic Design basis (HDR) of 1,600 psi, as determined in accordance with ASTM D 2837.

The manufacturer's certification shall state that the pipe was manufactured from one specific resin in compliance with these specifications. The certification shall state the specific resin used, its source, and list its compliance to these specifications.

Joints - All joints for the buried polyethylene pipe shall be of the thermal butt fusion type or bolted flanges reinforced with stainless steel.

Fittings - Polyethylene fittings shall be of the same material as the pipe and manufactured by the pipe manufacturer.

d. Polyvinyl Chloride (PVC) - USED FOR THIS PROJECT

PVC drain pipe and fittings, with at least eighteen inches (18") of cover to sub-grade, shall conform to ASTM D 3034 and ASTM F 679 and shall be SDR 35 pipe with elastomeric gasket joints providing a watertight seal.

PVC drain pipe and fittings, with less than eighteen inches (18") of cover to sub-grade, shall be class 100 SDR 25 or 26 pipe conforming to AWWA C 900.

All joints shall be integral wall bell and spigot configuration, factory formed. Pipes at joints are not to be inserted beyond "stop-mark" on spigot end. All service connections shall be installed with "Tee" fittings, gasketed "Tee" saddles with stainless steel bands, or other approved tapping devices. Solvent welded "Wye" saddles are not approved. All rubber rings shall conform to ASTM F 477.

e. Reinforced Concrete Pipe (RCP)

Reinforced concrete pipe shall conform to ASTM C 76 Class III, IV, or V. The class of pipe will be shown on the Plans or indicated in the Special Provisions. Sections of circular pipe with elliptical reinforcing shall have the location of the minor axis of the reinforcing indicated by three inch (3") wide, waterproof, painted stripes on the inside and outside of the pipe at the top and bottom, at least twelve inches (12") long at each end of the pipe section.

Joint materials for concrete pipe shall be rubber gasket joints conforming to the requirements of ASTM C 443 and shall be flexible and able to withstand expansion, contraction, and settlement. All rubber gaskets shall be stored in as cool a place as practicable, preferably at 70° F. or less, and in no case shall the rubber gaskets be exposed to the direct rays of the sun.

Rubber gaskets, of the type requiring lubrication, shall be lubricated with the lubricant recommended and supplied by the manufacturer of the pipe.

f. Vitrified Clay Pipe (VCP)

Vitrified clay pipe shall conform to the specifications for extra strength clay pipe as set forth in ASTM C 700.

Stoppers shall be used with branch pipes that are to be left unconnected. Stoppers for branch pipes having flexible compression joints may be either clay discs with flexible compression joints, factory

applied, that will mate with the branch joint; or a resilient material of controlled design and dimensions for mating with the branch pipe to which it is to be applied; or, of other material approved by the Engineer. Wooden stoppers will not be accepted.

Joint materials for vitrified clay pipe shall be an approved type of factory-made mechanical compression joint conforming to the requirements of ASTM C 425. Banded rubber couplings and sleeves conforming to ASTM C 425 are acceptable.

g. Corrugated Metal Pipe

Corrugated metal pipe may only be used for driveway culverts and shall conform to ASTM A 760, Type 1 or 1R. Minimum depth of cover shall be 6 inches.

h. Corrugated HDPE Pipe

Corrugated High Density Polyethylene (HDPE) pipe may only be used for driveway culverts. HDPE pipe shall have smooth interior and shall be Type S conforming to AASHTO M 252 for four inch (4") through ten inch (10") diameter pipe and to AASHTO M 294 for twelve inch (12") and larger pipe. Provide Grade 2A2 gasketed joints in conformance with ASTM D 1056. Installation shall be in accordance with manufacturer's standards and ASTM D 2321. Minimum depth of cover shall be 12 inches.

i. Glass-Fiber-Reinforced Thermosetting-Resin Pipe

Unless indicated otherwise in the Special Provisions, Glass-Fiber-Reinforced Thermosetting-Resin Pipe shall conform to the requirements of ASTM D 3262 with a pipe stiffness designation C (36 psi).

Section 14

EARTHWORK, EXCAVATION, EMBANKMENT AND SUBGRADE

14-1 ROADWAY EXCAVATION AND BACKFILL

In the Contract this item shall consist of excavating, removing, and satisfactory disposal of all material within the limits of the work for roadways, drainage channels, ditches, and any other work as may be specified in the Special Provisions or shown on the Plans. Suitable excavated material may be used for embankment and for backfilling. The rough excavation shall be carried to such depths that sufficient material will be left above the finished grade to allow for compaction to the required grade. Should

Contractor excavate below the designated lines he will be required to replace the material with suitably compacted import material or Class "D" Concrete as determined by the Engineer, without cost to the City.

No excavation shall be started on a project until approval has been given by the Engineer. This approval is to assure all necessary surveys, cross sections, and measurements which may be required for determining the quantities removed are performed.

If all or part of the excavated material is to be used as fill, and preparation for the fill placement has not been made, the Engineer may require the stockpiling of this material. The Engineer shall have the right to select excavated material to be used in fill.

Payment for excavation shall be based on cross section measurements taken prior to the beginning of work and the final lines and grades of the finished section. Payment shall be made per cubic yard of material excavated in accordance with the Plans.

14-2 STRUCTURE EXCAVATION AND BACKFILL

All compaction test results and test agent information shall be submitted to the Engineer for review and approval. Placement of forms, foundations, or footings shall not begin until the City has received written verification that the compaction test results meet the requirements of this specification.

Structure excavation shall consist of excavation performed to place structures such as footings, walls, manholes, junction boxes, etc. Payment for structure excavation and backfilling shall be considered as included in the prices paid for the various items of work involved and no separate payment will be made therefore.

Excavation for placement of manholes will be paid for under the price bid for manholes, complete in place.

Backfill material shall be specified in the Special Provisions or indicated on the Plans. The backfill material shall be compacted by mechanically tamping in maximum eight-inch (8") layers so as to achieve a minimum relative compaction of ninety-five percent (95%).

Material excavated in excess of that required for backfilling will be disposed of away from the site of the work, unless otherwise permitted by the Engineer.

14-3 TRENCH EXCAVATION AND BACKFILL

Trench excavation shall consist of the excavation required to install pipelines and its cost will not be paid for separately but compensation will be included in the price bid for placing pipe.

Before excavation of the pipe trench in fill areas of roadway embankments, the fill area or embankment shall be completed to a height above the pipe invert grade line of not less than twice the internal pipe diameter or to final fill or embankment subgrade, whichever is lower, but in no case less than twelve inches (12") above the top of the pipe. Such embankment shall be compacted to a minimum relative compaction of ninety percent (90%) for a distance on each side of the pipe equal to a least two (2) pipe diameters. The remainder embankment shall be compacted as specified elsewhere in these Specifications for the type of construction being pre-formed, or as specified in the Special Provisions or the Plans.

Backfill shall be placed as shown on Standard Drawing 7-4, shall be provided by Contractor and shall be placed in accordance with these Standard Specifications and the pipe manufacturer's recommendations. Initial backfill shall be the material between the top of the bedding material and six inches (6") above the top of the bell or barrel if the pipe does not have a bell.

Initial backfill shall be placed immediately after pipe joints have been completed, inspected, and passed by the Engineer. The material shall be carefully placed so as not to disturb or damage the pipe and shall be brought up evenly on both sides. Initial backfill material shall be placed in layers not exceeding eight inches (8") in depth before compaction at or near optimum moisture content. Contractor shall place initial backfill by shovel slicing, tamping, and/or vibratory compaction in order to produce firmly compacted material under the haunches of the pipe. Compaction shall be by mechanical pneumatic or vibratory compaction equipment approved by the Engineer. Care shall be used to avoid dislodging the pipe. No wedging or blocking of the pipe shall be permitted. Ponding and jetting methods of achieving compaction shall

not be allowed. The compacted material must achieve a relative compaction of at least ninety percent (90%) as determined by ASTM D 698.

When the bedding material for the pipe consists of crushed rock, sand shall not be used as initial backfill material.

Unless otherwise approved by Engineer, trench backfill, as shown on Standard Drawing 7-4, shall be provided, and placed to grade by Contractor, in accordance with these Standard Specifications and the pipe manufacturer's recommendations. Trench backfill shall be the material between the initial backfill and the top of trench or sub-grade. The material for trench backfill may be of job excavated, native material provided that such material is free of organic materials or other unsuitable materials as determined by the Engineer that may cause voids or depressions to develop during or after placement of the backfill. Rocks, stones, and solid earth chunks exceeding three inches (3") in greatest dimension shall be removed from the trench backfill material.

Unless otherwise indicated on the Plans or specified in the Special Provisions, trench backfill material shall be placed in layers not exceeding eight inches (8") in depth before compaction at or near optimum moisture content. Until the total backfill above the top of the pipe exceeds three feet (3'), machine-placed backfill material shall not be allowed to "freefall" more than two feet (2').

Unless otherwise shown on the Plans or specified in the Special Provisions, compaction of trench backfill material shall be by mechanical pneumatic or vibratory compaction equipment. Minimum relative compaction of trench backfill material shall be ninety percent (90%) when tested according to ASTM D 1557, except that the top six inches (6") below the subgrade shall be compacted to a relative compaction of ninety-five percent (95%). Trenches in easements outside the street rights-of-way may be compacted to ninety percent (90%) relative compaction throughout the depth. Compaction testing will be performed by the Engineer and the cost thereof will be borne by the City, except that retests of areas which fail to meet the required compaction will be charged to Contractor and deducted from any payment due Contractor for work performed under the terms of the Proposal.

Ponding and jetting methods of achieving compaction are not allowed.

Refer to Section 10-16 Controlled Density Fill (CDF) regarding approval and mix design requirements for use of CDF, CLSM, and/or RFF as an alternate to granular material for initial backfill and trench backfill materials.

14-4 TEMPORARY PAVING - Not Required on this project.

Unless stated otherwise in Contract documents, at the end of the day and

prior to opening to traffic, trenches shall be temporarily paved to provide a smooth riding surface. The paving material may be asphalt concrete or temporary paving, "cut back" or other Engineer approved material. Contractor may use non-skid plates to cover trenching when approved by the Engineer. Contractor shall nail down plates, and at edges Contractor shall create and maintain a uniform taper using temporary paving to ensure a smooth traveling surface over the plate.

Cutback shall be placed on the completed aggregate base course, constructed per the Plans and Special Provisions and shall be placed so that the compacted thickness is not less than two inches (2").

Compaction of temporary paving shall be performed using steel wheel rollers or mechanical equipment approved by the Engineer. Compaction by wheel rolling with backhoes or other rubber tire construction equipment shall not be allowed. The temporary paving shall be placed and maintained so that the maximum deviation does not exceed one-half inch ($\frac{1}{2}$ ") using a ten (10) foot straight edge placed in any direction. If, in the opinion of the Engineer, the temporary paving is not properly maintained, Engineer may direct Contractor to install permanent asphalt concrete pavement at no additional cost to the City of Colusa.

14-5 EMBANKMENT AND FILL

Fill on a roadway will normally be made with material excavated on the same work unless otherwise indicated by the Special Provisions or Plans.

Tests performed to determine relative compaction shall be performed using the following methods:

1. ASTM D 1557 laboratory test for maximum dry density at optimum moisture
2. ASTM D 2922 field test for in-place wet density by nuclear methods.
3. ASTM D 3017 field test for in-place moisture content by nuclear methods.

Relative compaction shall mean the ratio of the field dry density to the laboratory maximum dry density expressed as a percentage.

In general, construction of fill shall be in accordance with the methods set forth in the State Specifications. The relative compaction shall be at least ninety percent (90%), except the top 12" shall be at 90% relative compaction and shall be class II Aggregate base, and brought level with the adjacent asphalt.

14-6 LANDSCAPE RESTORATION

A portion of the sewer services will be installed on private property, most of which will be installed to the back yards where they will be connected to the existing sewer lines upstream (prior) to the septic tanks. The contractor shall document the existing condition of each lot either with electronic photos, or video, that will remain part of the submittal documents requirements prior to commencing construction on any sewer services on private property. The contractor shall employ the type of equipment and construction techniques that minimize disruption to the private property. The contractor shall restore the landscaping, surface, irrigation, fencing, gates, planters, plants, etc.. of all landscape features disturbed or destroyed as a result of the construction. Any and all restoration shall be accounted for in the unit bid price for sewer services, and no additional compensation will be allowed for this work.

14-7 SUBGRADE

Sub-grades for pavement, curb and gutter, sidewalk, lined channels and ditches, or for rock base under pavements shall be finished accurately and true to the lines and sections shown on the Plans, within a tolerance of ± 0.05 feet. The top six inches (6") of sub-grade immediately prior to placing subsequent material thereon shall have a relative compaction of not less than ninety-five percent (95%). The sub-grade shall be free of segregated material and shall be smooth and true to the required grade and cross section. Contractor shall repair, at his expense, any damage to a prepared sub-grade caused by his operations or by use of public traffic. No material shall be placed upon the prepared sub-grade until it is in a condition meeting the requirements specified. Unless otherwise provided by the Special Provisions, the finishing of sub-grade will not be paid for as a separate item but this work will be included by Contractor under such items as Contractor deems appropriate.

14-8 UNSUITABLE MATERIAL/IMPORT

1. Definition

Unsuitable Material for roadway sub-base and trench backfill is defined as soil the Engineer determines to be:

- a. Loose, unstable or yielding, or

- b. Unable to be compacted to specified density using ordinary methods at optimum moisture content, or
- c. Contains visible or excessive deleterious material as determined by the Engineer, or
- d. Too wet to be properly compacted and circumstances prevent processing suitable in-place drying prior to being used as backfill; or
- e. Otherwise unsuitable for planned use.

2. Handling Trench Unsuitable Material

Whenever the bottom of the trench is soft or rocky, or rendered not suitable by the Engineer for pipe bedding, the unsuitable material shall be removed to a minimum depth of six inches (6”), or deeper as determined by the Engineer, for pipelines or twelve inches (12”) for manholes or appurtenant structures. Whenever excavated native soil is rendered by the Engineer to be unsuitable for trench strata backfill, Contractor shall remove and replace with import material approved by the Engineer.

For drainage, sewer and water pipelines the unsuitable material shall be replaced with Class 2 aggregate base or approved equal and shall be compacted to 90% relative compaction. For manholes and appurtenant structures, the unsuitable material shall be replaced with material subject to the approval of the Engineer. The Engineer may direct the Contractor to furnish and place geotextile fabric below the bedding materials. The geotextile material shall be a non-woven fabric equal to or exceeding the properties listed in the table below.

REQUIRED NONWOVEN GEOTEXTILE PROPERTIES		
Physical Property	Test Method	Acceptable Minimum Test Results
Tensile strength, lb	ASTMD 4632	200 lbs.
Elongation, %	ASTMD 4632	50%
Permittivity, sec-1	ASTMD 4491	1.5 sec ⁻¹
Puncture strength, lb	ASTMD 4833	120 lbs.
Mullen Burst strength, psi	ASTMD 3786	380 psi

The cost to remove and replace unsuitable bedding material to the above specified depths shall be included in the specific bid item cost. Excavation of unsuitable material beyond these depths, so ordered removed by the Engineer, will be paid as extra work as provided in Section 4 unless otherwise specified in the Special Provisions.

The cost to haul and replace native soil that is unsuitable for trench strata backfill shall be a separate bid item that includes the import material price and the transporting expenses for both unsuitable and the import material. The cost to replace unsuitable material rendered unsuitable due to any act or omission of Contractor or due to inclement weather shall be borne by Contractor and there will be no compensation therefore.

Excavated unsuitable material shall be the property of Contractor and shall be disposed of away from the project site. For off site disposal, Contractor shall have written permission from the owner upon whose property the disposal is to be made before any material is deposited thereon.

The quantity of unsuitable material/import for trenches shown on the Proposal is for bidding purposes only. The unit price indicated will not be adjusted because the actual quantity varies from the quantity shown on the Proposal.

Payment for handling Unsuitable Material/Import shall be at the contract unit price bid per tonnage of import.

3. Handling Roadway Unsuitable Material

For road sub-grades unsuitable material shall be replaced with pit run base, aggregate base Class II, cement treated bases, lime treated bases, and with geogrid.

Payment for handling Roadway Unsuitable Material/Import shall be at the contract unit price bid per ton, shall be based solely on the tonnage of import, and shall include full compensation for furnishing all labor, materials, tools and equipment, and for performing all work necessary to complete this item in place.

As an alternate the Engineer may direct Contractor to furnish and place geotextile fabric below the bedding materials. The geotextile material shall be a high modulus woven fabric, and shall be inert to commonly encountered chemicals, rot-proof, and resistant to ultraviolet light, insects, and rodents. The geotextile fabric shall have a minimum grab tensile strength of two hundred pounds (200 lbs.) in any direction as measured in accordance with ASTM D 4632, a Mullen burst strength of at least four hundred pounds per square inch (400 psi) per ASTM D 3786, and an Equivalent Opening Size no larger than the U.S. Standard Sieve Number 50 as determined by ASTM D 4751. Geotextile fabric shall be Mirafi 600X or equal. Each roll of fabric shall be handled and placed in accordance with the manufacturer's recommendations. Furnishing and placing of geotextile fabric will be paid for as extra work as defined in 4-6, "Extra Work Force Account" unless otherwise indicated.

Where geogrid is utilized Contractor shall furnish equipment required for satisfactory progress and completion of the project. Before placement of the geogrid, the site shall be cleared of all topsoil, trees, stumps, rocks, and other debris. The grade shall be reasonably smoothed, minimizing all ruts, depressions, and other distortions that would inhibit smooth and proper placement of the geogrid. Geogrid shall be placed in accordance with the suppliers installation recommendations, but in no case shall grid ties be placed less than twenty feet apart or grid overlaps be less than two feet.

Geogrid shall be laid either at the elevation and alignment as shown on the Plans or to the limits approved by the Engineer in the field and shall be oriented such that the roll length runs parallel to the roadway. When geogrid rolls are placed side-by-side, or end-to-end, they shall be overlapped a minimum of two feet or a greater distance recommended by the supplier and approved by the Engineer. Overlap geogrid in the direction that fill will be spread. Geogrid material shall be tensioned by hand and secured to the ground surface.

Care shall be taken to ensure that geogrid sections do not separate at overlaps during construction. Placement of geogrids around corners may require

cutting of geogrid product and diagonal overlapping to ensure that excessive buckling of grid material does not occur. No more than two layers of geogrid are to be placed in direct contact with one another.

When very soft subgrade soils are encountered, fill material placed over the geogrid shall be back dumped from trucks and bladed onto the geogrid in such a manner that the fill rolls onto the geogrid ahead (e.g. by gradually raising the dozer blade while moving forward), Geogrid installation procedures shall be performed so that the geogrid does not “roll” or substantially deflect ahead of the operation and possibly fold over onto itself as this undermines the structural integrity of the geogrid. Care shall be taken during the initial lifts to avoid failing the weak structure of the subgrade by preventing heavy equipment from placing the initial lifts. On firmer but still structurally unsuitable subgrades, pneumatic tired vehicles may operate directly upon the geogrid at slow speeds, less than 5 MPH, provided the geogrid does not require a protective coating.

Tracked construction equipment shall not operate directly on the geogrid. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Care shall be taken by the operators to avoid sudden sharp turning. Fill material shall be placed over the geogrid to depth and dimensions shown on the plans or as approved by the Engineer. The backfill material placed in contact with the geogrid will be the approved aggregate base material or a material with a maximum aggregate size of one and one-half inches (1 ½”) and approved by the Engineer. For damaged or torn geogrids, or for geogrids with protective coatings, any damage to the coating incurred during transportation, storage or installation shall be repaired or replaced to the satisfaction of the Engineer by Contractor at their expense. The coating shall be restored to its original condition.

SECTIONS 15-24 NOT USED FOR THIS PROJECT.

Section 25

SANITARY SEWER MANHOLES

25-1 STANDARD MANHOLES

City standard manholes shall conform to Sections 10, 14, 25, and to the City Standard Drawings. Unless otherwise shown on the Plans or called for in the Special Provisions, only City standard manholes shall be used on City work.

25-2 MANHOLE CASTINGS

Castings for manhole heads and manhole covers shall conform to Section 10-25 of these Specifications. Dimensions of manhole heads and covers shall be as shown on City Standard DrawingS.

25-3 CONSTRUCTION OF MANHOLES

Sanitary sewer and storm drain manholes shall be watertight structures constructed by placing precast concrete sections on a cast in place or precast concrete base. All construction of sewer and storm drain manholes shall be constructed using precast concrete bases.

1. Precast Concrete Sections

Precast concrete sections shall conform to ASTM C 76 for Class III pipe, or C478 for precast reinforced concrete manhole sections. Manhole barrels, pre-cast bases, cones, flat top lids, and grade rings shall conform to the requirements of ASTM C 478. Lifting holes shall be sealed with plastic sealing compound conforming to Section 10-37 on the side facing the soil and grouted smooth on the interior with a non-metallic, non-shrink grout in conformance with Section 10-55.

2. Cone sections

Cone sections shall be constructed of concentric cones except in the following cases:

- a. Eccentric Cone, Type 3A - Manholes 8-foot deep and greater
- b. Eccentric Cone, Type 4 - Manholes for sewer mains 21-inch and larger; storm mains 27-inch diameter and larger
- c. Reduced Height Cone - Manholes for pipe with depths of cover measuring 30 inches to 42 inches above crown of largest

connecting pipe

- d. Flat Top Lid - Manholes for pipe depths of cover of 18 inches to 30 inches above the crown of the largest connecting pipe

3. Concrete Bases, General

Concrete manhole bases may be either cast in place or pre-cast of a type and manufacture as approved by the Engineer. Unless otherwise approved by the Engineer, a minimum of twelve-inches (12") of Type A clean crushed rock conforming to Section 10-14 of these Specifications shall be placed and compacted below the base to provide a firm foundation. If subgrade cannot be compacted using standard construction methods, it will be considered unsuitable material and handled in accordance with Section 14-8 of these Specifications.

Stubs in the base shall match inlet pipe sizes and shall align true with all inlet and outlet pipes (within a tolerance of ± 4 degrees). Reducers will not be permitted. All inlet pipes that enter the manhole at the bases shall be channelized through the manhole with smooth uniform bends toward the direction of flow. In all cases, positive slope for all inlet pipes shall be maintained through the manhole. Two flexible joints shall be provided outside manhole barrel for each pipe connecting to a precast manhole base. Flexible joints shall consist of standard bell and spigot connections. Upon written approval by the Engineer, flexible connectors with stainless steel shear bands as manufactured by Fernco, or equal, may be installed. Joints shall be one pipe diameter apart and a minimum of 24-inches apart. Pipe connections to base shall be grouted in place and made watertight.

Manhole bench shall slope upwards from the spring-line of the pipe to the projected level of the crown of the pipe at the manhole wall, or 12 inches above the spring-line, whichever is less. All holes, cracks, and seams shall be grouted flush with the manhole interior using non-shrink nonmetallic grout in accordance with Section 10-55. All internal surfaces shall be constructed with a smooth and uniform finish.

4. Cast-in-place Bases

Cast in place concrete bases shall be Class "B" concrete as set forth in Section 10-5 of these Specifications. Portland Cement shall be Type II, as set forth in Section 10-1 of these Specifications. Installation of cast in place bases shall require written approval of the Engineer.

5. Manhole Flowlines

Manhole flowlines for main pipe and intersecting mains thirty-six inches (36") or less in diameter shall be constructed of vitrified clay pipe liners. If the

main is “laid through”, flowline material shall be same as the host pipe. PVC flowlines are not allowed.

Where multiple pipes are joined, the host pipe for purposes of this specification is defined as the downstream pipe. If inlet and outlet pipes are of different sizes, new flowline pipe size shall match larger pipe size. If host pipe is not utilized as the flowline, new flowline shall match inlet and outlet pipe elevations and shall extend to inside face of manhole. For host pipes up to 36-inches in diameter, all inlet pipes shall be channelized through the manhole base using clay pipe bends, grouted smooth to prevent the accumulation of debris.

Manholes not constructed in streets shall have three (3), six inch (6”) adjusting rings placed between the top of the cone and the bottom of the manhole head. Top of head to be six inches (6”) above the ground surface.

Manholes constructed in streets shall have the top of the cone within twelve inches (12”) to eighteen inches (18”) of final street grade.

6. Precast Bases

Precast concrete bases and their details shall have the prior approval of the Engineer and shall conform to ASTM C 478 and the Standard Drawings.

Openings in the base that are not connected to a pipe shall be sealed with a watertight plug such as a “Gripper” mechanical wing nut plug by Cherne, or equal, and grouted smooth.

7. Joining Precast Manhole Sections

Preformed plastic sealing compound, in conformance with Section 10-37 of these Specifications, shall be used for joining all precast manhole sections. Prior to application of preformed plastic sealing compound, all joint surfaces shall be thoroughly cleaned. The sealing compound shall be protected from dirt during placing. Ends of the compound shall be joined end-to-end and not joined by overlapping. Squeeze-out on the inside of the manhole shall be neatly trimmed flush with the inside surface.

All surface irregularities and joints in the interior of the manhole shall be grouted smooth with non-shrink metallic grout in conformance with Section 10-55. In areas of high groundwater, the external joint of each barrel section and of the barrel/cone connection shall be sealed with an external rubber sealing wrap as manufactured by Infi-Shield Inc. or equal. The seal shall be made of neoprene and EPDM rubber and have a minimum total thickness of 60 mils. Material shall conform to specifications of ASTM C 923, ASTM C 443, and ASTM F 477.

Material shall extend beyond each side of the joint a minimum of 3-inches, be continuous around the perimeter of the barrel section, and overlapped a

minimum of 6-inches. “High groundwater” will be considered a location where the groundwater reaches the level of the manhole barrel during a typical rainy season.

8. Manhole Chimneys

For manholes constructed in streets, the height of the manhole chimney shall be between six and three-quarters inches (6-¾”) and eighteen inches (18”) and in accordance with these guidelines. In general, manhole precast components shall be selected to produce the minimum practical chimney height. In newly constructed streets, chimney height shall be between six and three-quarters inches (6-¾”) and thirteen inches (13”). On streets with average cross slopes greater than 3% or streets receiving overlays, chimney height shall be between twelve and eighteen inches.

9. Chimney Collars

There shall be a minimum of eight inches (8”) of concrete placed around the head after it is set to the final street grade. The concrete shall extend from two inches (2”) below the top of the manhole cone to a point two inches (2”) below the pavement grade. After the concrete has hardened, the remaining two-inch (2”) space will be filled with asphaltic concrete carefully raked and compacted by approved powered tampers.

10. Concrete Collars (unimproved areas)

For manholes not constructed in streets, three (3), six inch (6”) adjusting rings shall be placed between the top of the cone and the bottom of the manhole head. Top of head shall be a minimum of six inches (6”) above the ground surface. A concrete collar shall be constructed around head a minimum of six inches (6”) wide, from top of cone to top of head.

11. Manhole Location Signs

For manholes not constructed in streets a manhole location sign shall be installed in accordance with these specifications and as directed by the Engineer. The use of concrete for mount stabilization will not be allowed. Sign posts shall be driven a minimum of three feet into the undisturbed or compacted soil. If a stable mount cannot be achieved at minimum sign post mounting heights, greater driven depths must be used in conjunction with longer channel posts. All signs shall be mounted on the wide, or open, side of the channel post. Bolts shall protrude beyond the lock nut by at least a full thread after assembly, and care shall be exercised when tightening the bolts so as not to create a “Dimple” in the aluminum sign.

12. Manhole Connections

Connections to an existing manhole shall be made using a “Core-Bore” technique or other method approved by the Engineer. All connections to sanitary sewer manholes shall be made using a resilient connector conforming to ASTM C 923, as made by Kor-N-Seal, A-LOK, or approved equal, and shall be watertight. For connections not part of the base, the annular space between the resilient connector and the manhole wall shall be filled with a flexible material approved by the pipe manufacturer.

13. Manhole Testing

In areas where ground water is expected, all manholes shall be tested and shall meet the requirements of ASTM C 1244 prior to acceptance. For installations not affected by groundwater a minimum of 25% of manholes shall be tested. At the discretion of the Engineer, a failed test may result in an increased number of manholes to be tested. Manholes shall be tested prior to backfill. If the manhole fails the test at this time, the manhole shall be repaired by Contractor and retested. This procedure shall be repeated until the manhole passes the required test. The Engineer may also require the manholes to be tested using this method after backfilling if he has reason to suspect that the manhole has been disturbed during the backfilling operation, or at other times during construction of the improvements being installed as part of the development.

In order to prepare the manhole for this test, all lift holes shall be plugged and all pipes entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn in to the manhole.

The test procedure shall be as follows:

- a. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
- b. A vacuum of 10 inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time shall be measured for the vacuum to drop to 9 inches of mercury.
- c. The manhole shall pass if the time for the vacuum to drop from 10 inches of mercury meets or exceeds the values indicated in Table 1 of ASTM C 1244.

The vacuum gauge used for this test shall be supplied by Contractor, and

shall have maximum scale division of 0.1 psi, and shall have an accuracy of 0.04 psi. Accuracy and calibration of the gauge shall be certified by a reliable testing firm at six month intervals, or when requested by the Engineer. In addition, the Engineer may compare Contractor's gauge with a City owned gauge at any time. During testing, the vacuum gauge shall be located such that it is readily visible.

Surface restoration shall be in accordance with the section of the General Requirements entitled "Pavement Cutting and Surface Restoration" and shall be paid for under this item of the contract. Pavement cutting shall be perpendicular and parallel to the centerline of the road.

25-4 ADJUSTING MANHOLE LIDS

Existing manholes in streets shall be adjusted to grade when shown on the Plans or called for in the Special Provisions.

Manhole lids shall be raised by wiring the frame to two 2" X 4"'s of sufficient length to span the excavation. The space between the old manhole and the bottom of the lid will then be filled with a cement mortar, conforming to Section 10-37 of these Specifications, poured against a suitable form on the inside of the structure. Concrete will then be poured around the head to a point two inches (2") below the top of the lid. Concrete shall be Class "A" concrete, conforming to Section 10-5 of these Specifications. After the concrete has hardened, the remaining two-inch (2") space will be filled with asphaltic concrete carefully raked and compacted by approved powered tampers.

When adjusting a manhole lid will result in less than six and three-quarters inches ($6\frac{3}{4}$ "), or more than eighteen inches (18") between the top of the cone and final street grade, the cone shall be removed and forty-eight inch or sixty inch (48" or 60") diameter manhole barrels shall be added or removed so that the top of the cone is within six and three-quarters to eighteen inches ($6\frac{3}{4}$ " to 18") of final street grade.

Manhole lids that need to be lowered shall be removed as directed by the Engineer to a depth that will allow the manhole to be reconstructed with the proper cone and to the lines and elevation shown on the Plans. Manholes that require lowering shall be indicated on the Plans or Special Provisions as manholes to reconstruct. Manholes that require raising shall be indicated on the Plans or Special Provisions as manholes to raise.

When manholes are required to be adjusted in a street that is open to traffic, all work involved in adjusting shall be fully completed during the work day so as to permit full use by traffic at 4 p.m. of the same day. Should Contractor be unable to fully complete a manhole by the above time, a temporary asphaltic cutback surface shall be placed in any depression so as to provide a smooth traveling surface until the manhole can be fully completed.

The use of barricades around incomplete manholes during night hours is not permitted.

25-5 FLUSHER BRANCHES

Flusher branches are not permitted for new construction.

25-6 PAYMENT FOR MANHOLES

On unit price Proposals, payment for manholes shall be at the unit price bid per manhole. This price shall include full compensation for all necessary excavation, form work, pre-cast and cast-in-place concrete, furnishing all other material and doing all work necessary to construct the manholes complete in place to the dimensions shown on the Plans or in these Specifications. If shown in the list of bid quantities, the Proposal may require separate unit prices on standard manholes of various depths but if only a single item is shown for standard manholes, then manholes of all depths will be included and shall be paid for at the price bid.

Special manholes, that is, those which may be shown on the Plans which are separately detailed and do not conform to standard manhole details shall be paid for under a separate item or items of the Proposal. The price bid per special manhole shall include full compensation for doing all work and furnishing all material necessary to construct the special manhole as shown on the Plans.

Payment for raising manholes shall be at a unit price bid for manholes, which shall include full compensation for doing all work and furnishing all material necessary to raise or reconstruct the manholes as shown on Plans or Special Provisions.

Section 26

LAYING SEWER PIPE

26-1 EXCAVATION

Trench excavation for all sewer pipe shall conform to standard drawings and the following requirements

Table 26-1.1 - Minimum and Maximum Trench Width (TW) @ Top of Drainage Pipe		
Pipe Inside Diameter (inches)	(Min. Trench Width) Pipe Outside Diameter Plus (inches)	(Max. Trench Width) Pipe Outside Diameter Plus (inches)
33 or less	12	16
36 or greater	12	24

Table 26-1.2 - Minimum and Maximum Trench Width (TW) @ Top of Sewer Pipe		
Pipe Inside Diameter (inches)	(Min. Trench Width) Pipe Outside Diameter Plus (inches)	(Max. Trench Width) Pipe Outside Diameter Plus (inches)
Flexible Pipes		
15 or less	12	24
18 or greater	12	36
Vitrified Clay Pipe		
All Pipe Sizes	24	No Limit

Contractor shall substitute stronger pipe or increased bedding and backfill requirements, subject to approval of the Engineer, **at no extra cost**, if the specified trench width is exceeded by the fault of Contractor. If field conditions do not allow for a trench within the above limitations, at no fault of Contractor, as determined by the Engineer, alternative bedding and backfill requirements shall be incorporated as directed by the Engineer and added cost will be reimbursed as extra work.

At a minimum, the depth of excavation shall be three inches (3") below the outside diameter of the barrel or one inch (1") below the outside diameter of the bell, whichever is deeper.

No tunnels shall be allowed, except when, in the opinion of the Engineer, it is impossible or impracticable to prevent tunneling.

Contractor shall comply with the requirements set forth in paragraph 6-8 "TRENCH SAFETY PLANS", Section 6.

Trenches shall be excavated only as far in advance of pipe laying as can be backfilled in the same day. The maximum total length of open trench shall be five hundred feet (500'). Under no condition shall more than fifty feet (50') of trench remain open overnight. A trench in an existing roadway which is not to be regraded is defined as open until backfilled and paved with temporary surfacing, ready for traffic. Other trenches are defined as being open until backfilled to subgrade or the original ground line. Temporary surfacing is defined in 26-11, "Repaving Trenches".

Contractor, at his/her option, may elect to cut existing sewer services that are encountered or tunnel under them. All sewer services cut by trench excavation shall be replaced before nightfall of the same day. No additional compensation will be paid Contractor for any sewer services purposely or accidentally cut and repaired

26-2 DEWATERING

Contractor shall be responsible for the control, removal, and disposal of any groundwater that may be encountered in the course of excavating and backfilling trenches or placing pipe. Whenever water or over-saturated soil conditions exist which may interfere with proper installation, trenches shall be dewatered to a level twelve inches (12") below the trench bottom before placement of any pipe or material. Unless approved in writing by the Engineer, groundwater and/or water from trench dewatering shall be free of sediment and other construction materials before entering the City storm drain system. A dewatering plan, including a water de-sedimentation plan, shall be submitted to

the Engineer for approval prior to any pumping or discharge of water to the City storm drain system.

26-3 HEALTH AND SAFETY

Contractor is warned that existing sanitary sewers and appurtenances have been exposed to sewage and industrial wastes. These facilities shall therefore be considered contaminated with disease-causing organisms. Personnel in contact with contaminated facilities, debris, wastewater, or similar items shall be advised by Contractor of the necessary precautions that must be taken to prevent infection. It is Contractor's responsibility to urge his personnel to observe a strict regime of proper hygienic precautions, including any inoculations recommended by the local public health officer.

Because of the danger of solvents, gasoline, and other hazardous material in the existing sewers or drains, these areas shall be considered hazardous to open flame, sparks, or unventilated occupancy. Contractor shall be aware of these dangers and shall take the necessary measures to assure his personnel observe proper safety precautions when working in these facilities.

Contractor shall not allow any wastewater to discharge from sanitary sewage collection systems onto adjacent lands or waters. In case of accidental discharge, Contractor at his/her expense shall be responsible for containment, immediate cleanup, and disposal to the full satisfaction of the Engineer. Where containment is not possible, Contractor at his/her expense shall provide adequate disinfection as directed by the Engineer or jurisdictional agency. If, in the opinion of the Engineer, Contractor fails to adequately follow the above guidelines, the City will make arrangements to have the work done by others, and have the cost deducted from amounts owing to Contractor.

26-4 PIPE MATERIALS/TYPES

Sewer and drain pipe shall conform to Sections 10, 26, and 38. The type, class and size of pipe are generally shown on the Plans and/or in the list of quantities contained within the Proposal.

1. Continuous types

Only one type of pipe shall be used between manholes with the exception of changing from Class III to Class IV RCP as long as the pipes are completely compatible with no modifications and both classes of pipe come from the same manufacturer and are of the same manufacturing process.

Prior to the start of work, Contractor shall submit a plan showing types of pipe and locations to the Engineer. Any deviation in the plan thereafter shall not be allowed unless approved in advance by the Engineer.

2. Acceptable Sewer Pipe Types

Sewer pipe types shall be as shown on the Plans or as noted in the Special Provisions and shall be of one of the following types unless otherwise noted: Vitreous Clay (VCP); Closed Profile Polyvinyl Chloride (CPPVC); Polyvinyl Chloride (PVC); Glass Fiber-Reinforced Thermosetting-Resin; calcareous aggregate reinforced concrete (RCP) Class ; or HDPE Solid Wall Fusion Jointed.

26-5 LAYING PIPE

Laying sewer pipe shall conform to Sections 10, 14, 26, and 38. Pipe shall be placed in accordance with the Plans, Special Provisions, manufacturer's recommendations, and as directed by the Engineer.

1. Saw-cutting over existing pipelines

Prior to saw-cutting, Contractor shall mark the exact location of the existing pipeline on the pavement using a ferreting device or equivalent.

2. Manhole connections

All connections to the manholes not cast as part of the manhole base shall be made by use of a coring machine. The annular space between the outside of the pipe and the manhole shall be sealed by using a flexible annular space filler such as "Kor n' Seal Cavity O-Ring" by NPC Inc. or approved equal.

3. Bedding and backfill

Bedding shall be Type A clean crushed rock and shall be placed in accordance with these Standard Specifications and the pipe manufacturer's recommendations. The bedding material shall provide uniform support of the full length of the pipe to a width of at least fifty percent (50%) of the pipe internal diameter. Initial backfill shall be brought to uniformity on each side of the pipe a minimum of 6 inches above the top of the pipe

to prevent distortion or displacement. Consolidation under pipe haunches shall be accomplished by shovel slicing or rodding to assure all voids are filled. A geotextile fabric installed overtop the crushed rock shall then be installed, and then native material may be used up to 12" prior to the trench surface. The top 12" shall be class II aggregate base to the road surface.

Ponding and jetting methods of achieving compaction will not be allowed.

Whenever the bottom of the trench is soft or rocky, or, in the opinion of the Engineer, otherwise unsuitable as a foundation for pipe bedding, the unsuitable material shall be removed to a minimum depth of six inches (6") and replaced with Type D clean crushed rock, "pit run" or cobbles or any combination thereof. Pit run shall have a minimum sand content of 25 and shall be compacted to 90% relative compaction. Cobbles shall be a maximum of 12" and a minimum of 4".

As an alternate to, or in addition to, the bedding materials specified above, the Engineer may direct Contractor to furnish and place geotextile fabric below the bedding materials. The geotextile material shall be a high modulus woven fabric, and shall be inert to commonly encountered chemicals, rot-proof, and resistant to ultraviolet light, insects, and rodents. The geotextile fabric shall have a minimum grab tensile strength of two hundred pounds (200 lbs.) in any direction as measured in accordance with ASTM D 4632, a Mullen burst strength of at least four hundred pounds per square inch (400 psi) per square inch per ASTM D 3786, and an Equivalent Opening Size no larger than the U.S. Standard Sieve Number 50 as determined by ASTM D 4751. Geotextile fabric shall be Mirafi 600X or equal. Each roll of fabric shall be handled and placed in accordance with the manufacturer's recommendations. Furnishing and placing of geotextile fabric will be paid for as extra work as defined in 4-6, "Extra Work, Force Account".

If material more than twelve inches (12") below the typical trench bottom is ordered removed by the Engineer, the excavation below that point and the imported material required to backfill the trench to that elevation will be paid as extra work as provided in Section 4 unless otherwise specified in the Special Provisions. Before excavation of the pipe trench in fill areas of roadway embankments, the fill area or embankment shall be completed to a height above the pipe invert grade line of not less than twice the internal pipe diameter or to final fill or embankment subgrade, whichever is lower, but in no case less than twelve inches (12") above the top of the pipe. Such embankment shall be compacted to a minimum relative compaction of ninety percent (90%) for a distance on each side of the pipe equal to a least two (2) pipe diameters. The remainder of the embankment shall be compacted to the minimum relative compaction specified elsewhere in these Specifications for the type of construction being done, or as specified in the Special Provisions or on the Plans.

eight inches (8") in depth before compaction at or near optimum moisture content. Until the total backfill above the top of the pipe exceeds three feet (3'), machine-placed backfill material shall not be allowed to "freefall" more than two feet (2').

Unless otherwise shown on the Plans or specified in the Special Provisions, compaction of all backfill material shall be by mechanical pneumatic or vibratory compaction equipment. Minimum relative compaction of the trench backfill material shall be ninety percent (90%) when tested according to ASTM D 1557, except that the top six inches (6") below the subgrade shall be compacted to a relative compaction of ninety-five percent (95%). Trenches in easements outside the street rights-of-way may be compacted to ninety percent (90%) relative compaction throughout the depth. Compaction testing will be performed by the Engineer and the cost thereof will be borne by the City, except that retests of areas which fail to meet the required compaction shall be charged to Contractor and deducted from any payment due Contractor for work performed under the terms of the Proposal.

Ponding and jetting methods of achieving compaction shall not be allowed.

Upon written request by Contractor, and upon approval of the Engineer, the trench may completely backfilled to the bottom of the AC pavement with slurry cement or Control Density Fill backfill provided in conformance with 10-16, "Controlled Density Fill". For pipes and conduits two inches (2") and smaller, bedding, initial backfill, and trench backfill shall be slurry cement backfilled, placed to within one and one-half inches (1½") of finished grade.

a. Unstable trench

Contractor may assume that trench side walls may be maintained, without shoring, at a slope of three-quarter vertical to one horizontal (3/4:1). When trench side slopes are not able to be maintained at this slope due to unstable materials or excessively high ground water or both, as determined by the Engineer, and not based on improper or insufficient dewatering nor because of inadequate shoring and not due to any action or negligence of Contractor, the trench shall be considered an unstable trench. When such unstable trenches are encountered, as defined herein, additional effort and materials will be paid for as extra work, as described in Section 4, unless otherwise directed in the Special Provisions.

In areas of trench determined to be unstable, flexible pipe may be used in sizes up to nominal 24-inch diameter. Larger sizes up to and including 42-inch diameter may only be used if submitted with an engineered design for trench details for normal installation and for unstable trench conditions, stamped and signed by an engineer registered in the State of California and with prior written approval by the Engineer. Additional trench width shall also be provided in accordance with manufacturer's recommendations for installation in unstable conditions.

When placing flexible pipes in unstable trench locations, Contractor shall perform that

work necessary to create a stable trench. All work shall conform to pipe manufacturer's recommendations, to ASTM D 2321, and the special provisions. At a minimum, vertical, stable trench walls shall be maintained to 12 inches above the top of the pipe and additional trench width shall be excavated, in accordance with pipe manufacturer's recommendations, to a point 12 inches above the top of

the pipe, and replaced with Type A clean crushed rock. Initial backfill shall be brought to uniformity on each side of the pipe to prevent distortion or displacement. Consolidation under pipe haunches shall be accomplished by shovel slicing or rodding to assure all voids are filled. Remaining initial backfill shall be placed in lifts and then consolidated with vibratory equipment to insure proper compaction.

b. Precast manhole bases

Where pre-cast manhole bases are used, Contractor shall install a flexible bell and spigot joint a horizontal distance of 18-inches to 24- inches from the wall of the manhole.

c. Existing pipe

Existing pipe shall be removed at such places as shown on the Plans or as designated by the Engineer in accordance with Section 13 and the Special Provisions. All removed pipes or portions thereof shall be disposed of by Contractor.

d. Pipe laying, grade and alignment:

After the trench for pipe has been brought to the proper line and grade, the pipe shall be laid in the following manner:

Pipe laying shall proceed upgrade with the bell or groove end of the pipe placed upstream. Each section of pipe shall be laid true to line and grade and in such a manner as to form a watertight, concentric joint with the adjoining pipe. The interior of the pipe shall be cleared of all dirt and debris as the work progresses. Pipe shall not be laid when the condition of the trench or the weather is unsuitable, in the opinion of the Engineer, because of water or mud which may interfere with proper jointing. All open ends of pipe and fittings shall be adequately and securely closed whenever the work is discontinued.

Circular reinforced concrete pipe with elliptical reinforcement shall be placed with the minor axis of the reinforcement in a vertical position.

The pipe shall be laid in strict conformity to the prescribed line and grade and each pipe length checked to the top grade line. Three (3) consecutive points on the same grade of slope shall be used at all times to detect any variation from a straight grade. In case any discrepancy exists, the work shall be stopped and the discrepancy immediately reported to the Engineer. In addition, when requested by the Engineer, a

string line shall be used in the bottom of the trench to insure a straight grade and alignment of the pipe.

At the option of Contractor, grade and alignment controlled by a laser beam system which complies with OSHA requirements may be used. The laser system shall have good visibility when used with suitable target material. The laser system must be of the self-leveling type so that the laser beam is automatically compensated for minute grade disturbances.

The laser system must also have an early warning system that instantly warns the pipe layer when the laser is off grade. The laser system is to be provided by Contractor and shall have a minimum accuracy of ± 0.01 foot per one hundred feet (100') on line; and a minimum visible range of one thousand feet (1000').

Grade tolerance of the flow line of pipe shall not exceed plus or minus 0.05 feet. In addition, the total variation plus and minus from flow line grade shall not exceed 0.05 feet in any twenty-five foot (25') length. Both joint surfaces shall be cleaned before the joints are made. Care shall be used to prevent chipping or cracking of either end of the pipe during installation.

e. Moveable trench support:

When using movable trench support, care should be exercised not to disturb the pipe location, jointing or its embedment. Removal of any trench protection below the top of the pipe and within two and one-half ($2\frac{1}{2}$) pipe diameters of each side of the pipe shall be prohibited after the pipe embedment has been placed and compacted. Movable trench supports shall only be used in either wide trench construction where supports extend below the top of the pipe or on a shelf above the pipe with the pipe installed in a narrow, vertical wall subditch. Any voids left in the trench wall or embedment material by support removal shall be carefully filled with bedding material which shall be adequately compacted. Removal of bracing between sheeting shall only be done where backfilling proceeds and bracing is removed in a manner that does not relax trench support. When advancing trench boxes or shield, there shall be no longitudinal pipe movement or disjointing.

f. Protecting existing sewers and drains:

Mortar or brick plugs shall be installed and maintained in existing manholes as directed by the Engineer in order to prevent surface water, ground water, and debris from entering existing sewer or drain systems during construction. Inflatable plugs will not be permitted. Care shall be

exercised in installing plugs to avoid interrupting service. Plugs shall be removed upon completion of testing as described in 26-10.

26-6 SEWER AND DRAIN SERVICES

Sewer services shall be installed at the points shown on the Plans. All sewer services shall be installed perpendicular to the main unless otherwise shown on the plans or approved by the Engineer. All services, where not connected shall be closed with a stopper or plug of proper size. Where services are carried from the main line to the property line, stoppers shall be placed in the ends of the pipe. Before backfilling, a 2" X 2" redwood post shall be placed with its lower end at the end of the pipe, and its upper end extended vertically twelve inches (12") above the street grade. Where grade of sewer permits, the flow line of a sewer service at the property line shall be four feet (4') below the street grade.

In addition, where curb and gutter exists, or is to be constructed concurrently with sewer facilities, the location of each sewer service shall be permanently indicated by inscribing the letter "S" two inches (2") in height in the curb directly above the line when the service is perpendicular to the street centerline. Otherwise, the "S" mark for skewed or angling services shall be placed at a right angle to the end of the service. When sewer services are installed in an existing street, the curb mark shall be placed at the time the service is installed to assure proper location.

26-7 PIPE JOINTS

All pipes shall have elastomeric gasket joints providing a water tight seal. Joints in pipe shall conform to section 10-19 of these Specifications.

26-8 PROTECTIVE COVERING (NOT USED)

Whenever sewer or drain pipe is laid in trenches at such an elevation that the top of the pipe bell is less than eighteen inches (18") below sub-grade of the street, the pipe must be covered with a protective covering. The concrete used in making the covering shall conform to Portland Cement concrete Class "A", as denoted in these Specifications. As an alternate, C900, C905, or ductile iron pipe with controlled density fill placed as shown in Section 38, Drawing S-250 may be used, as approved by the Engineer.

26-9 TESTING OF PIPE

After laying pipes, backfilling, trench compaction, and before placing any road base or asphalt, sewer and drainage pipelines shall be inspected and tested for obstructions and leakage, unless otherwise specified, as follows.

1. Test for obstructions

All lines or mains shall be cleaned by balling, and any obstructions or irregularities shall be removed or repaired by Contractor. All testing, cleaning and repairing shall be done to the satisfaction of the Engineer. Water used in cleaning shall not be permitted to enter existing sewer or drainage systems. Contractor shall provide all necessary labor, materials, tools and equipment for the tests and shall dispose of all waste, including water at their own expense.

2. Test for leakage

As directed by the Engineer, individual pipeline joints or any section of constructed pipeline shall be tested by the Contractor using the methods listed or described in (3) and (4) of this Section, or the pipe manufacturer's recommendations. An exception to this requirement is HDPE solid wall pipe where only a hydrostatic test for leakage is required as recommended by the manufacturer. For sections of pipe between manholes, no leakage is acceptable for solid wall HDPE. Leakage testing must take place in the presence of the Engineer.

3. Air test for leakage

shall follow ASTM C-1103. Pipeline sections tested at any one time shall be limited to the length between adjacent manholes. The test section shall be pressurized to 3.5 psi and shall be held above 3.0 psi for not less than five (5) minutes. Air shall be added if necessary to keep the pressure above 3.0 psi. At the end of this five (5) minute saturation period, note the pressure (must be 3.0 psi minimum) and begin the timed period. If the pressure drops 0.5 psi in less than the time given in the following table, the section of pipe shall not have passed the test.

Pipe Diameter (inches)	Time Span (seconds)
4	122
6	184
8	245
10	306
12	367
15	460

For larger diameter pipe use the following formula: Minimum time in seconds = 370 X pipe diameter in feet. If the time for the pressure to drop 0.5 psi is less than the time given in the table, the leakage shall be repaired and the line retested until found satisfactory to the Engineer.

When the prevailing ground water is above the pipe being tested, air pressure shall be increased 0.43 psi for each foot the water table is above the invert of the pipe.

House sewer services shall be considered part of the lateral to which they are connected and no adjustment of test time shall be allowed to compensate for the smaller diameter of the house services.

The pressure gauge used shall be supplied by Contractor, shall have minimum divisions of 0.10 psi, and shall have an accuracy of 0.04 psi. Accuracy and calibration of the gauge shall be certified by a reliable testing firm at six-month intervals, or when requested by the Engineer.

4. Hydrostatic test for leakage

Hydrostatic testing of pipeline sections shall be prepared for testing by plugging the upper side of the downstream manhole and all openings in the upstream manhole except the downstream opening. Where grades are steep and excessive heads would result by testing from one manhole to another, test tees, the same size as the main, shall be installed at intermediate points so the maximum head on any section under test shall not exceed twelve feet (12').

A section of line prepared as above shall be tested by filling with water to an elevation five feet (5') above the top of pipe at the upstream end of the test section, or five feet (5') above the existing ground water elevation, whichever is greater. The water shall be introduced into the test section at least four (4) hours in advance of the official test period to allow the pipe and joint material to become saturated with water. The water level shall then again be brought to the five foot (5') mark. At the beginning of the test, the elevation of the water in the upper manhole shall be carefully measured from a point on the manhole rim or test tee. After a period of four (4) hours, or less, with the approval of the Engineer, the water elevation shall be measured from the same point on the manhole rim and the loss of water during the test period calculated. If this calculation is difficult, enough water shall be measured into the upper manhole to restore the water to the level existing at the beginning of the test, and the amount added taken as the total leakage.

The allowable leakage in the test section shall not exceed five hundred (500) gallons per mile per day per inch diameter of pipe tested at the five foot (5') test head, unless otherwise specified. If it is necessary or desirable to increase the test head above five feet (5'), the allowable leakage will be increased at the daily rate of eighty (80) gallons for each foot of increase in head.

Test sections showing leakage in excess of that allowed shall be repaired or reconstructed as necessary to reduce the leakage to that specified above. Water used in testing will not be permitted to enter existing sewer systems.

5. Testing for deflection

For all flexible sewer and drain pipes and fittings, the minimum pipe stiffness ($F/\Delta y$) at 5% deflection shall be 46 PSI in accordance with ASTM D 2412, "External Loading Properties of Plastic Pipe by Parallel-Plate Loading." A deflection test shall be made by Contractor upon completion and acceptance by the Engineer of all backfill operations and prior to the placement of the finished surface, if any. Deflection testing shall be conducted no sooner than 96 hours following completion and acceptance of all backfill operations, unless otherwise approved by the Engineer.

The deflection testing shall be witnessed by the Engineer and shall be conducted by Contractor's forces and performed at the expense of Contractor. One-hundred percent (100%) of all flexible sewer and drain pipe mainline installed shall be deflection tested for excessive deflection using a pre-sized, rigid mandrel or "Go-No-Go" device 5% smaller than the average inside diameter of the pipe as approved by the Engineer. Mandrel tests may be performed by the City after a 6 month period of time at which time a maximum deflection of 7½% from the base internal diameter, as specified in ASTM D 3034 and ASTM D 2680 for PVC or ABS gravity sewer pipe, respectively will be allowed. The mandrel used shall be the PHOS PVC Sewer Pipe Deflection Gauge or other deflection gauge approved by the Engineer.

The mandrel shall be drawn through the pipe using only the force that can be exerted by one individual on the end of a rope, using no mechanical advantage. Under no conditions shall the mandrel device be attached to the cleaning ball.

Pipe which does not pass all specified mandrel tests shall be replaced at Contractor's expense. Re-rounding or other attempts to reduce deflection beyond the allowable shall not be acceptable. All re-tests for deflection shall be made at the expense of Contractor.

6. Closed Circuit T.V. inspection

Unless otherwise directed by the Engineer, Contractor shall perform Closed Circuit TV (CCTV) camera inspections of all new installations of sewer, combined sewer, storm drain pipes, junction boxes, and manholes. Comply with Section 26-12 requirements.

26-10 REPAVING TRENCHES - Not part of this work.

26-11 PROCEDURES FOR CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTIONS OF PIPING SYSTEMS

1. Standards

Unless otherwise directed or approved by the Engineer, CCTV recording performed for acceptance of new pipelines shall conform to the requirements herein. Submit, in accordance with Section 5-7 of these Standard Specifications, one (1) electronic copy of the CCTV video, database, and report on a portable electronic data storage device for approval.

2. Equipment

a. Camera

The camera shall record in color. The footage read-out shall appear on screen away from the central focus of the main. A target shall precede the camera for measuring sags and offsets (size of target shall be noted within the video and on the video label). Target sizes shall be as follows, unless otherwise specified or directed by the City:

<u>TARGET SIZE</u>	<u>PIPE SIZE</u>
¾ inch	≤ 12 inches
1 inch	>12 inches and ≤ 36 inches
2 inches	>36 inches

The focal distance shall be adjustable through a range from 6 inches to infinity. The camera shall be tractor driven with a rotating camera head suitably sized for each pipe diameter to be inspected.

b. Recorder

The recorder shall record in digital video format using MPEG-2 technology or shall be capable of being converted to an MPEG-2 (*.mpg file format) or the latest digital video format compatible with the City's applications without the loss of video quality.

c. Video Quality

The digital video recording shall be a high-resolution video of DVD quality with a minimum of 720 columns of pixels by 480 rows of lines (720x480) with a minimum refresh rate of 60 interlaced fields per second (60Hz or 30 frames per second) as established by the National Television System Committee (NTSC).

d. Lighting

There shall be sufficient lighting to produce a clear and sharp image of the entire inside periphery of the pipe for all conditions encountered during the work. Lighting is to be adjusted according to the size of pipe. In an eight-inch diameter pipe with joints at five-foot intervals, the lighting shall allow the camera to reveal not less than three consecutive joints, or up to ten feet of unobstructed pipe shall be visible in the monitor picture.

e. Locator

A locating device or other acceptable locating method shall be used to locate points of deficiencies on the ground, in green paint, or green flag.

3. Procedure

a. Timing

The Contractor shall notify the Construction Inspector two (2) working days prior to televising the mains to allow the Inspector the option of being on-site at time of televising.

The job is ready for CCTV inspection, only after compaction of street sub-grade and prior to placement of road base. The following must be completed before CCTV inspection:

- i. All underground facilities, utility piping, conduits, and access structures are installed, backfilled, and trench backfill compacted.
- ii. Final joint testing.

b. Schematic

The manholes shall be uniquely identified (e.g., location stationing, letter identifier, consecutive numbering, etc.) on a plan to be provided to the Inspector and the televised segments tied to the assigned manhole reference. Use existing City Mapbook manhole identifiers unless otherwise approved by City. The length of televised run shall be measured from pipe end to pipe end in one contiguous pipeline segment from manhole to manhole. Maximum allowable tolerance for the TV counter shall not exceed 1 foot in 1,000 feet for location accuracy.

c. Camera Run

The main shall be flushed cleaned prior to running the TV camera. TV runs shall not be performed during cleaning operations and shall provide a clear view of the interior of the pipe and manholes. The camera is to be placed in the main with the footage counter at zero (0) at the pipe end within the manhole. The camera is to travel at a speed not to exceed 30 feet per minute with slowdowns at joints and services. Inspect service connections with a rotating camera head. The picture shall be clear and bright enough to allow a photograph of a section to be made. The footage counter, date, and time shall appear on screen at all times, and show the upstream and downstream manhole line segments being televised. All service laterals shall be televised and recorded from point of service cleanout or manhole to City connection on City main or manhole tap.

d. Water Introduction

Prior to performing the TV on new construction, the Contractor must introduce enough water in the pipe segment(s) to fill all low sections and flow through the final downstream structure included within the pipe segment to be inspected. If any section of the pipe segment appears to be dry, additional water must be introduced as described above. The City Inspector will verify the adequacy of water and target size before the TV is performed. The TV must begin within 30 minutes of introducing water into the pipe segment.

e. Recording

The following items are to be recorded on the first 15 seconds of the recording:

- i. Location, subdivision name and/or project name and number
- ii. Date and time
- iii. Upstream and downstream manhole identifier or stationing reference number associated with the project construction plans
- iv. Company name, Operator's name and NASSCO's PACP Certification Number
- v. Direction of travel (e.g.; against flow, with flow)
- vi. Pipe size
- vii. Pipe shape

- viii. Pipe material
- ix. Significant comments

A label shall be affixed to the portable electronic data storage device and jacket or envelope with the above information, start-end footage, and size of target.

Each televised segment shall be preceded by the following:

- i. Location (MH to MH identifier or station reference number associated with the project construction plans)
- ii. main size, type of pipe, pipe shape
- iii. main slope and flow direction
- iv. length of run (measured per asbuilt plans)
- v. number of pipes entering MH and sizes
- vi. number of service connections

The portable electronic data storage device shall be given to the City's Engineer or Construction Inspector and shall become the property of the City of Colusa upon completion of the televised inspection. The City reserves the right to reject any televised inspection not conforming to the requirements herein. Any televised inspection that is rejected shall be re-inspected at the Contractor's expense.

4. Acceptance Criteria

Maximum acceptable sag for sewer pipes is $\frac{3}{4}$ inch, unless otherwise specified in the Special Provisions and the Project Plans. All other criteria as set by the City Standard Specifications and the Contract Documents shall apply for both sewer and drain pipes. Within ten full working days from receipt of the digital video, database, and report, the Inspector shall review and either approve the main(s) or call for repairs. The Contractor is to be notified in writing of any deficiencies revealed by the television inspection that will require repair. If the Contractor is to make repairs and wishes to review the television inspection with the Inspector, the Contractor shall contact the Inspector to set a time for viewing. Upon completion of any repairs, the main is to be re-inspected.

5. Report

Perform and record all CCTV inspections in accordance with the National Association of Sewer Service Companies' (NASSCO's) Pipeline Assessment

Certification Program (PACP). CCTV inspections shall be conducted entirely in digital video format compatible with Granite XP software (version 7, Granite Net or City's most current version), recorded in accordance with section 26-12, 2.b., and stored on a portable electronic data storage device.

CCTV inspection reports shall be accurate to within +/- 2 (two) feet or less of the total measured footage along the pipe from upstream end of the pipe to the downstream end of the pipe or vice versa.

Every section of the pipe (access point to access point) shall be identified on the video display in accordance with section 26-12, 3.d. In addition to inspecting the pipe, all manholes shall be panned with the CCTV camera.

Documentation of the work shall consist of digital video recordings, the PACP CCTV Report(s), and the unmodified PACP database. The database shall contain PACP scoring for each inspection observation or defect. The documentation shall note important features and any defects encountered. One copy of the digital video recording, inspection observation database, and report (one printed copy & one digital copy) shall be submitted to the City on a portable electronic data storage device for approval. With the submission, it shall also include the CCTV Inspection video form (attached to the end of this Section 26) filled with required information.

26-12 PAYMENT FOR SEWER PIPE and Services

Payment for sewer pipe will be at a price bid per lineal foot which will include full compensation for pavement cutting and removal, excavation, trenching, shoring, dewatering, removal and disposal of existing pipe, bedding, furnishing and laying of pipe, initial backfill, trench backfill, manhole connections, temporary paving, final paving and all other work necessary to construct the sewer or drain pipe complete in place as shown on the Plans.

Measurement of such lineal footage shall be the total distance along the centerline of the pipe from the centerline of manhole to centerline of manhole and shall include the straight run of all tees where used.

Payment for clean crushed rock or bedding material provided for use shall be considered as included in the price paid for laying pipe, unless otherwise indicated in the Special Provisions.

Where tee fittings are placed in a main sewer or drain line in connection with sewer or drain services, payment for the fittings shall be considered as included in the price per lineal foot for the main sewer or drain pipe and no deduction or addition will be made to the length of main line laid.

Placing of sewer services will be paid for at the contract unit price bid per service, which price shall include full compensation for furnishing and placing all service pipe from the tee or the fitting in the main sewer or drain line to the property line, installing

a cleanout, and extending the service on private property to intercept the septic tank, and all restoration efforts as described herein on the private property, and furnishing and placing other necessary bends and stoppers to construct the service complete in place.

The cost for testing and inspecting the pipe shall be included in the price bid for the pipe in place.

CCTV Inspections of Pipe Systems (Submission for Sewer/Combine or Storm Drain) Insp Form 020

***** ManHole Inspection is not Included *****

This submission is submitted by, Name: ; Tel: Dept: ; Date: This submission is

Project ID: , CPC or RPC; Project Name: (Phase) Developer, Name:

NASSCO Cert #: or Not Certified

Remarks:

***** *

The submitted items: 1) DVD video; Flash drive Others: 2) NASSCO, PACP Report

***** *

-- Inspection Section --

Type of Tests/Inspections required to be done Before CCTV Inspections Submission

Form with two columns: Sewer and/or Combined Collection System and Storm Drain Collection System. Includes checkboxes for 'those have been tested & passed', fields for Mains and MH test types, verification statements, signature and date lines, and checkboxes for 'Result, attached' and 'No attachment'.

***** CCTV Examiner, Name: ; Tel: ; Date:

Approved, Sign: ; Date:

Reject this submission, By: Date:

- Rejection because of: 1) The said inspection section has not been completed; 2) NSAACO, PACP: Main Inspection with Pipe-Run Graph Report is incomplete; 3) NSAACO, PACP: Observation Report is incomplete; 4) TV the pipe line partial, not from MH to MH; 5) The plug for stub is not wing nut or equivalent device 6) Exceed the maximum acceptable sag for Sewer, 3/4"; Storm

Drain, Additional Comments: ;

----- After the approval of this TV inspection, please call for the project final walkthrough! -----

26-13 SERVICE LATERALS ON PRIVATE PROPERTY**1. Responsibility**

The Contractor shall be responsible for all preparation of work on private property and shall avoid unnecessary removal of trees, unnecessary interference with natural or installed drainage systems, irrigation systems, landscaping or fencing. The Contractor shall be responsible for all claims of damage by a property owner arising from the work on or off the right of way and shall agree to indemnify, save and hold harmless the Owner from any and all suits, claims, actions or damages of any kind whatsoever, including costs of litigation and attorney fees arising from the Contractor's acts or omissions whether upon contract, nuisance, tort or on an alleged taking. The Contractor shall contact property owners whenever feasible and cooperate with the property owner in the placement of the service unless otherwise directed by the Engineer or Owner's representative.

2. Operations

Operations of Contractor shall be conducted with full consideration of all proper and legal rights of the property owner, adjacent property owners and the public, and with the least possible amount of inconvenience to them. In particular, the Contractor is to make every possible effort to avoid damage to trees. Small track backhoes may be required in some cases in order to negotiate the space between trees. Storage of materials shall be selected so as to prevent damage to remaining trees or property owner improvements.

3. Underground utilities

Contractor is cautioned that underground irrigation, drainage, telecom, electrical, or other utility lines may be present on private property, unmarked, and not shown on the plans.

4. Building Sewer

The Contractor shall be responsible for locating existing building sewer and coordinating reconnection locations that provide the best gravity sewer solution with the Engineer and/or Owner. Connection of sewer services shall be performed after sanitary sewer collector lines have been completed, tested and accepted.

5. Disconnection

When disconnection from a septic system and sanitary service connection is made, the existing septic system must be abandoned by pumping out any residual

sludge, and destroying the septic tank in accordance with Technical Specifications section below.

6. Septic system removal

Alternatively, the septic system could be completely removed. If the existing tank is left in place, the bottom slab should be punctured to allow water to drain out, and the ends plugged with grout. Connections and piping to the new sanitary sewer system must be made upstream of the septic tank and must be watertight.

7. Minimum standards

Minimum construction standards, and other requirements hereof, governing materials, joints, infiltration, workmanship and maintenance for sewer mains and laterals shall also apply to service laterals.

8. Trench and backfill

Sewer service lateral trench and backfill shall be in accordance with Technical Specifications section 26-5, and City Standard Detail 7-4. Jetting shall not be allowed.

9. Contractor conduct

The Contractor shall conduct his operations in manner and sequence, which will provide for the continued transportation of wastewater flows during construction. Contractor shall take all actions required to prevent discharge of sewer flow from the system to the ground or any stream. Any construction actions that impede or interrupt flow shall be carefully executed and monitored to prevent surcharging and overflow.

10. Completion

Upon completion of the construction work the contractor shall immediately remove all construction equipment, excess materials, tools, debris, etc., from the site(s) and leave the same in a neat orderly condition acceptable to the Owner. All project areas shall be graded so as to shed water to natural drainage areas, if applicable. The areas shall be raked to a uniform surface free from rocks, clods of earth or other irregularities. All areas shall be left in a clean, neat condition.

11. Payment

Payment for sewer service lines will be at a price bid per per service which will

include full compensation for pavement cutting and removal, excavation, trenching, shoring, dewatering, removal and disposal of existing pipe, bedding, furnishing and laying of pipe, initial backfill, trench backfill, connections, cleanouts, and restoration of private property as described herein, and all other work necessary to construct the sewer or drain pipe complete in place as shown on the Plans.

26-14 SEPTIC TANK DESTRUCTION/ABANDONMENT

1. Licensed contractor

Colusa County Environmental Health (CCEH) strongly recommends that all work be performed by a Licensed Contractor, although some work may be done by do-it-yourself property owners with prior CCEH authorization. All work must meet CCEH and Building Division requirements and pass inspection by the CCEH. A Septic System Destruction Permit must be pulled, and a fee paid to Colusa County Environmental Health.

2. Empty tank

The septic tank must be pumped and certified empty by a Certified Septage Pumper permitted by CCEH.

3. Destroy-in-place

If the tank is to be destroyed in place and is greater than 5' from any existing or future proposed structures, the person performing the work must ensure that the bottom of the tank is broken such that it is unable to hold water, and then filled with self-compacting soil, sand, or pea gravel. Should the person performing the work choose to fill the empty tank with 2-sack slurry, breaking the bottom of the tank is not required. Should the person performing the work choose to remove the tank, the excavation must be backfilled with clean self-compacting soil, sand, or pea-gravel. The tank lid must be removed or may be broken into small pieces and placed into the tank with the gravel, being careful not to create any hollow voids. If the tank is less than 5' from any existing or future proposed structures, a two-sack slurry mixture must be used to fill the tank; otherwise, a Professional Engineer must certify the destruction methodology utilized.

4. Inspection

Arrangements for inspection of the system destruction must be made with CCEH. In some instances, the Licensed Contractor may be able to submit electronic documentation of the destruction process in place of an on-site inspection.

5. Payment

Payment for septic tank abandonment will be at a price bid per per tank which will include full compensation for, pumping the tanks, punching holes in the bottom of the tanks, excavation, trenching, shoring, dewatering, removal, filling the tanks, crushing lids, and disposal of materials, bedding, furnishing and laying of pipe, initial backfill, trench backfill, connections, cleanouts, and restoration of private property as described herein, and all other work necessary to construct the sewer or drain pipe complete in place as shown on the Plans.