

**City of Lathrop
Department of Public Works**

**LOUISE AVENUE PAVEMENT
REHABILITATION
CIP No. PS 18-01
CONTRACT SPECIFICATIONS**



Approved: *Glenn Gebhardt*
Glenn Gebhardt, P.E., City Engineer

Date: July 8, 2020

PROJECT DIRECTORY

CITY PROJECT CONTACTS

City of Lathrop, Public Works Department
390 Towne Centre Drive
Lathrop, CA 95330
Phone: (209) 941-7430
Fax: (209) 941-7449

Ken Reed, Senior Construction Manager
Phone: (209) 941-7430

Robert McGinnis, Senior Construction Inspector
Phone: (209) 992-0701

Larry Backert, Utility and Street Maintenance Superintendent
Phone: (209) 992-0044

Michael King, P.E., Public Works Director
Phone: (209) 941-7430

(END OF SECTION)

TECHNICAL SPECIFICATIONS - SITE WORK

FOR

LOUISE AVENUE PAVEMENT REHABILITATION PROJECT

JULY 2020

These Technical Specifications were prepared under the direction of the following:



Joseph L. Ririe, P.E.

7/8/2020
Date



**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

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(END OF SECTION)

**CITY OF LATHROP - NOTICE INVITING BIDS / NOTICE TO CONTRACTORS
LOUISE AVENUE PAVEMENT REHABILITATION PROJECT, CIP PS 18-01****Designated Essential Critical Infrastructure
Pursuant to Governor's Executive Order No. 33-20 during the
Covid-19 Outbreak Shutdown Order**

The City of Lathrop invites sealed bids for the construction of public improvements for **CIP PS 18-01 Louise Avenue Pavement Rehabilitation Project**, City of Lathrop, California. Sealed bids will be received at the office of the City Clerk of the City of Lathrop, located at 390 Towne Centre Drive, Lathrop, CA until **2:00 PM on Tuesday, August 4, 2020**. Bids submitted by mail shall be addressed to: City of Lathrop, Attention City Clerk / SEALED BID FOR CIP PS 18-01, 390 Towne Centre Drive, Lathrop, CA 95330. The bids will be publicly opened and read at **2:00 PM on Tuesday, August 4, 2020**, in the City of Lathrop Council Chamber.

Contractors considering bidding on this project must attend a mandatory pre-bid meeting to be held at **2:00 PM on Tuesday, July 21, 2020** at 390 Towne Centre Drive, Lathrop, CA 95330.

The scope of work to be performed under this contract is generally described as, but not necessarily limited to: removal and replacement of concrete sidewalk and curb & gutter, full depth reclamation and reconstruction of the road structural section and wearing course, and construction of a 12" water main within a 4,000-foot segment of Louise Avenue.

In accordance with SB 854, all contractors who bid or work on Public Works projects for the City of Lathrop are subject to the following requirements:

- **DIR Registration.** Each Bidder submitting a proposal to complete the work, labor, materials and/or services ("Work") subject to this procurement must be a Department of Industrial Relations registered contractor pursuant to Labor Code Section 1725.5 ("DIR Registered Contractor"). A Bidder who is not a DIR Registered Contractor when submitting a proposal for Work is deemed "not qualified" and the proposal of such a Bidder will be rejected as non-responsive. Pursuant to Labor Code Section 1725.5, all Subcontractors identified in a Bidder's Subcontractors' List shall be DIR Registered Contractors. If awarded the Contract for the Work, at all times during performance of the Work, the Bidder and all Subcontractors, of any tier, shall be DIR Registered Contractors.

The City of Lathrop does not sell copies of the plans and specifications. The plans and specifications may be purchased through ARC Stockton's Plan Well at www.e-arc.com/ca/stockton. Click on "Public Planroom" link, then locate the project. ARC Stockton's location may be contacted to order plans and specifications by phone; (209) 464-8724, or e-mail; stk.branch@e-arc.com.

All communications relative to the administration of this work shall be directed to Ken Reed, Senior Construction Manager, at kreed@ci.lathrop.ca.us, (209) 941-7363 or by calling our Public Works Department at (209) 941-7430.

INSTRUCTIONS TO BIDDERS

BACKGROUND

The City of Lathrop is located in the San Joaquin Valley, 70 miles east of San Francisco, CA and has an approximate population of 25,000 people. The work is part of the City's ongoing Road Maintenance and Repair Program (RMRP), and is funded through a variety of sources, including Senate Bill 1 (SB 1), passed by California voters in 2018. The work will replace the structural section and wearing course, provide a new water main pipe, and road frontage improvements for a segment of Louise Avenue east of Interstate 5.

DESCRIPTION OF WORK

The work to be performed under this contract is generally described as, but not necessarily limited to removal and replacement of concrete sidewalk and curb & gutter, full depth reclamation and reconstruction of the road structural section and wearing course, and construction of a 12" water main within a 4,000-foot segment of Louise Avenue. The Work shall be performed in accordance with the Standard Specifications and the Construction Documents as defined in the General Conditions. The Work shall be complete, and all work, materials, and services not expressly shown or called for in the Construction Documents which may be necessary for the complete and proper construction of the Work in good faith shall be performed, furnished, and installed by the Contractor as though originally specified or shown in said Construction Documents, at no increase in cost to the City.

NOTE: The Rubberized Hot Mix Asphalt (RHMA) course of the road cannot be constructed until Spring, 2021. Therefore, the City will issue two (2) Notices to Proceed (NTP) for the Louise Avenue Pavement Rehabilitation Project, PS 18-01 as follows: the first NTP will be issued to begin work following contract execution and document submittal. After the completion of all other elements of the work except the RHMA work, the City will suspend Working Days and resume counting Working Days after the 10th Working Day following Notice to Proceed for the RHMA work in Spring, 2021. The Contractor shall mobilize their resources accordingly, and no storage of Contractor equipment or materials will be allowed at the Project site during the suspension of work.

This project is partially funded by a Rubberized Pavement Grant from CalRecycle; therefore, the selected Contractor will have to complete and return to the City the CalRecycle form 168 *Reliable Contractor Declaration*. This form and its instructions can be found in Appendix A – Required Forms.

ENGINEER'S ESTIMATE

The engineer's estimate for the work contemplated by the base bid schedule is \$4,800,000.

SITE OF WORK

Bidder is responsible for examining the project site and shall not rely on the following description. The project site is located within the road Right-of-Way of Louise Avenue from Harlan Road to

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TO BIDDERS

Howland Road.

COMPLETION OF WORK

The Contractor shall commence work under this Contract on or before the ten working days after receiving written Notice to Proceed from the City and shall fully complete all work within 75 working days after the Notice to Proceed, subject to provisions contained in the Construction Documents relating to extension of time. The Contractor shall, at all times during the continuance of the Contract, prosecute the work with such force and equipment as are sufficient to complete it within the time specified.

BID

Before submitting a Bid, bidders shall carefully examine and read the Construction Documents, visit the site of the work, fully inform themselves as to all existing site conditions and limitations. Bidders are required to inform themselves fully of the conditions relating to performance of the Work, and must employ, as far as possible, such methods and means in carrying out the Work as will not cause any interruption or interference to any other contractor or operations of the City or any other public agency.

Submission of a Bid shall be considered conclusive evidence that the Bidder has fully studied the Construction Documents, that Contractor has examined the site of the work, and that the Bidder is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the Construction Documents.

Bids shall be properly executed upon the Bid form bound herein and made a part of these Construction Documents. All blank spaces in the Bid forms must be filled in, in black or blue ink. Numbers shall be stated both in words and in figures where indicated on the Bid form, and original, 'wet' signatures are required of all persons signing the Bid form. No changes on the Bid forms are allowed. In case of a difference in written words and figures, the amount stated in written words shall govern unless obviously in error.

SUBMISSION OF BIDS

All Bids must be submitted at the place and before the time prescribed in the Notice to Contractors. It is the Bidders' sole responsibility to see that his Bid is received in proper time. Bids received after that time will not be accepted. Bids will be opened publicly and read aloud immediately after the time for receipt has expired; all interested parties are invited to attend.

Each Bid must be submitted in a non-transparent sealed envelope; if submitted by mail, enclose Bid envelope in another envelope addressed to:

City Clerk,
Attention: Teresa Vargas
City of Lathrop
390 Towne Centre Drive
Lathrop, CA 95330

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The sealed Bid envelope shall, in the lower right portion, be plainly identified with the following information:

- (a) Do not open before 2:00 PM on Tuesday, August 4, 2020
- (b) Bid of: _____ (Name of Bidder) _____, Contractor.
- (c) Louise Avenue Pavement Rehabilitation, PS 18-01

INTERPRETATION OF PLANS AND SPECIFICATIONS

If any person contemplating submitting a Bid is in doubt as to the true meaning of any part of the Construction Documents, or finds discrepancies in or omissions from the Construction Documents, he/she may submit to the City's Project Manager (as listed in Section 00002 Project Directory of these Specifications) a written request for an interpretation or correction thereof. All written requests must be received a minimum of 72 hours prior to bid opening; requests received after this time will not be accepted. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the Construction Documents will be made only by Addendum duly issued and a copy of such Addendum will be mailed or delivered to each person receiving a set of the Construction Documents. The City will not be responsible for any other explanations or interpretations of the Construction Documents. In the interest of providing information to plan holders quickly, Contractors are encouraged to provide email address(es) to the City.

ADDENDA

Any Addenda issued before the time of bid opening are deemed to be made a part of the Construction Documents.

MODIFICATION AND WITHDRAWAL OF BIDS

No modification of bids will be allowed. Any bidder may withdraw its bid, either personally or by telegraphic or written request, if such request is received by the Project Manager prior to the scheduled time for bid opening. Any bid so withdrawn may not be resubmitted.

Bids delivered to the Project Manager at the time set for opening shall be irrevocable, and no bidder may withdraw its bid for a period of 60 days after the date of the opening of bids.

BIDDERS INTERESTED IN MORE THAN ONE BID

No Bidder, whether a person, firm, partnership, corporation, or association, shall be allowed to make, file, or to be interested in more than one Bid for the same work unless alternate bids are called for. A person, firm, partnership, corporation, or association who has submitted a sub bid to a Bidder, or who has quoted prices on materials to a Bidder, is not thereby disqualified from submitting a sub bid or quoting prices to other Bidders.

DISQUALIFICATION OF BIDDERS

More than one Bid for the same work from a person, firm, partnership, corporation, or association

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under the same or different name will not be accepted. Reasonable ground for believing that any person, firm, partnership, corporation, or association is interested in more than one Bid for the same work will cause the rejection of all Bids for the work in which such Bidder is interested. Any or all Bids will be rejected if there is reason for believing that collusion exists among any of the Bidders.

EXPERIENCE OF BIDDERS

Each Bid shall be supported by a statement of the Bidders' experience on the form entitled "INFORMATION REQUIRED OF BIDDER," bound herein. No award of contract will be made to a Contractor who does not hold an active Class "A" license or the appropriate specialty license applicable to the type of work bid upon at the time of opening Bids.

CONTRACTOR'S LICENSE CLASSIFICATION

In accordance with the provisions of California Public Contract Code Section 3300, the CITY OF LATHROP has determined that the Contractor must possess a valid Class "A" license or appropriate specialty license at the time of bid submission and maintain said license throughout completion of work necessary if awarded bid. Failure to possess the specified license shall render the Bid as non-responsive and shall act as a bar to award of the Contract to any bidder not possessing said license at the time of bid submission.

BIDDER'S STATEMENT OF SUBCONTRACTORS

In the form entitled List of Subcontractors, in the Information Required of Bidder and pursuant to Section 4107 of the Public Contract Code, the Bidder shall submit the name and location of the place of business of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work or improvement, or a subcontractor licensed by the State of California who under subcontract to the Bidder specially fabricates and installs a portion of the work, in an amount in excess of one-half of one percent (1/2%) of the Bid. The Bidder shall indicate the portion which will be done by each such subcontractor for each such portion as is defined by the subcontractor in its bid. This listing requirement shall apply to sub-subcontractors of any installation subcontractor which is utilized to install the Work, which sub-subcontractors perform work in excess of one-half of one percent of the Contractor's Total Bid Price. The Contractor shall ensure by Contract that any subcontractor installing the Work fulfills the responsibilities of a prime contractor under Public Contract Code Section 4100, et. seq.

Failure to so list subcontractors is an express statement by the Bidder that it will perform that portion of the work with its own forces. The Bidder may not substitute any person or subcontractor for a listed subcontractor without first obtaining written permission of the Project Manager pursuant to provisions of Section 4107 of the Public Contract Code.

CALIFORNIA WAGE RATE REQUIREMENTS

In accordance with the provisions of California Labor Code Sections 1770, 1773, 1773.1, 1773.6 and 1773.7 as amended, the Director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages in accordance with the standards set forth in Section

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1773 for the locality in which the Work is to be performed. A copy of said wage rates is on file at the office of the City of Lathrop and shall be made available to any interested party on request. It shall be mandatory upon the Contractor to whom the Work is awarded and upon any subcontractor under the Contractor to pay not less than said specified rates to all workers employed by them in the execution of the Work.

DEPARTMENT OF INDUSTRIAL RELATIONS- COMPLIANCE MONITORING UNIT

DIR Registration.

Contractor and Subcontractor Compliance. Strict compliance with DIR registration requirements pursuant to Labor Code Section 1725.5 is a material obligation of the Contractor under the Contract Documents. The foregoing includes without limitation, compliance with DIR Registration requirements at all times during performance of the Work by the Contractor and all Subcontractors of any tier. The failure of the Contractor and all Subcontractors, of every tier, to be DIR registered at all times during the performance of the Work is the Contractor's default of a material obligation of the Contractor under the Contract Documents.

No Subcontractor Performance of Work without DIR Registration. No portion of the Work is permitted to be performed by a Subcontractor of any tier unless the Subcontractor is a DIR Registered contractor.

Contractor Obligation to Verify Subcontractor DIR Registration Status. An affirmative and on-going obligation of the Contractor under the Contract Documents is the Contractor's verification that all Subcontractors, of all tiers, are at all times during performance of Work in full and strict compliance with DIR Registration requirements. The Contractor shall not permit or allow any Subcontractor of any tier to perform any Work without the Contractor's verification that all such Subcontractors are in full and strict compliance with DIR Registration requirements.

Contractor Obligation to Request Substitution of Non-DIR Registered Subcontractor. If any Subcontractor identified in the Contractor's Subcontractor List submitted with the Contractor's proposal for the Work is not DIR Registered at the time of opening of proposals for the Work or if a Subcontractor's DIR registration lapses prior to or during a Subcontractor's performance of Work, the Contractor shall request the CITY's consent to substitute the non-DIR registered Subcontractor pursuant to Labor Code Section 1771.1(c)(3) and/ or Labor Code Section 1771.1(d).

Certified Payroll Records.

Compliance with Labor Code Section 1771.4 and 1776. A material obligation of the Contractor under the Contract Documents is: (i) the Contractor's strict compliance with the requirements pursuant to Labor Code Section 1771.4 and 1776 for preparation and submittal of Certified Payroll Records ("CPR"); and (ii) the Contractor's enforcement of CPR preparation and submittal for all Subcontractors of every tier.

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Express Condition Precedent to Payment of Contract Price. Strict compliance with CPR requirements established pursuant to Labor Code Section 1776 is an express condition precedent to the CITY's obligation to: (i) process any request for payment of any portion of the Contract Price; or (ii) to disburse any portion of the Contract Price to the Contractor. The Contractor shall demonstrate strict compliance with CPR preparation and submittal requirements by delivery to the CITY of electronic files or hard copies of all CPR's submitted by the Contractor and/ or Subcontractors for Work pursuant to Labor Code Section 1771.4 and 1776 concurrently with the submittal thereof to the Labor Commissioner. The CITY: (i) shall not be obligated to process or disburse any portion of the Contract Price; or (ii) shall not be deemed in default of the CITY's obligations under the Contract Documents unless the Contractor's demonstrates strict compliance with CPR preparation and submittal requirements.

PWR Monitoring and Enforcement. During the Work, pursuant to Labor Code Section 1771.4(a)(4), the Department of Industrial Relations shall monitor and enforce the obligation of the Construction and Subcontractors of every tier to pay the laborers performing any portion of the work the PWR established for the classification of work/ labor performed.

AWARD OF CONTRACT

Award of the Contract will be made only to Responsive Responsible Bidders processing the ability to perform successfully, which will be determined by considering such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

Award of the contract shall be made to the responsive responsible bidder whose bid, conforming with all the material terms and conditions of the invitation for bids, is the lowest total base bid shown in the bid schedule. Any challenge or contest of competing bids by Bidders must be submitted to the Project Manager in writing within 3 days from the date of bid opening.

The City of Lathrop hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged businesses including minority and woman owned business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Pursuant to Public Contract Code Section 1103, "Responsive Responsible Bidder" means a bidder who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the public works contract.

BID SECURITY, BONDS AND INSURANCE

Each Bid shall be accompanied by a certified or cashier's check or an approved Bid Bond in the amount of ten percent (10%) of the Total Bid Price payable to the City of Lathrop. Said check or bond shall be made payable to the City and shall be given as a guarantee that the Bidder, if awarded the Work, will enter into a Contract with the City, and will furnish the necessary insurance

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certificates, Payment Bond, and Performance Bond; each of said bonds to be in the amount stated in the Contract. In case of refusal or failure to enter into said Contract, the check or Bid Bond, as the case may be, shall be forfeited to the City. If the Bidder elects to furnish a Bid Bond as its Bid security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it in form.

The successful bidder shall furnish a Performance Bond (100%) and a Payment Bond (50%) of contract price.

The Bond Company acknowledges that the Performance Bond, Payment Bond, and Maintenance (Guaranty) Bond will be separately enforceable until each is separately released by the City of Lathrop. The release of one bond shall not release the remaining bond(s), even if all bonds share the same bond number.

LATHROP CITY COUNCIL RIGHTS RESERVED

The Lathrop City Council reserves the right to accept or reject any or all Bids, to waive any irregularity in a Bid, and to make award to the lowest responsive, responsible Bidder as it may best serve the interest of the City of Lathrop.

EXECUTION OF CONTRACT

The form of Contract, which the successful Bidder as Contractor will be required to execute, is included in the Contract Documents of these Specifications, and should be carefully examined by the Bidder. The Contract will be executed in two original counterparts.

The successful Bidder shall execute and return all original Contract Documents to the Project Manager within 10 calendar days after receipt of the Notice of Award.

The successful Bidder shall also secure all required bonds and insurance and furnish such bonds and certificates of insurance and endorsements indicating proof of coverage, and complete the Guaranty simultaneously with execution of the Contract.

RETAINAGE FROM PAYMENTS

The Contractor may elect to receive 100 percent of payments due under the Construction Documents from time to time, without retention of any portion of the payment by the City of Lathrop, by depositing securities of equivalent value with the City of Lathrop or escrow agent, all in accordance with the provisions of Section 22300 of the Public Contract Code. Such securities, if deposited by the Contractor, shall be valued by the City of Lathrop, whose decision on valuation of the securities shall be final. Securities eligible for Investment under this provision 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 other security agreed to by City of Lathrop and Contractor.

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LIQUIDATED DAMAGES

If the Contractor fails to complete the Work within the time specified for Substantial Completion in the Contract, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the City, as liquidated damages and not as a penalty, the sum of \$1,500 per day for each calendar day beyond the dates set forth in the Agreement that the Contractor fails to achieve Substantial Completion for the Project. The said amount is fixed and agreed on by and between the Contractor and the City because of the impracticability and extreme difficulty of fixing and ascertaining the true value of the damages which the City will sustain by failure of the Contractor to complete the Work on time, including damages, some of which are indefinite, said amount is agreed to be a reasonable estimate of the amount of damages which the City will sustain and said amount shall be deducted from any monies due or that may become due to the Contractor, and if said monies are insufficient to cover said damages, then the Contractor shall pay the amount of the difference.

(END OF SECTION)

BID PROPOSAL FORMS

TO: City of Lathrop
390 Towne Centre Drive
Lathrop, CA 95330

ATTENTION: City Clerk

FOR: **Louise Avenue Pavement Rehabilitation, PS 18-01**

THE UNDERSIGNED, AS BIDDER, HEREBY AGREES AND DECLARES THAT:

LEGAL COMPLIANCE

The only persons or parties interested in this Bid as Principals are those named herein; that this Bid is made without collusion with any other person, firm, partnership, corporation, or association; that he has carefully examined the location of the proposed work and the Construction Documents; and he proposes and agrees that if this Bid is accepted he will contract with the City of Lathrop, in the form of the Contract as set forth in the Construction Documents for said project, to provide all the necessary labor, services, materials, and equipment, and to do all the work and furnish all the materials; and that he will accept in full payment therefore the price as proposed in the following Bid Schedule.

SCHEDULE OF PRICES

All applicable permit fees, licensing costs, sales taxes, State, and/or Federal, and any other taxes, patent rights, or royalties are included in the prices quoted in the Bid. All blank spaces must be filled in.

BASIS OF AWARD

The basis for award of the contract will be the total price of the base bid. The City of Lathrop reserves the right to award only the work contemplated by only the Base Bid, the work contemplated by the Base Bid plus Bid Alternate 1, the work contemplated by the Base Bid plus Bid Alternate 1 plus Bid Alternate 2, or none of the work.

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BID PROPOSAL FORMS

Louise Avenue Pavement Rehabilitation, PS 18-01

BID SCHEDULE

BID ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED TOTAL
1	Mobilization, Bonds & Insurance	1	LS		
2	Traffic Control	1	LS		
3	Storm Water Pollution Prevention Program	1	LS		
4	Construction Staking	1	LS		
5	1/2" HMA (Type A) PG 64-10	226	TN		
6	3/4" HMA (Type A) PG 64-10	12,274	TN		
7	1/2" RHMA (Type G) PG 64-16	4,772	TN		
8	Pulverize 18" and Grade	265,500	SF		
9	Remove & Dispose 9" of Pulverized Material	265,500	SF		
10	Quicklime Soil Treatment 11"	265,500	SF		
11	Cement Soil Treatment 11"	265,500	SF		
12	Quicklime and/or Cement	608	TN		
13	Remove & Replace 8" HMA	1,260	SF		
14	6" Deep Lift Stabilization (Allowance)	10,000	SF		
15	Cold Plane 2-1/2"	4,444	SY		
16	Case "A" Curb Ramp	4	EA		
17	Case "B" Curb Ramp	2	EA		
18	Case "C" Curb Ramp	7	EA		
19	Construct Median Island Type "C" Passageway	1	EA		
20	Remove & Replace/Install PCC Sidewalk	2,338	SF		
21	Remove & Replace/Install PCC Curb & Gutter	246	LF		
22	4" Sch. 40 Conduit	368	LF		
23	Install G-5 Pull Box	8	EA		
24	Lower Manhole Cover	32	EA		
25	Lower Gas Valve Cover	4	EA		
26	Lower Telecommunication Manhole Cover	5	EA		
27	Lower Survey Monument Cover	7	EA		
28	Lower Water Valve Cover	26	EA		
29	Lower Loop Detector Handhole Cover	3	EA		
30	Adjust Manhole Cover to Finish Grade	32	EA		
31	Adjust Gas Valve Cover to Finish Grade	4	EA		
32	Adjust Telecomm. Manhole Cover to Finish Grade	5	EA		
33	Adjust Survey Monument Cover to Finish Grade	7	EA		
34	Adjust Water Valve Cover to Finish Grade	26	EA		
35	Adjust Loop Detector Handhole Cover to Finish Grade	3	EA		
36	Install Blue RPM @ Hydrant	10	EA		
37	12" White Crosswalk/Limit Line (Thermo)	1,750	LF		
38	Striping Detail #9 (Thermo & Markers)	8,000	LF		
39	Striping Detail #25 (Thermo & Markers)	1,458	LF		
40	Striping Detail #27B (Thermo)	130	LF		

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41	Striping Detail #29 (Thermo & Markers)	3,210	LF		
42	Striping Detail #38 (Thermo & Markers)	1,145	LF		
43	Striping Detail #39 (Thermo)	2,240	LF		
44	Striping Detail #39A (Thermo)	600	LF		
45	Striping Detail #40 (Thermo)	115	LF		
46	Striping Detail #41 (Thermo)	95	LF		
47	Pavement Marking Type III (L or R) Arrow (Thermo)	13	EA		
48	Pavement Marking "Bike Lane Symbol" Legend (Thermo)	4	EA		
49	Aerial Target "+" Pavement Legend (Thermo)	2	EA		
50	Irrigation Sleeves	238	LF		
51	Install Sign Post & Signage	4	EA		
52	Remove & Replace Loop Detectors	90	EA		
53	Preserving Survey Monumentation	1	LS		
54	3" Conduit With Mule Tape for Future Interconnect	2,100	LF		
55	12" Water Line (including all appurtenances)	5,410	LF		
56	Blow Off Valve	1	EA		
57	Butterfly Valve	4	EA		
58	Connect to Existing	2	EA		

TOTAL BASE BID: \$ _____

TOTAL BASE BID IN WORDS: _____

BID SCHEDULE CONTINUED ON NEXT PAGE

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BID PROPOSAL FORMS

BID ALTERNATE 1

BID ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED TOTAL
1	Construction Staking	1	LS		
2	Median Planter Material	1	LS		
3	Construct PCC Median Curb	3,080	LF		
4	Construct Stamped Concrete (Median Pavement)	771	SF		
5	3" Sch. 40 Conduit	280	LF		
6	½" RHMA (Type G) PG 64-16 Replaces Bid Item 7 in Base Bid	4,464	TN		
7	Cold Plane 2-1/2" (Replaces Bid Item 15 in Base Bid)	2,255	SY		
8	Striping Detail 25 (Thermo & Markers) (Replaces Bid Item 39 in Base Bid)	4,525	LF		
9	Striping Detail 29 (Thermo & Markers) (Replaces Bid Item 41 in Base Bid)	1,746	LF		

TOTAL BID ALTERNATE 1: \$ _____

TOTAL BID ALTERNATE 1 IN WORDS: _____

BID ALTERNATE 1 AND 2

BID ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	EXTENDED TOTAL
1	Construction Staking	1	LS		
2	Median Planter Material	1	LS		
3	Construct PCC Median Curb	6,364	LF		
4	Construct Stamped Concrete (Median Pavement)	1,896	SF		
5	3" Sch. 40 Conduit	420	LF		
6	½" RHMA (Type G) PG 64-16 Replaces Bid Item 7 in Base Bid	4,147	TN		
7	Cold Plane 2-1/2" (Replaces Bid Item 15 in Base Bid)	0	SF	XXXX	XXXXXXXX
8	Striping Detail 25 (Thermo & Markers) (Replaces Bid Item 39 in Base Bid)	7,803	LF		
9	Striping Detail 29 (Thermo & Markers) (Replaces Bid Item 41 in Base Bid)	35	LF		

TOTAL BID ALTERNATE 1 AND 2: \$ _____

TOTAL BID ALTERNATE 1 and 2 IN WORDS: _____

SECTION 00300

INFORMATION REQUIRED OF BIDDER

The Bidder (Contractor) shall furnish the following information. This information is considered essential in enabling the Project Manager to determine if the Bidder is experienced in similar types of work and if the Bid is based on a careful study of methods applicable to the work and full realization of the various factors which may affect the progress of the work. Failure to comply with this requirement may render the Bid non-responsive and may cause its rejection. Additional sheets shall be attached as required.

BIDDER'S INFORMATION

(1) Bidder's name and address:

(2) Bidder's telephone number: _____

(3) Bidder's fax number: _____

(4) Bidder's Contractor's License (Class): _____

(5) License No.: _____

Expires: _____

(5) Person who inspected site of proposed work for Contractor's firm:
Name: _____ Date of Inspection: _____

(6) List 5 projects of a nature similar to this project completed by the Contractor:

Project	Contract Price	Name, Address and Telephone Number of Owner

SECTION 00300

LIST OF SUBCONTRACTORS:

The Bidder shall list below the name and business address of each subcontractor who will perform work under this Bid in excess of one-half of one percent of the Contractor's Total Bid Price, and shall also list the portion of the WORK which will be done by such subcontractor, in accordance with Section 4107 of the Public Contract Code. After the opening of bids, no changes or substitutions will be allowed except as otherwise provided by law. The listing of more than one subcontractor for each item of work to be performed with the words "and/or" will not be permitted. Failure to comply with this requirement may render the Bid non-responsive and may cause its rejection. Should the Contractor provide a bid that does not require a subcontractor, the Contractor shall note that on this page by writing "Not Applicable" in the list below.

<u>Work to be Performed</u>	<u>Subcontractor License Number</u>	<u>Percent of Total Contract</u>	<u>Subcontractor's Name & Address</u>
1. _____	_____	_____	_____ _____
2. _____	_____	_____	_____ _____
3. _____	_____	_____	_____ _____
4. _____	_____	_____	_____ _____
5. _____	_____	_____	_____ _____
6. _____	_____	_____	_____ _____

Note: Attach additional sheets if required.

SECTION 00300

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

BID PROPOSAL FORMS

ADDENDA

Bidder certifies he reviewed ARC Stockton's Plan Well for addenda within 48 hours of bid opening and acknowledges receipt of the following addendum (addenda):

Respectfully submitted,

_____ Dated

_____ Legal Name of Firm

_____ Signature of Authorized Representative

(Seal)

(If Bidder is a corporation, show State in which incorporated.)

The full names and post office addresses of all persons and parties interested in the foregoing Bid as principals are as follows:

(NOTICE): Give first and last names in full; in case of corporation, give names of President, Secretary, Treasurer, and Manager, and in case of partnerships and joint ventures, give names and Post Office addresses of all the individual members.

SECTION 00300

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

BID PROPOSAL FORMS

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WE _____

as PRINCIPAL, and _____

as SURETY are held; and firmly bond unto the City of Lathrop in the penal sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by the Principal to the City of Lathrop for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made to the City of Lathrop to which the bid was submitted, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by those presents. In no case shall the liability of the surety hereunder exceed the sum of \$ _____.

THE CONDITION OF THIS OBLIGATION IS SUCH,

THAT, WHEREAS, the Principal has submitted the above mentioned bid to the City of Lathrop for certain construction specifically described as follows, for which bids are to be opened at the City Hall, 390 Towne Centre Drive, Lathrop, CA: **Louise Avenue Pavement Rehabilitation, PS 18-01**

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 accordance with the bid, and files two bonds with the City, one to guarantee faithful performance, and the other to guarantee payment for labor and materials as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force.

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

_____ (Seal)

_____ (Seal)

_____ (Seal)

_____ (Seal)

Address: _____

Address: _____

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

SECTION 00300

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

BID PROPOSAL FORMS

NONCOLLUSION AFFIDAVIT

STATE OF _____)
)
COUNTY OF _____) ss.

_____, being first duly sworn, deposes and says that he or she is

_____ of _____ the party making the foregoing 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 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 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 associated, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signature of: President, Secretary,
Manager, Project Manager or Representative

The County of _____

State of _____

Subscribed and sworn to (or affirmed) before me

on this _____ day of _____, 20____, by

_____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal _____

Signature _____

SECTION 00300

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

BID PROPOSAL FORMS

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In accordance 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 SECTION 10232 STATEMENT

In accordance 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.

(END OF SECTION)

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CONTRACT

This Contract, dated _____, is entered into by and between the City of Lathrop, a municipal corporation of the State of California (City), and _____, (Contractor), whose Taxpayer Identification Number is _____.

For and in consideration of the following covenants, terms and conditions, City and Contractor (the parties) agree:

1. Term. This Contract shall commence on, and be binding on the parties on, the date of execution of this Contract, and shall expire on the date of recordation of the Notice of Substantial Completion, or, if no such notice is required to be filed, on the date that final payment is made hereunder, subject to the earlier termination of this Contract.
2. General Scope of Project and Work. Construction Documents for Louise Avenue Pavement Rehabilitation PS 18-01 (Project). Contractor shall furnish labor, services, materials and equipment in connection with the construction of the Project and complete the Work in accordance with the covenants, terms and conditions of this Contract to the satisfaction of City. The Project and Work is generally described as follows:

The work to be performed under this contract includes all work contained in the Construction Documents, as detailed in Paragraph 3 below, including but not limited to removal and replacement of concrete sidewalk and curb & gutter, full depth reclamation and reconstruction of the road structural section and wearing course, and construction of a 12” water main within a 4,000-foot segment of Louise Avenue; and any task necessary to accomplish the aforementioned tasks.

The Work shall be complete, and all appurtenant work, materials, and services not expressly shown or called for in the Construction Documents which may be necessary for the complete and proper construction of the Work in good faith shall be performed, furnished, and installed by the Contractor as though originally specified or shown. The Contractor will be compensated for work actual work performed in accordance with the unit prices and provisions contained in these Construction Documents.

Base Bid Total: \$ _____

3. Construction Documents. This Contract shall include the Construction Documents which are on file with the City Clerk and are hereby incorporated by reference (i.e. Project Specifications, Project Plans, addenda, performance bond, labor and materials bond, certification of insurance, workers compensation certification, and guaranty) and the Bid Documents submitted by _____ on August 4, 2020. For the purposes of construing, interpreting and resolving inconsistencies between the provisions of this Contract, these documents and the provisions thereof are set forth in the order of precedence described in Article 3 of the General Conditions.
4. Compensation. In consideration of Contractor’s performance of its obligations hereunder, City shall pay to Contractor the amount set forth in Contractor’s Bid in accordance with

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the provisions of this Contract and upon the receipt of written invoices and all necessary supporting documentation within the time set forth in the Construction Documents. Contractor hereby shall not be permitted to invoice the City nor accept compensation for work not yet complete. In no event, shall the Contractor be entitled to payment for work not included in the approved scope of work, a written task order, or change order signed by the City's Public Works Director prior to commencement of any work.

5. Insurance. On or before the Date of Execution, Contractor shall obtain and maintain the policies of insurance coverage described in Section 5.2 of the General Conditions on terms and conditions and in amounts as may be required by the City. City shall not be obligated to take out insurance on Contractor's personal property or the personal property of any person performing labor or services or supplying materials or equipment under the Project. Contractor shall furnish City with the certificates of insurance and with original endorsements affecting coverage required under this Contract on or before the Date of Execution. The certificates and endorsements for each insurance policy shall be signed by a person who is authorized by that insurer to bind coverage in its behalf. Proof of insurance shall be mailed to the Project Manager to the address set forth in Section 15 of this Contract.
6. Indemnification. Contractor agrees to protect, defend, indemnify and hold City, its City Council members, officers, employees, engineer, and construction manager harmless from and against any and all claims, demands, liabilities, losses, damages, costs, expenses, liens, penalties, suits, or judgments, arising in whole or in part, directly or indirectly, at any time from any injury to or death of persons or damage to property as a result of the willful or negligent act or omission of Contractor, or which results from Contractor's noncompliance with any Law respecting the condition, use, occupation or safety of the Project site, or any part thereof, or which arises from Contractor's failure to do anything required under this Contract or for doing anything which Contractor is required not to do under this Contract, or which arises from conduct for which any Law imposes strict liability on Contractor in the performance of or failure to perform the terms and conditions of this Contract, except as may arise from the sole willful or negligent act or omission of City or any of its City Council members, officers, employees. This indemnification shall extend to any and all claims, demands, or liens made or filed by reason of any construction, renovation, or remodeling work performed by Contractor under this Contract at any time during the term of this Contract, or arising thereafter.
7. Assumption of Risk. Contractor agrees to voluntarily assume any and all risk of loss, damage, or injury to the property of Contractor which may occur in, on, or about the Project site at any time and in any manner, excepting such loss, injury, or damage as may be caused by the sole willful or negligent act or omission of City or any of its City Council members, officers, or employees.
8. Waiver. The acceptance of any payment or performance, or any part thereof, shall not operate as a waiver by City of its rights under this Contract. A waiver by City of any breach of any part or provision of this Contract by Contractor shall not operate as a waiver or continuing waiver of any subsequent breach of the same or any other provision, nor shall any custom or practice which may arise between the parties in the administration of any

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part or provision of this Contract be construed to waive or to lessen the right of City to insist upon the performance of Contractor in strict compliance with the covenants, terms and conditions of this Contract.

9. Compliance with Laws. Contractor shall comply with all Laws now in force or which may hereafter be in force pertaining to the Project and Work and this Contract, with the requirement of any bond or fire underwriters or other similar body now or hereafter constituted, with any discretionary license or permit issued pursuant to any Law of any public agency or official as well as with any provision of all recorded documents affecting the Project site, insofar as any are required by reason of the use or occupancy of the Project site, and with all Laws pertaining to nondiscrimination and affirmative action in employment and hazardous materials.

DEPARTMENT OF INDUSTRIAL RELATIONS- COMPLIANCE MONITORING UNIT

DIR Registration.

- a) Contractor and Subcontractor Compliance. Strict compliance with DIR registration requirements pursuant to Labor Code Section 1725.5 is a material obligation of the Contractor under the Contract Documents. The foregoing includes without limitation, compliance with DIR Registration requirements at all times during performance of the Work by the Contractor and all Subcontractors of any tier. The failure of the Contractor and all Subcontractors of every tier to be DIR registered at all times during the performance of the Work is the Contractor's default of a material obligation of the Contractor under the Contract Documents.
- b) No Subcontractor Performance of Work Without DIR Registration. No portion of the Work is permitted to be performed by a Subcontractor of any tier unless the Subcontractor is a DIR Registered contractor.
- c) Contractor Obligation to Verify Subcontractor DIR Registration Status. An affirmative and on-going obligation of the Contractor under the Contract Documents is the Contractor's verification that all Subcontractors, of all tiers, are at all times during performance of Work in full and strict compliance with DIR Registration requirements. The Contractor shall not permit or allow any Subcontractor of any tier to perform any Work without the Contractor's verification that all such Subcontractors are in full and strict compliance with DIR Registration requirements.
- d) Contractor Obligation to Request Substitution of Non-DIR Registered Subcontractor. If any Subcontractor identified in the Contractor's Subcontractor List submitted with the Contractor's proposal for the Work is not DIR Registered at the time of opening of proposals for the Work or if a Subcontractor's DIR registration lapses prior to or during a

Subcontractor's performance of Work, the Contractor shall request the CITY's consent to substitute the non-DIR registered Subcontractor pursuant to Labor Code Section 1771.1(c)(3) and/ or Labor Code Section 1771.1(d).

Certified Payroll Records

- a) Compliance with Labor Code Section 1771.4 and 1776. A material obligation of the Contractor under the Contract Documents is: (i) the Contractor's strict compliance with the requirements pursuant to Labor Code Section 1771.4 and 1776 for preparation and submittal of Certified Payroll Records ("CPR"); and (ii) the Contractor's enforcement of CPR preparation and submittal for all Subcontractors of every tier.
- b) Express Condition Precedent to Payment of Contact Price. Strict compliance with CPR requirements established pursuant to Labor Code Section 1776 is an express condition precedent to the CITY's obligation to: (i) process any request for payment of any portion of the Contract Price; or (ii) to disburse any portion of the Contract Price to the Contractor. The Contractor shall demonstrate strict compliance with CPR preparation and submittal requirements by delivery to the CITY of electronic files or hard copies of all CPR's submitted by the Contractor and/ or Subcontractors for Work pursuant to Labor Code Section 1771.4 and 1776 concurrently with the submittal thereof to the Labor Commissioner. The CITY: (i) shall not be obligated to process or disburse any portion of the Contract Price; or (ii) shall not be deemed in default of the CITY's obligations under the Contract Documents unless the Contractor's demonstrates strict compliance with CPR preparation and submittal requirements.
- c) PWR Monitoring and Enforcement. During the Work pursuant to Labor Code Section 1771.4(a)(4), the Department of Industrial Relations shall monitor and enforce the obligation of the Construction and Subcontractors of every tier to pay the laborers performing any portion of the work the PWR established for the classification of work/ labor performed.

RECORD OF WAGES PAID: INSPECTION

Pursuant to Labor Code section 1776, Contractor stipulates to the following:

- a) Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work under the Facilities lease and Construction Provisions. Such records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the

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same information of such forms. The payroll records may consist of payroll data that are maintained as computer records, if printouts contain the same information as the forms provided by the division and the printouts are verified as specified in subdivision (a) of Labor Code section 1776.

- 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 Contractor on the following basis:
- (1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employees 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 CITY, the Division of Labor Standards Enforcement, and 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 copies thereof. However, a request by the public shall be made through either the CITY, 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 Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to such records at the principal office of Contractor.
- c) Contractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested such records within ten (10) days after receipt of the written request.
- d) Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency, by the CITY, the Division of Apprenticeship Standards, or the division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address and social security number. The name and address of contractor awarded the contract or performing the contract shall not be marked or obliterated.
- e) Contractor shall inform the CITY of the location of the records enumerated under subdivision (a), including the street address, city, and county, and shall, within (5) working days, provide a notice of a change of location and address.

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- f) In the event of noncompliance with the requirements of this Article, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this Article. Should noncompliance still be evident after such 10-day period, Contractor shall pay a penalty of One- Hundred Dollars (\$100.00) to the CITY 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, such penalties shall be withheld from the progress payment then due.

The responsibility for compliance with this Article shall rest upon Contractor.

10. Bonds. As a condition precedent to City's obligation to pay compensation to Contractor, and on or before the date of Execution, Contractor shall furnish to the Project Manager the Bonds as required under the Notice to Contractors.
11. Representations and Warranties. In the supply of any materials and equipment and the rendering of labor and services during the course and scope of the Project and Work, Contractor represents and warrants:
- (1) Any materials and equipment which shall be used during the course and scope of the Project and Work shall be vested in Contractor;
 - (2) Any materials and equipment which shall be used during the course and scope of the Project and Work shall be merchantable and fit to be used for the particular purpose for which the materials are required;
 - (3) Any labor and services rendered and materials and equipment used or employed during the course and scope of the Project and Work shall be free of defects in workmanship for a period of one (1) year after the recordation of the Notice of Substantial Completion, or, if no such notice is required to be filed, on the date that final payment is made hereunder;
 - (4) Any manufacturer's warranty obtained by Contractor shall be obtained or shall be deemed obtained by Contractor for and on behalf of City.
 - (5) Any information submitted by Contractor prior to the award of Contract, or thereafter, upon request, whether or not submitted under a continuing obligation by the terms of the Contract to do so, is true and correct at the time such information is submitted or made available to the City;
 - (6) Contractor has not colluded, conspired, or agreed, directly or indirectly, with any person in regard to the terms and conditions of Contractor's Bid, except as may be permitted by the Notice to Contractors;

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LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

CONTRACT

- (7) Contractor has the power and the authority to enter into this Contract with City, that the individual executing this Contract is duly authorized to do so by appropriate resolution, and that this Contract shall be executed, delivered and performed pursuant to the power and authority conferred upon the person or persons authorized to bind Contractor;
 - (8) Contractor has not made an attempt to exert undue influence with the Project Manager or any other person who has directly contributed to City's decision to award the Contract to Contractor;
 - (9) There are no unresolved claims or disputes between Contractor and City which would materially affect Contractor's ability to perform under the Contract;
 - (10) Contractor has furnished and will furnish true and accurate statements, records, reports, resolutions, certifications, and other written information as may be requested of Contractor by City from time to time during the term of this Contract;
 - (11) Contractor and any person performing labor and services under this Project is duly licensed as a contractor with the State of California as required by California Business & Professional Code Section 7028, as amended; and
 - (12) Contractor has fully examined and inspected the Project site and has full knowledge of the physical conditions of the Project site.
12. Assignment. This Contract and the performance required hereunder is personal to Contractor, and it shall not be assigned by Contractor. Any attempted assignment shall be null and void.
 13. Claims of Contractor. All claims pertaining to extra work, additional charges, or delays within the Contract Time or other disputes arising out of the Contract shall be submitted by Contractor in accordance with the General Conditions.
 14. Audits by City. During the term of this Contract and for a period of not less than three (3) years after the expiration or earlier termination of this Contract, City shall have the right to audit Contractor's Project-related and Work-related writings and business records, as such terms are defined in California Evidence Code Sections 250 and 1271, as amended, during the regular business hours of Contractor, or, if Contractor has no such hours, during the regular business hours of City.
 15. Notices. All contracts, agreements, appointments, approvals, authorizations, claims, demands, Change Orders, consents, designations, notices, offers, requests and statements given by either party to the other shall be in writing and shall be sufficiently given and served upon the other party if (1) personally served, (2) sent by the United States mail, postage prepaid, (3) sent by private express delivery service, or (4) in the case of a facsimile transmission, if sent to the telephone FAX number set forth below during regular business hours of the receiving party and followed with two (2) days by delivery of a hard copy of the material sent by facsimile transmission, in accordance with (1), (2) or (3) above.

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Personal service shall include, without limitation, service by delivery and service by facsimile transmission.

To City: City of Lathrop
City Clerk
390 Towne Centre Drive
Lathrop, CA 95330

Copy to: City of Lathrop
Department of Public Works
390 Towne Centre Drive
Lathrop, CA 95330

(209) 941-7430
FAX: (209) 941-7449
ATTN: Senior Construction Manager

To Contractor: _____

Phone: _____

Fax: _____

ATTN: _____

16. Miscellaneous.

- (1) Bailee Disclaimer. The parties understand and agree that City does not purport to be Contractor's bailee, and City is, therefore, not responsible for any damage to the personal property of Contractor.
- (2) Consent. Whenever in this Contract the approval or consent of a party is required, such approval or consent shall be in writing and shall be executed by a person having the express authority to grant such approval or consent.
- (3) Controlling Law. The parties agree that this Contract shall be governed and construed by and in accordance with the Laws of the State of California.
- (4) Definitions. The definitions and terms are as defined in these specifications.
- (5) Force Majeure. Neither party shall be deemed to be in default on account of any delay or failure to perform its obligations under this Contract, which directly results from an Act of God or an act of a superior governmental authority.
- (6) Headings. The paragraph headings are not a part of this Contract and shall have no effect upon the construction or interpretation of any part of this Contract.

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- (7) Incorporation of Documents. All documents constituting the Construction Documents described in Section 3 hereof and all documents which may, from time to time, be referred to in any duly executed amendment hereto are by such reference incorporated in this Contract and shall be deemed to be part of this Contract.
- (8) Integration. This Contract and any amendments hereto between the parties constitute the entire contract between the parties concerning the Project and Work, and there are no other prior oral or written contracts between the parties that are not incorporated in this Contract.
- (9) Modification of Contract. This Contract shall not be modified or be binding upon the parties unless such modification is agreed to in writing and signed by the parties.
- (10) Provision. Any contract, covenant, condition, clause, qualification, restriction, reservation, term or other stipulation in the Contract shall define or otherwise control, establish, or limit the performance required or permitted or to be required of or permitted by either party. All provisions, whether covenants or conditions, shall be deemed to be both covenants and conditions.
- (11) Resolution. Contractor shall submit with its Bid a copy of any corporate or partnership resolution or other writing, which authorizes any director, officer or other employee or partner to act for or on behalf of Contractor or which authorizes Contractor to enter into this Contract.
- (12) Severability. If a court of competent jurisdiction finds or rules that any provision of this Contract is void or unenforceable, the provisions of this Contract not so affected shall remain in full force and effect.
- (13) Status of Contractor. In the exercise of rights and obligations under this Contract, Contractor acts as an independent contractor and not as an agent or employee of City. Contractor shall not be entitled to any rights and benefits accorded or accruing to the City Council members, officers or employees of City, and Contractor expressly waives any and all claims to such rights and benefits.
- (14) Successors and Assigns. The provisions of this Contract shall inure to the benefit of, and shall apply to and bind, the successors and assigns of the parties.
- (15) Time of the Essence. Time is of the essence of this Contract and each of its provisions. In the calculation of time hereunder, the time in which an act is to be performed shall be computed by excluding the first Day and including the last. If the time in which an act is to be performed falls on a Saturday, Sunday, or any Day observed as a legal holiday by City, the time for performance shall be extended to the following Business Day.
- (16) Venue. In the event that suit is brought by either party hereunder, the parties agree that trial of such action shall be vested exclusively in the state courts of California

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in the County of San Joaquin or in the United States District Court for the Eastern District of California.

- (17) Recovery of costs. The prevailing party in any action brought to enforce the terms of this Contract or arising out of this Contract, including the enforcement of the indemnity provision(s), may recover its reasonable costs, including reasonable attorney's fees, incurred or expended in connection with such action against the non-prevailing party.
- (18) Contractor and subcontractors must comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 USC 1857(h)), Section 508 of the Clean Water Act (33 USC1368), Executive Order 11738, and Environmental Protection Agency Regulations at 40 CFR Part 15.
- (19) Contractors and subcontractors must comply with mandatory standards and policies relating to the energy efficiency which are contained in the State Energy Conservation Plan issued in compliance with the Energy Policy and Conservation ACT (Public Law 94-163, 89 stat 871).
- (20) The Contractor shall provide access to the site for the Environmental Protection Agency and its duly authorized representatives, and the City.
- (21) If during the course of construction evidence of deposit of historical or archaeological interest is found, the Contractor shall cease operation affecting the find and shall notify the City, who shall notify the EPA and the State Historic Preservation Officer. No further disturbance of the deposits shall ensue until the Contractor has been notified by the City that construction may proceed. The City will issue a notice to proceed only after the state official has surveyed the find and made a determination to the EPA and the City. Compensation to the contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or change order provisions of the Construction Documents.
- (22) Notice to Proceed. Prior to commencing work under this Contract, CONTRACTOR shall receive a written "Notice to Proceed" from CITY. A Notice to Proceed shall not be issued until all necessary bonds and insurances have been received. City shall not be obligated to pay CONTRACTOR for any services prior to issuance of the Notice to proceed.
- (23) Signatures. The individuals executing this Contract represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this Contract on behalf of the respective legal entities of the CONTRACTOR and the CITY. This Contract shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

SECTION 00500

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

CONTRACT

- (24) This project is a public works project: Contractor shall comply with requirements of California Labor Code § 1700 and following, and prevailing wages shall be paid for work performed on this project.
- (25) The statutory provisions for penalties for failing to comply with the State of California wage and labor laws be enforced, as well as that for failing to pay prevailing wages.

EXHIBITS:

EXHIBIT A: Contractor's Submitted Bid Item List

Certification of insurance, performance and payment bonds, and worker's compensation certification shall be furnished to the City by the Contractor after City Council's approval with resolution.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first above stated in Lathrop, California.

APPROVED:

Contractor:

City Manager

By: _____

RECOMMENDED FOR APPROVAL:

Name: _____

Director of Public Works

Title: _____

APPROVED AS TO FORM:

Taxpayer I.D. No. _____

City Attorney

(END OF SECTION)

SECTION 00610

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

PERFORMANCE BOND

Bond No: _____
Premium: _____
Contract No: _____

PERFORMANCE BOND

WHEREAS, the City Council of the City of Lathrop, State of California, and _____, ("Principal"), have entered into a Contract whereby principal agrees to install and complete certain designated public improvements. The Contract, dated _____, 20__, and identified as project _____, is hereby referred to and made a part hereof; and

WHEREAS, the principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, we, the principal and _____, as surety, are held and firmly bound unto the City of Lathrop ("City"), in the sum of _____ dollars (\$_____) lawful money of the United States, for the payment of which we bind ourselves, our heirs, successors, executors and administrators, jointly and severally.

The condition of this obligation is such that if the above principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the 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 true intent and meaning, and shall indemnify and save harmless City its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

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

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

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on _____, 20__.

SECTION 00610

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

PERFORMANCE BOND

ADDRESS OF Contractor:

ADDRESS OF SURETY:

(END OF SECTION)

SECTION 00620

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

PAYMENT (LABOR AND
MATERIALS) BOND

Bond No: _____
Premium: _____
Contract No. _____

PAYMENT (LABOR AND MATERIALS) BOND

WHEREAS, the City Council of the City of Lathrop, State of California, and , ("Principal"), have entered into an Contract whereby principal agrees to install and complete certain designated public improvements. The Contract, dated _____, 20__, and identified as project **Louise Avenue Pavement Rehabilitation PS 18-01**, is hereby referred to and made a part hereof; and

WHEREAS, under the terms of the Contract, principal is required before entering upon the performance of the work to file a good and sufficient payment with the City of Lathrop to secure the claims to which reference is made in Title 15 (commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California.

NOW, THEREFORE, the principal and the undersigned as corporate surety, are held firmly bound unto the City of Lathrop and all Contractors, subcontractors, laborers, material, men and other persons employed in the performance of the Contract and referred to in the above-mentioned Code of Civil Procedure in the sum of _____ dollars (\$ _____), for materials furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, that the surety will pay the same in an amount not exceeding the amount set forth above, and also in case suit is brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by City in successfully enforcing such obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment rendered.

It is hereby expressly stipulated and agreed that this bond shall insure to the benefit of any and all persons, companies and corporations entitled to file claims under Title 15 (commencing with Section 3082) of Part 4 of Division 3 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

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

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

SECTION 00620

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

**PAYMENT (LABOR AND
MATERIALS) BOND**

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on _____, 20__.

ADDRESS OF PRINCIPAL:

_____	_____
_____	_____

ADDRESS OF SURETY:

_____	_____
_____	_____

(END OF SECTION)

SECTION 00660

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

WORKER'S COMPENSATION
CERTIFICATION

WORKER'S COMPENSATION CERTIFICATION

(AS REQUIRED BY SECTION 1861
OF THE CALIFORNIA LABOR CODE)

I am aware of the provision 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 that code, and I will comply with such provisions before commencing the performance of the work of the Contract.

Contractor: _____

By: _____

Title: _____

(END OF SECTION)

SECTION 00670

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

GUARANTY

Bond No: _____

Premium: _____

Contract No: _____

GUARANTY (WARRANTY) BOND

TO the City of Lathrop

The undersigned guarantees the construction and installation of the work included in this project.

A Guaranty (Warranty) Bond is required to be submitted prior to project acceptance by the City. The Guaranty (Warranty) Bond shall be ten percent (10%) of the final contract amount. The Bond will be effective for one (1) year, beginning with the date of project acceptance.

If any of the work is defective, due to faulty workmanship, materials furnished or methods of installation, or if the work or any part of it fails to operate properly as originally intended and in accordance with the Plans and Specifications, due to any of the above causes, all within one year after the date on which this contract is accepted by the City after relief from maintenance, the undersigned agrees to reimburse the City, upon demand, for its expenses incurred in restoring the project, including the cost of any such equipment or materials replaced and the cost of removing and replacing any other work necessary to make such replacement or repairs, or, upon demand by the City, to replace any such material and to repair the work completely without cost to the City so that the work will function successfully as originally contemplated.

The City shall have the unqualified option to make any needed replacements or repairs done by the undersigned. If the City elects to have the work performed by the undersigned, the undersigned agrees that the repairs shall be made and such materials as are necessary shall be furnished and installed within a reasonable time after the receipt of demand from the City. If the undersigned fails or refuses to comply with his obligations under this guaranty, the City shall be entitled to all costs and expenses, including attorney's fees.

Signature of Bidder

Date

(END OF SECTION)

GENERAL CONDITIONS**ARTICLE 1 -- DEFINITIONS**

Wherever used in these General Conditions, Special Conditions, General Requirements, Technical Specifications, Construction Documents or in any other part of these specifications the following terms have the meanings indicated:

Addenda - Written or graphic instruments issued prior to the opening of Bids, which make additions, deletions, or revisions to the Construction Documents.

Application for Payment - The form furnished by the CITY which is to be used by the CONTRACTOR to request progress or final payment and which includes such supporting documentation as is required by the Construction Documents.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the price or prices for the WORK.

Bonds - Bid, Performance, and Payment Bonds and other instruments, which protect against loss due to inability or refusal of the CONTRACTOR to perform its Contract.

Change Order - A document recommended by the ENGINEER, which is signed by the CONTRACTOR and the CITY and authorizes an addition, deletion, or revision in the WORK, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Contract.

CITY - The public body or authority, corporation, association, firm, or person with whom the CONTRACTOR has entered into the Contract and for whom the WORK is to be provided. Said public body is The City of Lathrop, located at 390 Towne Centre Drive, Lathrop, California 95330.

CITY'S REPRESENTATIVE – Contract construction manager or City personnel at the City's discretion.

City Engineer – The City Engineer is the City Engineer of the City of Lathrop.

Construction Documents - The Notice to Contractors, Instructions to Bidders, Bid Forms (including the Bid, Bid Schedule(s), Information Required of Bidder, Bid Bond, and all required certificates and affidavits), Contract, Performance Bond, Payment Bond, General Conditions, Supplementary General Conditions, Technical Specifications, Drawings, and all addenda, and change orders executed pursuant to the provisions of the Construction Documents.

Contract - The written contract between the CITY and the CONTRACTOR covering the WORK to be performed; when other documents are attached to the Contract they become part of the contract.

Contract Price - The total monies payable by the CITY to the CONTRACTOR under the terms and conditions of the Construction Documents.

SECTION 00700

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

GENERAL CONDITIONS

Contract Time - The number of successive calendar days stated in the Construction Documents for the completion of the WORK.

CONTRACTOR - The person, firm, or corporation with whom the CITY has executed the Contract.

COST OF WORK – The sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of extra work.

Day - A calendar day of 24 hours measured from midnight to the next midnight.

Defective Work - Work that is unsatisfactory, faulty, or deficient; or that does not conform to the Construction Documents or the State Standard Specifications; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Construction Documents; or work that has been damaged prior to the ENGINEER'S recommendation of final payment.

Drawings - The drawings, plans, maps, profiles, diagrams, and other graphic representations which show the character, location, nature, extent, and scope of the WORK and which have been prepared by the ENGINEER and are referred to in the Construction Documents. Shop Drawings are not Drawings as so defined.

Effective Date of the Contract - The date indicated in the Contract on which it was executed, but if no such date is indicated it means the date on which the Contract is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER – The person, firm, or corporation responsible for plan preparation and named as such in the Construction Documents.

Field Order - A written order issued by the City, which may or may not involve a change in the WORK.

Inspector – The person, firm, or corporation, as designated by the CITY as responsible for determining whether or not the WORK is constructed in accordance with the Construction Documents.

Laws and Regulations; Laws or Regulations - Laws, rules, regulations, ordinances, codes, and/or orders promulgated by a lawfully constituted body authorized to issue such Laws and Regulations.

Notice of Award - The written notice by the CITY to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein within the time specified, the CITY would enter into a Contract.

Notice to Proceed - The written notice issued by the CITY to the CONTRACTOR authorizing the CONTRACTOR to proceed with the WORK and establishing the date of commencement of the Contract Time.

SECTION 00700

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

GENERAL CONDITIONS

Owner – The Owner is the City of Lathrop located at 390 Towne Centre Drive, Lathrop, California 95330.

Partial Completion - Placing a portion of the WORK in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion of the WORK.

Project - The total construction of which the WORK to be provided under the Construction Documents, may be the whole, or a part thereof.

Project Engineer – Who is the ENGINEER’S Agent, will act as directed by and under the supervision of the ENGINEER and will confer with the ENGINEER regarding its actions.

Project Manager - The authorized representative of the City who is assigned to manage the Project.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR and submitted by the CONTRACTOR to illustrate some portion of WORK and all illustrations, brochures, standard schedules, performance charts, instructions, and diagrams to illustrate material or equipment for some portion of the WORK.

Standard Plans - The latest edition of the Standard Plans of the State of California, Department of Transportation. Any reference therein to the State of California or a State agency, office or officer shall be interpreted to refer to the City of Lathrop or its corresponding agency, office or officer acting under this contract.

Standard Specifications - The latest edition of the Standard Specifications of the State of California, Department of Transportation. Any reference therein to the State of California or a State agency, office or officer shall be interpreted to refer to the City of Lathrop or its corresponding agency, office or officer acting under this contract. Only those specific sections of the Standard Specifications that are referenced shall be incorporated into the Construction Documents.

Subcontractor - An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the WORK at the site.

Substantial Completion - Refers to when the WORK has progressed to the point where, in the opinion of the ENGINEER as evidenced by the Certificate of Substantial Completion/Notice of Completion as applicable, it is sufficiently complete, in accordance with the Construction Documents, so that the WORK can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with Paragraph 14.8. The terms "substantially complete" and "substantially completed" as applied to any work refers to substantial completion thereof.

Supplementary General Conditions - The part of the Construction Documents, which make additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, supplier, distributor, material man, or vendor.

Technical Specifications - Those portions of the Construction Documents consisting of the General Requirements and Technical Requirements.

Underground Utilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: water, sewage and drainage removal, electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, traffic, or other control systems.

WORK - The entire completed construction required to be furnished under the Construction Documents. WORK is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Construction Documents.

ARTICLE 2 -- PRELIMINARY MATTERS

2.1 Delivery of Bonds/Insurance Certificates

- A. When the CONTRACTOR delivers the signed Contracts to the CITY, the CONTRACTOR shall also deliver to the CITY such Bonds and Insurance Policies and Certificates as the CONTRACTOR may be required to furnish in accordance with the Construction Documents.

2.2 Copies of Documents

- A. The CITY will send two (2) copies of the Contract to the Contractor for signature. After signing and returning both copies, the CITY shall furnish to the Contractor one (1) original copy of the executed Contract.

2.3 Commencement of Contract Time; Notice to Proceed

- A. The Contract Time will start to run on the commencement date stated in the Notice to Proceed.

2.4 Starting the Project

- A. The CONTRACTOR shall begin to perform the WORK within 10 working days after the commencement date stated in the Notice to Proceed, but no work shall be done at the site prior to said commencement date.
- B. Before undertaking each part of the WORK, the CONTRACTOR shall carefully study and compare the Construction Documents and check and verify pertinent figures shown thereon and all applicable field measurements. The CONTRACTOR shall promptly report in writing to the CITY any conflict, error, or discrepancy which the

CONTRACTOR may discover and shall obtain a written interpretation or clarification from the CITY/ENGINEER before proceeding with any work affected thereby.

- C. The CONTRACTOR shall submit to the CITY for review by the CITY/ ENGINEER those documents called for under Section entitled "Contractor Submittals" in the General Requirements.

2.5 Subcontract Limitations

- A. The CONTRACTOR shall perform not less than 50 percent of the Work with its own forces (i.e., without subcontracting). The 50 percent requirement shall be understood to refer to the Work, the value of which totals not less than 50 percent of the Contract Price.

2.6 Pre-Construction Conference

- A. A pre-construction conference attended by the CONTRACTOR, the CITY and others as appropriate will be held to discuss the WORK in accordance with the applicable procedures specified in the General Requirements. The CONTRACTOR shall submit the Project Schedule at this meeting.

2.7 Finalizing Schedules

- A. At least 7 days before submittal of the first Application for Payment a conference attended by the CONTRACTOR, the CITY, and others as appropriate will be held to finalize the schedules submitted in accordance with the General Requirements.

2.8 Hours of Work

- A. The CONTRACTOR shall schedule an 8-hour workday between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday unless otherwise approved by the CITY or modified in the Supplementary General Conditions. No work requiring City inspection shall be allowed outside of normal working hours, or on weekends or holidays without written authorization of the CITY. Normal working hours are defined as being Monday through Friday, 8:00 a.m. to 5:00 p.m.

2.9 City Furnished Materials

- A. The CITY will not furnish any materials for this project. All materials required for the successful performance of this contract shall be furnished by the Contractor.

ARTICLE 3 -- CONSTRUCTION DOCUMENTS: INTENT, AMENDING, REUSE

3.1 Intent

- A. The Construction Documents comprise the entire contract between the CITY and the CONTRACTOR concerning the WORK. The Construction Documents are complementary; what is called for by one is as binding as if called for by all. The

Construction Documents will be construed in accordance with the law of the place of the State of California and local municipal codes and regulations.

- B. It is the intent of the Construction Documents to describe the WORK, functionally complete, to be constructed in accordance with the Construction Documents. Any work, materials, or equipment that may reasonably be inferred from the Construction Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by reference in the Construction Documents) shall be effective to change the duties and responsibilities of the CITY, the CONTRACTOR, or the ENGINEER or any of their consultants, agents, or employees from those set forth in the Construction Documents.
- C. If, during the performance of the WORK, the CONTRACTOR finds a conflict, error, or discrepancy in the Construction Documents, the CONTRACTOR shall so report to the CITY in writing at once, and before proceeding with the work affected thereby, shall obtain a written interpretation, clarification, or correction from the ENGINEER.

3.2 **Order of Precedence of Construction Documents**

- A. In resolving conflicts resulting from conflicts, errors, or discrepancies in any of the Construction Documents, the order of precedence shall be as follows:
1. Change orders
 2. Contract
 3. Addenda
 4. CONTRACTOR'S Bid (Bid Form)
 5. Supplementary General Conditions
 6. Notice Inviting Bids
 7. Instructions to Bidders
 8. General Conditions
 9. Technical Specifications
 10. Referenced Standard Specifications
 - 10a. Caltrans Standard Specifications
 - 10b. Lathrop Design & Construction Standards
 11. Drawings
- B. With reference to the Drawings the order of precedence is as follows:
1. Figures govern over scaled dimensions

2. Detail drawings govern over general drawings
3. Addenda/change order drawings govern over Contract Drawings
4. Contract Drawings govern over standard drawings

3.3 Amending and Supplementing Construction Documents

- A. The Construction Documents may be amended to provide for additions, deletions, and revisions in the WORK or to modify the terms and conditions thereof by a Change Order (pursuant to Article 10).

3.4 Reuse of Documents

- A. Neither the CONTRACTOR, nor any Subcontractor or Supplier, nor any other person or organization performing any of the WORK under a contract with the CITY shall have or acquire any title to ownership rights in any of the Drawings, Technical Specifications, or other documents used on the WORK, and they shall not reuse any of them on the extensions of the Project or any other project without written consent.

3.5 Conflicts within Construction Documents

- A. Should the Construction Documents contain conflicts and/or contradictions, the more stringent shall apply at the CITY's discretion.

ARTICLE 4 -- AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 Availability of Lands

- A. The CITY shall furnish, as indicated in the Construction Documents, the lands upon which the WORK is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the CITY, unless otherwise provided in the Construction Documents. Nothing contained in the Construction Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment; provided, that the CONTRACTOR shall not enter upon nor use any property not under the control of the CITY until a written temporary construction easement agreement has been executed by the CONTRACTOR and the property owner, and a copy of said easement furnished to the CITY'S REPRESENTATIVE prior to said use; and, neither the CITY nor the ENGINEER shall be liable for any claims or damages resulting from the CONTRACTOR'S unauthorized trespass or use of any such properties.

4.2 Physical Conditions - Subsurface and Existing Structures

- A. Explorations and Reports: Reference is made to the Paragraph entitled "Physical Conditions" of the Supplementary General Conditions for identification of those reports of explorations and tests of sub- surface conditions at the site that have been utilized by the ENGINEER in the preparation of the Construction Documents. The CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, however, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained in such reports or the completeness thereof is the responsibility of the CONTRACTOR.
- B. Existing Structures: Reference is made to the Paragraph entitled "Physical Conditions" of the Supplementary General Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Utilities referred to in Paragraph 4.4 herein) which are at or contiguous to the site that have been utilized by the ENGINEER in the preparation of the Construction Documents. The CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, however, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained in such drawings or the completeness thereof is the responsibility of the CONTRACTOR.

4.3 Differing Site Conditions

- A. The CONTRACTOR shall notify the CITY'S REPRESENTATIVE in writing of the following unforeseen conditions, hereinafter called differing site conditions, promptly upon their discovery (but in no event later than 14 days from the discovery) and before they are disturbed:
1. Subsurface or latent physical conditions at the site of the WORK differing materially from those indicated, described, or delineated in the Construction Documents including those reports and documents discussed in Paragraph 4.2; and.
 2. Unknown physical conditions at the site of the WORK of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Construction Documents including those reports and documents discussed in Paragraph 4.3.
- B. The CITY'S REPRESENTATIVE will review the pertinent conditions and determine the necessity of obtaining additional explorations or tests with respect thereto.
- C. If the CITY'S REPRESENTATIVE concludes that because of newly discovered conditions a change in the Construction Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the difference.

- D. In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such difference. If the CITY and the CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefore as provided in Articles 11 and 12.
- E. The CONTRACTOR'S failure to give notice of differing site conditions within 14 days of their discovery or before they are disturbed shall constitute a waiver of all claims in connection therewith, whether direct or consequential in nature.

4.4 Physical Conditions – Underground Utilities

- A. Shown or Indicated: The information and data shown or indicated in the Construction Documents with respect to existing Underground Utilities at or contiguous to the site are based on information and data furnished to the ENGINEER by the CITY, Underground Utility Companies or by others. Unless it is expressly provided in the Supplementary Conditions and/or the Section entitled "Protection and Restoration of Existing Facilities" of the General Requirements, the CITY and the ENGINEER shall not be responsible for the accuracy or completeness of any such information or data, and the CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Utilities shown or indicated in the Construction Documents, for coordination of the WORK with Underground Utility Companies during construction, for the safety and protection thereof and repairing any damage thereto resulting from the WORK, the cost of which will be considered as having been included in the Contract Price.
- B. Not Shown or Indicated: If an Underground Utility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Construction Documents and which the CONTRACTOR could not reasonably have been expected to be aware of, the CONTRACTOR shall identify to the CITY'S REPRESENTATIVE of such Underground Utility and give written notice thereof in accordance with the requirements of the Supplementary General Conditions and Section entitled "Protection and Restoration of Existing Facilities" of the General Requirements.

4.5 Reference Points

- A. The ENGINEER will provide the CONTRACTOR with drawings showing benchmarks and reference points as it deems necessary to establish lines and grades required for the completion of the Site Work specified in the Contract Documents. The CONTRACTOR shall make or furnish all surveys and set all construction stakes necessary for the completion of the work.
- B. The CONTRACTOR shall preserve all bench marks, stakes, and other survey marks, and in case of their removal or destruction by its own employees or by its subcontractor's employees, the CONTRACTOR shall be responsible for the accurate replacement of such reference points by professionally qualified personnel.

4.6 Asbestos, Hazardous Waste, or Toxic or Radioactive Materials

- A. If the CONTRACTOR observes, uncovers, or otherwise becomes aware of any asbestos, hazardous waste, or toxic or radioactive material at the site to which the CONTRACTOR or any Subcontractor, Supplier, or other person may be exposed, the CONTRACTOR shall immediately notify the CITY'S REPRESENTATIVE and thereafter confirm any oral notice in writing. The CITY'S REPRESENTATIVE shall promptly consult with the ENGINEER and the CONTRACTOR concerning such condition and determine the necessity of CITY'S retaining special consultants or qualified experts to deal therewith. The CONTRACTOR shall not perform any work in connection therewith prior to receipt of special written instructions from the CITY'S REPRESENTATIVE.

ARTICLE 5 -- BONDS AND INSURANCE**5.1 Performance and Other Bonds**

- A. The CONTRACTOR shall furnish satisfactory Performance Bond in the amount of 100 percent of the Contract Price and Payment Bond in the amount of 50 percent of the Contract Price as security for the faithful performance and payment of all the CONTRACTOR'S obligations under the Construction Documents. The Performance Bond shall remain in effect at least until one year after the date of Substantial Completion/Notice of Completion as applicable, except as otherwise provided by Law or Regulation or by the Construction Documents; provided, that the amount of said Performance Bond may be reduced to 10 percent of the Contract Price, or \$1,000, whichever is greater. The CONTRACTOR shall also furnish such other Bonds as may be required by the Supplementary General Conditions.
- B. If the surety on any Bond furnished by the CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located, the CONTRACTOR shall within 7 days thereafter substitute another Bond and Surety, which must be acceptable to the CITY.

5.2 Insurance

- A. The CONTRACTOR shall purchase and maintain the insurance required under this paragraph. Such insurance shall include the specific coverages set out herein and be written for not less than the limits of liability and coverages provided in the Construction Documents, or required by law, whichever are greater. All insurance shall be maintained continuously during the life of the Contract up to the date of Substantial Completion/Notice of Completion as applicable, pursuant to acceptance of the WORK by the CITY'S governing body, but the CONTRACTOR'S liabilities under this Contract shall not be deemed limited in any way to the insurance coverage required. The minimum insurance requirements shall be as follows unless modified in the Supplementary General Conditions:

SECTION 00700

<u>Coverage for Which Insurance is Afforded</u>	<u>Limits of Liability</u>
Worker's Compensation & Employer's Liability	Compensation Statutory
Bodily Injury Liability except automobile	\$2,000,000.00 Each person
	\$2,000,000.00 Each occurrence
	\$4,000,000.00 aggregate
Bodily Injury Liability Automobile	\$2,000,000.00 Each person
	\$2,000,000.00 Each occurrence

1. The liability policy shall include Commercial, Comprehensive General Liability and Umbrella Liability coverage providing coverage for Premises and Operations, Products and Completed Operations, Blanket Contractual Liability, Broad Form Property Damage and Personal and Advertising Injury, hazards of explosion, collapse and underground liability; the liability policy shall contain no exclusion for "XCU hazards." The coverage shall be provided on an "occurrence" basis. AUTOS shall include all auto exposure whether owned or non-owned, hired, returned or leased.
2. If the work performed involves the use of mechanical equipment for the purpose of grading of land, excavating, paving or drilling, the policy shall include coverage for liability of the insured for injury to or destruction of wires, conduits, pipes, mains, sewers, or other similar property, or any apparatus in connection therewith, below surface of the ground, whether owned by third parties or the CITY.
3. The policy includes a "Severability of Interest" provision and Cross Liability coverage.
4. If such policies are canceled or changed during the period of coverage as stated herein in such a manner as to affect this Certificate, thirty (30) days' written notice shall be mailed to the said City of Lathrop.

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5. The Contractor shall purchase and maintain the insurance required under this paragraph. Such insurance shall include the specific coverage set out herein and be written for not less than the limits of liability and coverage provided in the General Conditions, or required by law, whichever are greater. All insurance shall be maintained continuously during the life of the Contract up to the date of acceptance by the City and at all times thereafter when the CONTRACTOR may be correcting, removing, or replacing defective work in accordance with Paragraph 13.6 but the Contractor's liabilities under this contract shall not be deemed limited in any way to the insurance coverage required.
 6. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A: VII
 7. All insurance provided by CONTRACTOR under this Agreement shall be primary to any insurance available to CITY. All insurance provided under this Agreement shall not prohibit CONTRACTOR from waiving the right of subrogation prior to a loss. CONTRACTOR hereby waives all rights of subrogation against the CITY
 8. The coverage afforded under the above policies is subject to all the terms of the policies designated herein and meets all the provisions called for in Paragraph 5.2B
- B. The CONTRACTOR shall furnish the CITY with original endorsements at least as broad as CG 20 26 11 85 or its equivalent showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 30 days' prior written notice has been given to the CITY and each additional insured by certified mail. All such insurance shall remain in effect until the date the City accepts the work as complete and at all times there-after when the CONTRACTOR may be correcting, removing, or replacing defective work in accordance with Paragraph 13.6. In addition, the insurance required herein (except for Worker's Compensation and Employer's Liability) shall name the City of Lathrop, its officials, officers, employees, agents and volunteers as "additional insured's" under the policies.
1. Workers' Compensation and Employer's Liability: This insurance shall protect the CONTRACTOR against all claims under applicable state workers' compensation laws. The CONTRACTOR shall also be protected against claims for injury, disease, or death of employees, which, for any reason, may not fall within the provisions of a workers' compensation law. This policy shall include an "all states" endorsement. The CONTRACTOR shall require each subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the CONTRACTOR'S

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Workers' Compensation Insurance. In case any class of employees is not protected, under the Workers' Compensation Statute, the CONTRACTOR shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of its employees as are not otherwise protected.

2. Comprehensive General Liability: This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims arising from injuries to persons other than its employees or damage to property of the CITY or others arising out of any act or omission of the CONTRACTOR or its agents, employees, or subcontractors. The policy shall also include protection against claims insured by usual personal injury liability coverage, a "protective liability" endorsement to insure the contractual liability assumed by the CONTRACTOR under the indemnification provisions in the General Conditions. To the extent that the CONTRACTOR'S work, or work under its direction, may require blasting, explosive conditions, or underground operations, the comprehensive general liability coverage shall contain no exclusion relative to blasting, explosion, collapse of buildings, or damage to underground structures.
3. Comprehensive Automobile Liability: This insurance shall be written in comprehensive form and shall protect the CONTRACTOR against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, and shall cover operation on or off the site of all motor vehicles licensed for highway use, whether they are owned, non-owned, or hired.
4. Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The CONTRACTOR shall either require each of its subcontractors to procure and to maintain Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in the Supplementary General Conditions or insure the activities of its subcontractors in the CONTRACTOR'S own policy, in like amount.
5. Builder's Risk: This insurance shall be of the "all risks" type, shall be written in completed value form, and shall protect the CONTRACTOR, the CITY, and the ENGINEER against risks of damage to buildings, structures, and materials and equipment. The amount of such insurance shall be not less than the insurable value of the WORK at completion. Builder's risk insurance shall provide for losses to be payable to the CONTRACTOR, the CITY, and the ENGINEER as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the CITY, and the ENGINEER. The Builder's Risk policy shall insure against all risks of direct physical loss or damage to property from any external cause including flood and earthquake. Allowable exclusions, if any, shall be as specified in the Supplementary General Conditions.

ARTICLE 6 -- CONTRACTOR'S RESPONSIBILITIES**6.1 Supervision and Superintendence**

- A. The CONTRACTOR shall supervise and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the WORK in accordance with the Construction Documents. The CONTRACTOR shall be responsible for the means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incidental thereto. The CONTRACTOR shall be responsible to see that the finished WORK complies accurately with the Construction Documents.
- B. The CONTRACTOR shall designate in writing and keep on the work site at all times during its progress a technically qualified, English-speaking superintendent, who shall not be replaced without written notice to the CITY. The superintendent will be the CONTRACTOR'S representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall issue all its communications to the CITY'S REPRESENTATIVE.
- C. The CONTRACTOR'S supervisor or superintendent shall be present at the site of the WORK at all times while work is in progress. Failure to observe this requirement shall be considered as suspension of the WORK by the CONTRACTOR until such time as such supervisor or superintendent is again present at the site.

6.2 Labor, Materials, and Equipment

- A. The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the WORK and perform construction as required by the Construction Documents. The CONTRACTOR shall furnish, erect, maintain, and remove the construction plant and any temporary works as may be required. The CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the WORK or property at the site or adjacent thereto, and except as otherwise indicated in the Construction Documents, all work at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of work on Saturday, Sunday, or any legal State, Federal or CITY holiday without the written consent of the CITY'S REPRESENTATIVE.
- B. Except as otherwise provided in this Paragraph, the CONTRACTOR shall receive no additional compensation for overtime work, i.e., work in excess of 8 hours in any one calendar day or 40 hours in any one calendar week, even though such overtime work may be required under emergency conditions and may be ordered by the CITY'S REPRESENTATIVE in writing. Additional compensation will be paid the CONTRACTOR for overtime work only in the event the CITY'S REPRESENTATIVE orders extra work and the change order specifically authorizes the use of overtime work

and then only to such extent as overtime wages are regularly being paid by the CONTRACTOR for overtime work of a similar nature in the same locality.

- C. All costs of inspection and testing performed during overtime work or on Saturday, Sunday, or any legal holiday by the CONTRACTOR, which is allowed solely for the convenience of the CONTRACTOR, shall be borne by the CONTRACTOR. The CITY shall have the authority to deduct the cost of all such inspection and testing from any partial payments otherwise due to the CONTRACTOR.
- D. Unless otherwise specified in the Construction Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the WORK.
- E. All materials and equipment to be incorporated into the WORK shall be of good quality and new, except as otherwise provided in the Construction Documents. All Suppliers' warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of the CITY. If required by the CITY'S REPRESENTATIVE, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Construction Documents; but no provisions of any such instructions will be effective to assign to the CITY, or any of the CITY's consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.9C and 9.9D.

6.3 **Adjusting Progress Schedule**

- A. The CONTRACTOR shall submit any adjustments in the progress schedule to the CITY'S REPRESENTATIVE for acceptance in accordance with the provisions for "Contractor Submittals" in the General Requirements.

6.4 **Substitutes or "Or-Equal" Items**

- A. The CONTRACTOR shall submit proposed substitutes or "or-equal" items in accordance with the provisions for "Contractor Submittals" in the General Requirements.

6.5 **Concerning Subcontractors, Suppliers, and Others**

- A. The CONTRACTOR shall be responsible to the CITY and the ENGINEER for the acts and omissions of its subcontractors and their employees regardless of tier to the same extent as CONTRACTOR is responsible to the CITY and the ENGINEER for the acts and omissions of its own employees. Nothing contained in this Paragraph shall create any contractual relationship between any subcontractor and the CITY or the ENGINEER nor relieve the CONTRACTOR of any liability or obligation under the prime Contract.

6.6 Permits

- A. Unless otherwise provided in the Supplementary Conditions, the CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including the furnishing of insurance and bonds if required by such agencies. The enforcement of such requirements under this Contract shall not be made the basis for claims for additional compensation. The CITY shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids. The CONTRACTOR shall pay all utility charges for connections to the WORK.
- B. The CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Construction Documents for use in the performance of the WORK and if to the actual knowledge of the CITY or the ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the CITY in the Construction Documents. The CONTRACTOR shall indemnify, defend and hold harmless the CITY and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Construction Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.7 Laws and Regulations

- A. The CONTRACTOR shall observe and comply with all federal, state, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK. If any discrepancy or inconsistency should be discovered in this Contract in relation to any such law, ordinance, code, order, or regulation, the CONTRACTOR shall report the same in writing to the CITY'S REPRESENTATIVE. The CONTRACTOR shall indemnify, defend, and hold harmless the CITY, the ENGINEER, and their officers, agents, and employees against all claims or liability arising from violation of any such law, ordinance, code, order, or regulation, whether by CONTRACTOR or by its employees or subcontractors. Any particular law or regulation specified or referred to elsewhere in the Construction Documents shall not in any way limit the obligation of the CONTRACTOR to comply with all other provisions of federal, state, and local laws and regulations. Where an individual State acts on occupational safety and health standards has been approved by Federal authority, then the provisions of said State act shall control.

6.8 Taxes

- A. The CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by the CONTRACTOR in accordance with the Laws and Regulations of the place of the Project, which are applicable during the performance of the WORK.

6.9 Use of Premises

- A. The CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to (1) the Project site, (2) the land and areas identified in and permitted by the Construction Documents, and (3) the other land and areas permitted by Laws and Regulations, rights-of-way, permits, and easements. The CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the CITY or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the WORK. Should any claim be made against the CITY or the ENGINEER by any such owner or occupant because of the performance of the WORK, the CONTRACTOR shall promptly attempt to settle with such other party by contract or otherwise resolve the claim through litigation. The CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend, and hold the CITY and the ENGINEER harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers, architects, attorneys, and other professionals and court costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any such other party against the CITY or the ENGINEER to the extent based on a claim arising out of the CONTRACTOR'S performance of the work.

6.10 Safety and Protection

- A. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. All employees on the WORK and other persons and organizations who may be affected thereby;
 - 2. All the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 - 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- B. The CONTRACTOR shall comply with all applicable Laws and Regulations (whether referred to herein or not) of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify

CITY'S REPRESENTATIVE of adjacent property and utilities when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- C. The CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR'S superintendent unless otherwise designated in writing by the CONTRACTOR to the CITY'S REPRESENTATIVE.

6.11 Shop Drawings and Samples

- A. After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, the CONTRACTOR shall submit to the CITY'S REPRESENTATIVE for review all shop drawings in accordance with the accepted schedule of Shop Drawings submittals specified in the General Requirements.
- B. The CONTRACTOR shall also submit to the CITY'S REPRESENTATIVE for review all samples in accordance with the accepted schedule of Sample submittals specified in the General Requirements.
- C. Before submittal of each shop drawing or sample, the CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each shop drawing or sample with other shop drawings and samples and with the requirements of the WORK and the Construction Documents.

6.12 Continuing the Work

- A. The CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the CITY. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the CONTRACTOR and the CITY may otherwise agree in writing.

6.13 Liquidated Damages

- A. If the Contractor fails to complete the Work within the time specified for Substantial Completion in the Contract, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the City, as liquidated damages and not as a penalty, the sum of \$1,500 per day for each calendar day beyond the dates set forth in the Agreement that the Contractor fails to achieve Substantial Completion for the Project. The said amount is fixed and agreed on by and between the Contractor and the City because of the impracticability and extreme difficulty of fixing and ascertaining the true value of the damages which the City will sustain by failure of the Contractor to complete the Work on time, including damages, some of which are indefinite, said amount is agreed to be a reasonable estimate of the amount of damages which the City will sustain and said amount shall be deducted from any monies due or that may become

due to the Contractor, and if said monies are insufficient to cover said damages, then the Contractor shall pay the amount of the difference.

6.14 **Indemnification**

- A. To the fullest extent permitted by Laws and Regulations, the CONTRACTOR shall indemnify, defend, and hold harmless the CITY, the ENGINEER, and their officers, directors, agents, and employees, against and from all claims and liability arising under, by reason of or incidentally to the Contract or any performance of the WORK, but not from the sole negligence or willful misconduct of the CITY and/or the ENGINEER. Such indemnification by the CONTRACTOR shall include but not be limited to the following:
1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR, its employees, or agents in the performance of the WORK, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR, its employees, or agents;
 2. Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the CONTRACTOR'S or Subcontractor's own employees engaged in the WORK resulting in actions brought by or on behalf of such employees against the CITY and/or the ENGINEER;
 3. Liability or claims arising directly or indirectly from or based on the violation of any law, ordinance, regulation, order, or decree, whether by the CONTRACTOR, its employees, or agents;
 4. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, its employees, or agents in the performance of this Contract of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article, or appliance, unless otherwise specifically stipulated in this Contract;
 5. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the CITY or any other parties by the CONTRACTOR, its employees, or agents;
 6. Liabilities or claims arising directly or indirectly from the willful misconduct of the CONTRACTOR, its employees, or agents; and,
 7. Liabilities or claims arising directly or indirectly from any breach of the obligations assumed herein by the CONTRACTOR.
- B. The CONTRACTOR shall reimburse the CITY for all costs and expenses, (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals and court costs) incurred by said CITY in enforcing the provisions of this Paragraph 6.13.

- C. The indemnification obligation under this Paragraph 6.13 shall not be limited in any way by any limitation of the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR or any such subcontractor or other person or organization under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.15 Contractor's Daily Reports

- A. The CONTRACTOR shall complete a daily report indicating manpower, major equipment, subcontractors, weather conditions, etc., involved in the performance of the WORK. The daily report shall be completed on forms prepared by the CONTRACTOR and acceptable to the CITY, and shall be submitted to the CITY'S REPRESENTATIVE at the conclusion of each workday.

6.16 Assignment of Contract

- A. The CONTRACTOR shall not assign, sublet, sell, transfer, or otherwise dispose of the Contract or any portion thereof, or its right, title, or interest therein, or obligations thereunder, without the written consent of the CITY except as imposed by law. If the CONTRACTOR violates this provision, the Contract may be terminated at the option of the CITY. In such event, the CITY shall be relieved of all liability and obligations to the CONTRACTOR and to its assignee or transferee, growing out of such termination.

ARTICLE 7 -- OTHER WORK

7.1 Related Work at Site

- A. The CITY may perform other work related to the Project at the site by the CITY'S own forces, have other work performed by utility companies, or let other direct contracts therefore which may contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Construction Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work.
- B. The CONTRACTOR shall afford each utility company and other contractors who are a party to such a direct contract (or the CITY, if the CITY is performing the additional work with the CITY'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the WORK with theirs. The CONTRACTOR shall do all cutting, fitting, and patching of the WORK that may be required to make its several parts come together properly and integrate with such other work. The CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of the CITY and the others whose work will be affected.
- C. If any part of the CONTRACTOR'S work depends for proper execution or results upon the work of any such other contractor or utility company (or CITY), the CONTRACTOR shall inspect and report to the CITY'S REPRESENTATIVE in writing any delays, defects, or deficiencies in such work that render it unavailable or unsuitable for such

proper execution and results. The CONTRACTOR'S failure to report such delays, defects, or deficiencies will constitute an acceptance of the other work as fit and proper for integration with the CONTRACTOR'S work except for latent or non-apparent defects and deficiencies in the other work.

7.2 Coordination

- A. If the CITY contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary Conditions, and the specific matters to be covered by such authority and responsibility will be itemized and the extent of such authority and responsibilities will be provided in the Supplementary Conditions. Unless otherwise provided in the Supplementary Conditions, neither the CITY nor the ENGINEER shall have any authority or responsibility in respect of such coordination.

ARTICLE 8 -- CITY'S RESPONSIBILITIES

8.1 Communications

- A. The CITY shall issue all its communications to the CONTRACTOR through the CITY'S REPRESENTATIVE.

8.2 Payments

- A. The CITY shall make payments to the CONTRACTOR as provided in Paragraphs 14.5 and 14.8.

8.3 Lands, Easements, And Surveys

- A. The CITY'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.1. The CITY shall identify and make available to the CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures, which have been utilized by the ENGINEER in preparing the Drawings and Technical Specifications.

8.4 Change Orders

- A. The CITY shall execute Change Orders as indicated in Paragraph 10.1D.

8.5 Inspections and Tests

- A. The CITY'S responsibility in respect of certain inspections, tests, and approvals is set forth in Paragraph 13.3B.

8.6 Suspension of Work

- A. In connection with the CITY'S right to stop work or suspend work, see Paragraphs 13.4 and 15.1. Paragraphs 15.2 and 15.3 deal with the CITY'S right to terminate services of the CONTRACTOR under certain circumstances.

ARTICLE 9 – CITY'S REPRESENTATIVE/ENGINEER'S STATUS DURING CONSTRUCTION**9.1 City's Representative**

- A. The CITY'S REPRESENTATIVE is the person, firm or corporation assigned to be the CITY'S representative during the construction period as set forth in the Supplementary Conditions. The duties and responsibilities and the limitations of authority of the CITY'S REPRESENTATIVE during construction are set forth in the Supplementary Conditions.

9.2 Visits to Site

- A. The CITY'S REPRESENTATIVE and/or the ENGINEER may make visits to the site during construction to observe the progress and quality of the WORK and to determine, in general, if the WORK is proceeding in accordance with the Construction Documents. The CITY'S REPRESENTATIVE and/or the ENGINEER is not required to make exhaustive or continuous on-site inspections to check the quality or quantity of the WORK. The CITY'S REPRESENTATIVE and/or the ENGINEER shall not, during such visits or as a result of such observations of the CONTRACTOR'S work in progress, supervise, direct, or have control over the CONTRACTOR'S work.

9.3 Project Engineer

- A. The ENGINEER may furnish a Project Engineer to assist in observing the performance of the WORK. The Project Engineer is the ENGINEER'S agent.

9.4 Clarifications and Interpretations

- A. The ENGINEER, through the CITY'S REPRESENTATIVE, will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Construction Documents (in the form of Drawings or otherwise) as the ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Construction Documents.

9.5 Authorized Variations in Work

- A. The CITY'S REPRESENTATIVE and/or the ENGINEER may authorize minor variations in the WORK from the requirements of the Construction Documents, which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Construction Documents. These may be accomplished by a Field Order issued through the CITY'S REPRESENTATIVE and will require the

CONTRACTOR to perform the work involved promptly. If the CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefore as provided in Article 11 or 12.

9.6 **Rejecting Defective Work**

- A. The CITY'S REPRESENTATIVE has authority to reject work, which the CITY'S REPRESENTATIVE and/or ENGINEER believes to be defective, and also has authority to require special inspection or testing of the WORK as provided in Paragraph 13.3G, whether or not the WORK is fabricated, installed, or completed.

9.7 **Contractor Submittals, Change Orders, and Payments**

- A. In accordance with the procedures set forth in the General Requirements, the CITY'S REPRESENTATIVE and/or the ENGINEER will review all CONTRACTOR submittals, including shop drawings, samples, substitutes, or "or equal" items, etc., in order to determine if the items covered by the submittals will, after installation or incorporation in the WORK, conform to the requirements of the Construction Documents and be compatible with the design concept of the completed project as a functioning whole as indicated by the Construction Documents. The CITY'S and the ENGINEER'S review shall not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto.
- B. In connection with the ENGINEER'S responsibilities as to Change Orders, see Articles 10, 11, and 12.
- C. In connection with the ENGINEER'S responsibilities in respect of Applications for Payment, see Article 14.

9.8 **Decisions on Disputes**

- A. The CITY'S REPRESENTATIVE will be the initial interpreter of the requirements of the Construction Documents and judge of the acceptability of the WORK there under. Claims, disputes, and other matters relating to the acceptability of the WORK; the interpretation of the requirements of the Construction Documents pertaining to the performance of the WORK; and those claims under Articles 11 and 12 in respect to changes in the Contract Price or Contract Time will be referred initially to the CITY'S REPRESENTATIVE in writing with a request for formal decision in accordance with this paragraph, which the CITY will render in writing within 30 days of receipt of the request. Written notice of each such claim, dispute, and other matter will be delivered by the CONTRACTOR to the CITY'S REPRESENTATIVE promptly but in no event later than 30 days after the occurrence of the event giving rise thereto. Written supporting data will be submitted to the CITY'S REPRESENTATIVE within 30 days after such occurrence unless the CITY allows an additional period of time to ascertain more accurate data in support of the claim.

- B. When functioning as arbiter and judge, the ENGINEER shall not show partiality to the CITY or the CONTRACTOR and shall not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by the ENGINEER with respect to any such claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.12) will be a condition precedent to any exercise by the CITY or the CONTRACTOR of such rights or remedies as either may otherwise have under the Construction Documents or by Law or Regulations in respect of any such claim, dispute, or other matter.
- C. All contracts between the Contractor and his subcontractors and suppliers regardless of tier shall include a provision that subcontractors and suppliers shall be bound to the Contractor to the same extent that the Contractor is bound to the CITY by all terms and provisions of the Contract, including this arbitration provision.

9.9 **Limitation on Engineer's Responsibilities**

- A. Neither the ENGINEER'S authority to act under this Article 9 or other provisions of the Construction Documents nor any decision made by the ENGINEER in good faith whether to exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any Supplier, any surety for any of them, or any other person or organization performing any of the WORK.
- B. Whenever in the Construction Documents the terms "as ordered," "as directed," "as required," "as allowed," "as reviewed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review, or judgment of the ENGINEER and CITY as to the WORK, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the WORK for compliance with the requirements of the Construction Documents, and conformance with the design concept of the completed Project as a functioning whole as indicated by the Construction Documents, unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be effective to assign to the ENGINEER and the CITY any duty or authority to supervise or direct the performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9C or 9.9D.
- C. The ENGINEER and the CITY will not have authority over or be responsible for the CONTRACTOR'S means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations, applicable to the performance of the WORK. The ENGINEER and CITY will not be responsible for the CONTRACTOR'S failure to perform the WORK in accordance with the Construction Documents.

- D. The ENGINEER and CITY will not be responsible for the acts or omissions of the CONTRACTOR nor of any subcontractor, supplier, or any other person or organization performing any of the WORK.

ARTICLE 10 -- CHANGES IN THE WORK

10.1 General

- A. Without invalidating the Contract and without notice to any surety, the CITY may at any time or from time to time, order additions, deletions, or revisions in the WORK; these will be authorized by a written Field Order and/or a Change Order issued by the CITY based on recommendations by the Engineer. Upon receipt of any such document, the CONTRACTOR shall promptly proceed with the work involved, which will be performed under the applicable conditions of the Construction Documents.
- B. If the CITY and the CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Field Order, a claim may be made therefore as provided in Articles 11 or 12.
- C. The CONTRACTOR shall not be entitled to an increase in the Contract Price nor an extension of the Contract Time with respect to any work performed that is not required by the Construction Documents as amended, modified, supplemented by Change Order, except in the case of an emergency and except in the case of uncovering work as provided in Paragraph 13.3G.
- D. The CITY and the CONTRACTOR shall execute appropriate Change Orders covering:
1. Changes in the WORK, which are ordered/recommended by the ENGINEER and agreed to by CITY pursuant to Paragraph 10.1A;
 2. Changes required because of acceptance of defective work under Paragraph 13.7;
 3. Changes in the Contract Price or Contract Time which are agreed to by the parties;
or
 4. Any other changes agreed to by the parties.
- E. If notice of any change is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be the CONTRACTOR'S responsibility, and the amount of each applicable Bond shall be adjusted accordingly.

10.2 Allowable Quantity Variations

- A. In the event of an increase or decrease in bid item quantity of a unit price contract, the total amount of work actually done or materials or equipment furnished shall be paid for according to the unit price established for such work under the Construction Documents,

wherever such unit price has been established; provided, that an adjustment in the Contract Price may be made for changes which result in an increase or decrease in the quantity of any unit price bid item of the WORK in excess of 25 percent.

- B. In the event a part of the WORK is to be entirely eliminated and no lump sum or unit price is named in the Construction Documents to cover such eliminated work, the price of the eliminated work shall be agreed upon in writing by the CITY and the CONTRACTOR. If the CITY and the CONTRACTOR fail to agree upon the price of the eliminated work, said price shall be determined in accordance with the provisions of Article 11.

ARTICLE 11 -- CHANGE OF CONTRACT PRICE

11.1 General

- A. The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the WORK. All duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR shall be at its expense without change in the Contract Price.
- B. The Contract Price shall only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the CITY promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within 60 days after such occurrence (unless the CITY allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Price shall be determined by the CITY in accordance with Paragraph 9.8A if the CITY and the CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph 11.1B.
- C. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
 - 1. Where the work involved is covered by unit prices contained in the Construction Documents, by application of unit prices to the quantities of the items involved.
 - 2. By mutual acceptance of a lump sum, which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.4.
 - 3. On the basis of the cost of work (determined as provided in Paragraphs 11.2 and 11.3) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in Paragraph 11.4).

11.2 Cost of Work (Based On Time and Materials)

- A. General: The CONTRACTOR shall provide an approximate value of any extra work to be performed prior to starting the extra work. The sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment in the proper performance of extra work. Except as otherwise may be agreed to in writing by the CITY, the cost of work shall be in amounts no higher than those prevailing in the locality of the Project. Whenever any extra work is in progress, for which the definite price has not been agreed on in advance, the CONTRACTOR shall each day, report to the CITY the amount and cost of the labor and material used, and any other expense incurred in such extra work on the preceding day, and no claim for compensation for such extra work will be allowed unless such report shall have been made.
- B. Labor: The cost of labor used in performing extra work by the CONTRACTOR, a subcontractor, or other forces will be the sum of the following:
1. The actual wages paid plus any employer payments to, or on behalf of workers for fringe benefits including health and welfare, pension, vacation, and similar purposes. The cost of labor may include the wages paid to foremen when determined by the CITY that the services of foremen do not constitute a part of the overhead allowance.
 2. All payment imposed by state and federal laws including, but not limited to, compensation insurance, and social security payments.
 3. The amount paid for subsistence and travel required by collective bargaining agreements, or in accordance with the regular practice of the employer.

At the beginning of the extra work and as later requested by the CITY, the CONTRACTOR shall furnish the CITY proof of labor compensation rates being paid.

- C. Materials: The cost of materials used in performing extra work will be the cost to the purchaser, whether CONTRACTOR or subcontractor, from the supplier thereof, except as the following are applicable:
1. Trade discounts available to the purchaser shall be credited to the CITY notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.
 2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the CITY'S REPRESENTATIVE. Markup except for actual costs incurred in the handling of such materials will not be allowed.
 3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources

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on extra work items or the current wholesale price for such materials delivered to the work site, whichever price is lower.

4. If in the opinion of the CITY'S REPRESENTATIVE the cost of material is excessive, or the CONTRACTOR does not furnish satisfactory evidence of the cost of such material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned delivered to the work site less trade discount. The CITY reserves the right to furnish materials for the extra work and no claim shall be made by the CONTRACTOR for costs and profit on such materials.
- D. Equipment: The CONTRACTOR will be paid for the use of equipment at the rental rate listed for such equipment specified in the "Labor Surcharge and Equipment Rental Rates" as published by the Department of Transportation. Such rental rate will be used to compute payments for equipment whether the equipment is under the CONTRACTOR'S control, through direct City control, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the CITY for the total period of use. If it is deemed necessary by the CONTRACTOR to use equipment not listed in the publication specified in the Supplementary General Conditions, an equitable rental rate for the equipment will be established by the CITY'S REPRESENTATIVE. The CONTRACTOR may furnish cost data, which might assist the CITY'S REPRESENTATIVE in the establishment of the rental rate.
1. All equipment shall, in the opinion of the CITY'S REPRESENTATIVE, be in good working condition and suitable for the purpose for which the equipment is to be used.
 2. Before construction equipment is used on the extra work, the CONTRACTOR shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the CITY'S REPRESENTATIVE, in duplicate, a description of the equipment and its identifying number.
 3. Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment, which has no direct power unit, shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
 4. Individual pieces of equipment or tools having a replacement value of \$100 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefore.
 5. Rental time will not be allowed while equipment is inoperative due to breakdowns.
- E. Equipment on the Work Site: The rental time to be paid for equipment on the work site shall be the time the equipment is in productive operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the

location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location; except, that moving time will not be paid if the equipment is used on other than the extra work, even though located at the site of the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made for loading and transporting costs when the equipment is used at the site of the extra work on other than the extra work. The following shall be used in computing the rental time of equipment on the work site.

1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2-hour of operation, and any part of an hour in excess of 30 minutes will be considered one hour of operation.
2. When daily rates are listed, any part of a day less than 4 hours operation shall be considered to be 1/2-day of operation. When CITY-operated equipment is used to perform extra work to be paid for on a time and materials basis, the CONTRACTOR will be paid for the equipment and operator, as set forth in Paragraphs (3), (4), and (5), following.
3. Payment for the equipment will be made in accordance with the provisions in Paragraph 11.2D, herein.
4. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the CONTRACTOR to other workers operating similar equipment already on the work site, or in the absence of such labor, established by collective bargaining agreements for the type of workmen and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of Paragraph 11.2B, herein, which surcharge shall constitute full compensation for payments imposed by state and federal laws and all other payments made to or on behalf of workers other than actual wages.
5. To the direct cost of equipment rental and labor, computed as provided herein, will be added the allowances for equipment rental and labor as provided in Paragraph 11.4, herein.

11.3 Special Services

- A. Special work or services are defined as that work characterized by extraordinary complexity, sophistication, or innovation or a combination of the foregoing attributes which are unique to the construction industry. The following may be considered by the CITY'S REPRESENTATIVE in making estimates for payment for special services:
 1. When the CITY'S REPRESENTATIVE and the CONTRACTOR, by agreement, determine that a special service or work is required which cannot be performed by the forces of the CONTRACTOR or those of any of its subcontractors, the special service or work may be performed by an entity especially skilled in the work to be

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performed. After validation of invoices and determination of market values by the CITY'S REPRESENTATIVE, invoices for special services or work based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental costs.

- 2. When the CONTRACTOR is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the job site, the charges for that portion of the work performed at the off-site facility may, by agreement, be accepted as a special service and accordingly, the invoices for the work may be accepted without detailed itemization.
- 3. All invoices for special services will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit specified in Paragraph 11.4, herein, an allowance of 5 percent will be added to invoices for special services.

- B. All work performed hereunder shall be subject to all of the provisions of the Construction Documents and the CONTRACTOR'S sureties shall be bound with reference thereto as under the original Contract. Copies of all amendments to surety bonds or supplemental surety bonds shall be submitted to the CITY'S REPRESENTATIVE for review prior to the performance of any work hereunder.

11.4 Contractor's Fee

- A. Extra work ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by the CITY'S REPRESENTATIVE, plus allowances for overhead and profit. For extra work involving a combination of increases and decreases in the WORK the actual necessary cost will be the arithmetic sum of the additive and deductive costs. The allowance for overhead and profit shall include full compensation for superintendence, bond and insurance premiums, taxes, office expense, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Paragraphs 11.2B, C, and D, herein including extended overhead and home office overhead. The allowance for overhead and profit will be made in accordance with the following schedule:

<u>Actual Necessary Cost</u>	<u>Overhead and Profit Allowance</u>
Labor.....	15 percent
Materials.....	10 percent
Equipment.....	10 percent
Subcontractor.....	5 percent

- B. It is understood that labor, materials, and equipment may be furnished by the CONTRACTOR or by the subcontractor on behalf of the CONTRACTOR. When all or any part of the extra work is performed by a subcontractor, the allowance specified herein shall be applied to the labor, materials, and equipment costs of the subcontractor, to which the CONTRACTOR may add 5 percent of the subcontractor's total cost for the extra work. Regardless of the number of hierarchical tiers of subcontractors, the 5 percent increase above the subcontractor's total cost which includes the allowances for overhead

and profit specified herein may be applied one time only for each separate work transaction.

ARTICLE 12 -- CHANGE OF CONTRACT TIME

12.1 General

- A. The Contract Time may only be changed by a Change Order. Any claim for an extension of the Contract Time shall be based on written notice delivered by the CONTRACTOR to the CITY'S REPRESENTATIVE promptly (but in no event later than 30 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within 60 days after such occurrence (unless the CITY'S REPRESENTATIVE allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the CONTRACTOR'S written statement that the adjustment claimed is the entire adjustment to which the CONTRACTOR has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the CITY'S REPRESENTATIVE in accordance with Paragraph 9.8 if the CITY and the CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this Paragraph 12.1A.
- B. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the CONTRACTOR provided that such time lost affects the critical path as shown on the CPM schedule if a claim is made therefore as provided in Paragraph 12.1A. Such delays shall include: acts or neglect by the CITY or others performing additional work as contemplated by Article 7, or by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, sabotage or freight embargoes.
- C. All time limits stated in the Construction Documents are of the essence of the Contract.

12.2 Extensions of Time for Delay Due to Inclement Weather

- A. Inclement weather is any weather condition or conditions resulting immediately there from, causing the CONTRACTOR to suspend construction operations or preventing the CONTRACTOR from proceeding with at least 75 percent of the normal labor and equipment force engaged on the work.
- B. Should the CONTRACTOR prepare to begin work at the regular starting time at the beginning of any regular work shift on any day on which inclement weather, or the conditions resulting from the weather, or the condition of the WORK prevents work from beginning at the usual starting time and the crew is dismissed as a result thereof, the CONTRACTOR will not be charged for a working day whether or not conditions change thereafter during said day and the major portion of the day could be considered to be suitable for such construction operations.

- C. The CONTRACTOR shall base its construction schedule upon the inclusion of the number of days of inclement weather specified in paragraph entitled "Inclement weather delays" of the Supplementary Conditions. No extension of the Contract Time due to inclement weather will be considered until after the said number of days of inclement weather has been reached. However, no reduction in Contract Time will be made if said number of days of inclement weather is not reached.

ARTICLE 13 -- WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

13.1 Warranty and Guarantee

- A. The CONTRACTOR warrants and guarantees to the CITY and the ENGINEER that all work will be in accordance with the Construction Documents and will not be defective. Prompt notice of defects known to the CITY and ENGINEER shall be given to the CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13.

13.2 Access to Work

- A. The CITY'S REPRESENTATIVE, ENGINEER, other representatives of the CITY, testing agencies, and governmental agencies with jurisdictional interests shall have access to the WORK at reasonable times for their observation, inspections, and testing. The CONTRACTOR shall provide proper and safe conditions for such access.

13.3 Tests and Inspections

- A. The CONTRACTOR shall give the CITY'S REPRESENTATIVE timely notice of readiness of the WORK for all required inspections, tests, or approvals.
- B. If Laws or Regulations of the CITY, or any public body having jurisdiction other than the CITY, require any work to specifically be inspected, tested, or approved, the CONTRACTOR shall pay all costs in connection therewith. The CONTRACTOR shall be responsible for and shall pay all costs in connection with testing the work for compliance with the Construction Documents unless stated otherwise in the Supplementary General Conditions. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the CITY'S or the ENGINEER'S acceptance of a Supplier of materials or equipment proposed as a substitution or (or-equal) to be incorporated in the WORK, or of materials or equipment submitted for review prior to the CONTRACTOR'S purchase thereof for incorporation in the WORK.
- C. The CITY'S REPRESENTATIVE will make, or have made, such inspections and tests as the CITY'S REPRESENTATIVE deems necessary to see that the WORK is being accomplished in accordance with the requirements of the Construction Documents. Unless otherwise specified in the Supplementary General Conditions, the cost of such inspection and testing will be borne by the CITY. In the event such inspections or tests

reveal non-compliance with the requirements of the Construction Documents, the CONTRACTOR shall bear the cost of corrective measures deemed necessary by the CITY'S REPRESENTATIVE, as well as the cost of subsequent re-inspection and retesting. Neither observations by the CITY'S REPRESENTATIVE nor inspections, tests, or approvals by others shall relieve the CONTRACTOR from the CONTRACTOR'S obligation to perform the WORK in accordance with the Construction Documents.

- D. All inspections, tests, or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to the CITY'S REPRESENTATIVE.
- E. If any work (including the work of others) that is to be inspected, tested, or approved is covered without written concurrence of the CITY'S REPRESENTATIVE, it must, if requested by the CITY'S REPRESENTATIVE, be uncovered for observation. Such uncovering shall be at the CONTRACTOR'S expense unless the CONTRACTOR has given the CITY'S REPRESENTATIVE timely notice of the CONTRACTOR'S intention to perform such test or to cover the same and the CITY'S REPRESENTATIVE has not acted with reasonable promptness in response to such notice.
- F. If any work is covered contrary to the written request of the CITY'S REPRESENTATIVE, it must, if requested by the CITY'S REPRESENTATIVE, be uncovered for the CITY'S REPRESENTATIVE observation and replaced at the CONTRACTOR'S expense.
- G. If the CITY'S REPRESENTATIVE considers it necessary or advisable that covered work be observed by the CITY'S REPRESENTATIVE or inspected or tested by others, the CONTRACTOR, at the CITY'S REPRESENTATIVE request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as the CITY'S REPRESENTATIVE may require, that portion of the WORK in question, furnishing all necessary labor, material, and equipment. If it is found that such work is defective, the CONTRACTOR shall bear all direct, indirect, and consequential costs and damages of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, including but not limited to fees and charges of engineers, architects, attorneys, and other professionals. However, if such work is not found to be defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, the CONTRACTOR may make a claim therefore as provided in Articles 11 and 12.

13.4 **City May Stop the Work**

- A. If the WORK is defective, or the CONTRACTOR fails to perform work in such a way that the completed WORK will conform to the Construction Documents, the CITY'S REPRESENTATIVE may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the

CITY to stop the WORK shall not give rise to any duty on the part of the CITY to exercise this right for the benefit of the CONTRACTOR or any other party.

13.5 Correction or Removal of Defective Work

- A. If required by the CITY'S REPRESENTATIVE, the CONTRACTOR should promptly, either correct all defective work, whether or not fabricated, installed, or completed, or, if the WORK has been rejected by the CITY'S REPRESENTATIVE, remove it from the site and replace it with non-defective work. The CONTRACTOR shall bear all direct, indirect and consequential costs and damages of such correction or removal, including but not limited to fees and charges of engineers, architects, attorneys, and other professionals made necessary thereby.

13.6 One Year Correction Period

- A. If within one year after the date of Substantial Completion/Notice of Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Construction Documents or by any specific provision of the Construction Documents, any work is found to be defective in the CITY'S sole and absolute discretion, the CONTRACTOR shall promptly, without cost to the CITY and in accordance with CITY'S written notification, either correct such defective work, or, if it has been rejected by the CITY, remove it from the site and replace it with non-defective work. If the CONTRACTOR does not promptly comply with the such notification, or in an emergency where delay would cause serious risk of loss or damage, the CITY'S REPRESENTATIVE may have the defective work corrected or the rejected work removed and replaced, and all direct, indirect, and consequential costs and damages of such removal and replacement including but not limited to fees and charges of engineers, architects, attorneys and other professionals will be paid by the CONTRACTOR.

13.7 Acceptance of Defective Work

- A. The City may accept any work performed defectively. Any such acceptance of defective work shall not waive the City's right to enforce a one-year correction period listed above in Section 13.6(A) unless such a waiver is expressly included in the written acceptance of defective work by the City and the City receives an agreed upon decrease in the contract price in exchange for the release of the above referenced one-year warranty on any defective work accepted.
- B. If, instead of requiring correction or removal and replacement of defective work, the CITY prefers to accept the work, the CITY may do so. The CONTRACTOR shall bear all direct, indirect, and consequential costs attributable to the CITY'S REPRESENTATIVE evaluation of and determination to accept such defective work. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Construction Documents with respect to the WORK, and the CITY shall be entitled to an appropriate decrease in the Contract Price.

ARTICLE 14 -- PAYMENTS TO CONTRACTOR AND COMPLETION**14.1 Schedule of Values (Lump Sum Price Breakdown)**

- A. The CONTRACTOR shall provide a Schedule of Values (lump sum price breakdown) for all "Lump Sum" items of work. The Schedule of Values shall serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the CITY'S REPRESENTATIVE.

14.2 Unit Price Bid Schedule

- A. Progress payments on account of Unit Price work will be based on the number of units completed.

14.3 Application for Progress Payment

- A. Unless otherwise prescribed by law, on the 25th of each month, the CONTRACTOR shall submit to the CITY'S REPRESENTATIVE for review, an Application for Payment filled out and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accompanied by such supporting documentation as is required by the Construction Documents.
- B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR'S total earnings to date, plus the value of materials stored at the site which have not yet been incorporated in the WORK, and less a deductive adjustment for materials installed which were not previously incorporated in the WORK, but for which payment was allowed under the provisions for payment for materials stored at the site, but not yet incorporated in the WORK.
- C. The net payment due to the CONTRACTOR shall be the above-mentioned subtotal from which shall be deducted the amount of retainage specified below and the total amount of all previous payments made to the CONTRACTOR.
 - 1. The CITY may retain 5 percent of each approved progress payment until the work is completed and accepted and release of retainage and other deduction as described in Section 14.10. occurs.
- D. The value of materials stored at the site shall be an amount equal to the specified percent of the value of such materials as set forth in the Supplementary Conditions. Said amount shall be based upon the value of all acceptable materials and equipment not incorporated in the WORK but delivered and suitably stored at the site or at another location agreed to in writing; provided, each such individual item has a value of more than \$5000 and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CONTRACTOR has received the materials and equipment free and clear of all liens, charges, security interests, and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are

covered by appropriate property insurance and other arrangements to protect the CITY'S interest therein, all of which will be satisfactory to the CITY.

14.4 Contractor's Warranty of Title

- A. The CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by an Application for Payment, whether incorporated in the WORK or not, will pass to the CITY no later than the time of final payment free and clear of all liens.

14.5 Review of Applications for Progress Payment

- A. The CITY'S REPRESENTATIVE will, within 7 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment or return the Application to the CONTRACTOR indicating in writing the CITY's reasons for refusing to recommend payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the Application. Thirty days after presentation of the Application for Payment with the CITY recommendation, the amount recommended will (subject to the provisions of Paragraph 14.5B) become due and when due will be paid by the CITY to the CONTRACTOR.
- B. The CITY may refuse to make payment of the full amount requested by the CONTRACTOR because claims have been made against the CITY on account of the CONTRACTOR'S performance of the WORK or Liens have been filed in connection with the WORK or there are other items entitling the CITY to a credit against the amount recommended, but the CITY will give the CONTRACTOR written notice within 7 days stating the reasons for such action.

14.6 Partial Completion

- A. The CITY shall have the right to utilize or place into service any item of equipment or other usable portion of the WORK prior to completion of the WORK. Whenever the CITY plans to exercise said right, the CONTRACTOR will be notified in writing by the CITY, identifying the specific portion or portions of the WORK to be so utilized or otherwise placed into service.
- B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all items or portions of the WORK to be partially utilized shall be borne by the CONTRACTOR. Upon issuance of said written notice of partial completion, the CITY will accept responsibility for the protection and maintenance of all such items or portions of the WORK described in the written notice.
- C. The CONTRACTOR shall retain full responsibility for satisfactory completion of the WORK, regardless of whether a portion thereof has been partially utilized by the CITY and the CONTRACTOR'S one year correction period shall commence only after the date of Substantial Completion/Notice of Completion for the WORK.

14.7 Substantial Completion

- A. When the CONTRACTOR considers the WORK ready for its intended use the CONTRACTOR shall notify the CITY and the ENGINEER in writing that the WORK is substantially complete and request that the CITY'S REPRESENTATIVE prepare a Certificate of Substantial Completion/Notice of Completion. Within a reasonable time thereafter, the CONTRACTOR and the CITY'S REPRESENTATIVE shall make an inspection of the WORK to determine the status of completion. If the CITY'S REPRESENTATIVE does not consider the WORK substantially complete, the CITY'S REPRESENTATIVE will notify the CONTRACTOR in writing giving the reasons therefore. If the CITY'S REPRESENTATIVE considers the WORK substantially complete, the CITY'S REPRESENTATIVE will prepare for execution and recordation the Certificate of Substantial Completion/Notice of Completion signed by the CITY and CONTRACTOR, which shall fix the date of Substantial Completion/Notice of Completion. As applicable, there shall be attached to the Certificate/Notice a list of items to be completed or corrected before final payment.

14.8 Final Application for Payment

- A. After the CONTRACTOR has completed all correction work referred to in Paragraph 14.7 and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in the General Requirements) and other documents, all as required by the Construction Documents, and after the ENGINEER has indicated that the WORK is acceptable, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Construction Documents, together with complete and legally effective releases or waivers (satisfactory to the CITY) of all liens arising out of or filed in connection with the WORK.

14.9 Final Payment and Acceptance

- A. If, on the basis of the CITY'S REPRESENTATIVE'S observation of the WORK during construction and final inspection, and the CITY'S REPRESENTATIVE'S review of the final Application for Payment and accompanying documentation, all as required by the Construction Documents, the CITY'S REPRESENTATIVE is satisfied that the WORK has been completed and the CONTRACTOR'S other obligations under the Construction Documents have been fulfilled, the CITY'S REPRESENTATIVE will, within 14 days after receipt of the final Application for Payment, indicate in writing the CITY'S REPRESENTATIVE'S recommendation of payment and present the Application to the CITY for payment.
- B. After acceptance of the WORK by the CITY'S governing body, the CITY will make final payment to the CONTRACTOR of the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Construction Documents, including the following items:

1. Liquidated damages, as applicable.
2. Two times the value of outstanding items of correction work or punch list items indicated on the Certificate of Substantial Completion/Notice of Completion as being yet uncompleted or uncorrected, as applicable. All such work shall be completed or corrected to the satisfaction of the CITY within the time stated on the Certificate of Substantial Completion/Notice of Completion; otherwise the CONTRACTOR does hereby waive any and all claims to all monies withheld by the CITY to cover the value of all such uncompleted or uncorrected items.

14.10 Release of Retainage and Other Deductions

- A. After executing the necessary documents to initiate the lien period, and not more than 45 days thereafter (based on a 30-day lien filing period and 15-day processing time), the CITY will release to the CONTRACTOR the retainage funds withheld pursuant to the Contract, less any deductions to cover pending claims against the CITY pursuant to Paragraph 14.5B.
- B. After filing of the necessary documents to initiate the lien period, the CONTRACTOR shall have 30 days to complete any outstanding items of correction work remaining to be completed or corrected as listed on a final punch list made a part of the Certificate of Substantial Completion/Notice of Completion. Upon expiration of the 45 days, referred to in Paragraph 14.10A, the amounts withheld pursuant to the provisions of Paragraph 14.9B herein, for all remaining work items will be returned to the CONTRACTOR; provided, that said work has been completed or corrected to the satisfaction of the CITY within said 30 days. Otherwise, the CONTRACTOR does hereby waive any and all claims for all monies withheld by the CITY under the Contract to cover 2 times the value of such remaining uncompleted or uncorrected items.

14.11 Contractor's Continuing Obligation

- A. The CONTRACTOR'S obligation to perform and complete the WORK in accordance with the Construction Documents shall be absolute. Neither recommendation of any progress or final payment by the CITY, nor the issuance of a Certificate of Substantial Completion/Notice of Completion, nor any payment by the CITY to the CONTRACTOR under the Construction Documents, nor any use or occupancy of the WORK or any part thereof by the CITY, nor any act of acceptance by the CITY nor any failure to do so, nor any review of a Shop Drawing or sample submittal, will constitute an acceptance of work not in accordance with the Construction Documents or a release of the CONTRACTOR'S obligation to perform the WORK in accordance with the Construction Documents.

14.12 Final Payment Terminates Liability of City

- A. Final payment is defined as the last progress payment made to the CONTRACTOR for earned funds, less retainage as applicable, less deductions listed in Paragraph 14.9B herein. The acceptance by the CONTRACTOR of the final payment referred to in Paragraph 14.9 herein, shall be a release of the CITY and its agents from all claims of

liability to the CONTRACTOR for anything done or furnished for, or relating to, the WORK or for any act or neglect of the CITY or of any person relating to or affecting the WORK, except demands against the CITY for the remainder, if any, of the amounts kept or retained under the provisions of Paragraph 14.9 herein; and excepting pending, unresolved claims filed prior to the date of the Certificate of Substantial Completion/Notice of Completion.

ARTICLE 15 -- SUSPENSION OF WORK AND TERMINATION

15.1 Suspension of Work by City

- A. The CITY, may, at any time and without cause, suspend the WORK or any portion thereof for a period of not more than 90 days by notice in writing to the CONTRACTOR. The CONTRACTOR shall resume the WORK on receipt from the CITY'S REPRESENTATIVE of a notice of resumption of work. The CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if the CONTRACTOR makes an approved claim therefore as provided in Articles 11 and 12.

15.2 Termination of Contract by City (Contractor Default)

- A. In the event of default by the CONTRACTOR, the CITY may give 10 days' written notice to the CONTRACTOR of CITY'S intent to terminate the Contract and provide the CONTRACTOR an opportunity to remedy the conditions constituting the default. It shall be considered a default by the CONTRACTOR whenever CONTRACTOR shall: (1) declare bankruptcy, become insolvent, or assign its assets for the benefit of its creditors; (2) fail to provide materials or workmanship meeting the requirements of the Construction Documents; (3) disregard or violate provisions of the Construction Documents or CITY'S REPRESENTATIVE'S instructions; (4) fail to prosecute the WORK according to the approved progress schedule; or, (5) fail to provide a qualified superintendent, competent workmen, or materials or equipment meeting the requirements of the Construction Documents. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the CITY may then issue the Notice of Termination.
- B. In the event the Contract is terminated in accordance with Paragraph 15.2A, herein, the CITY may take possession of the WORK and may complete the WORK by whatever method or means the CITY may select. The cost of completing the WORK shall be deducted from the balance which would have been due the CONTRACTOR had the Contract not been terminated and the WORK completed in accordance with the Construction Documents. If such cost exceeds the balance, which would have been due, the CONTRACTOR shall pay the excess amount to the CITY. If such cost is less than the balance, which would have been due, the CONTRACTOR shall not have claim to the difference.

15.3 Termination of Contract by City (For Convenience)

- A. The CITY may terminate the Contract at any time if it is found that reasons beyond the control of either the CITY or CONTRACTOR make it impossible or against the CITY'S interests to complete the WORK. In such a case, the CONTRACTOR shall have no claims against the CITY except: (1) for the value of work performed up to the date the Contract is terminated; and, (2) for the cost of materials and equipment on hand, in transit, or on definite commitment, as of the date the Contract is terminated, which would be needed in the WORK and which meet the requirements of the Construction Documents. The value of work performed and the cost of materials and equipment delivered to the site, as mentioned above, shall be determined by the CITY'S REPRESENTATIVE in accordance with the procedure prescribed for the making of the final application for payment and payment under Paragraphs 14.8 and 14.9.

15.4 Termination of Contract by Contractor

- A. The CONTRACTOR may terminate the Contract upon 10 days written notice to the CITY, whenever: (1) the WORK has been suspended under the provisions of Paragraph 15.1, herein, for more than 90 consecutive days through no fault or negligence of the CONTRACTOR, and notice to resume work or to terminate the Contract has not been received from the CITY within this time period; or, (2) the CITY should fail to pay the CONTRACTOR any monies due him in accordance with the terms of the Construction Documents and within 60 days after presentation to the CITY by the CONTRACTOR of a request therefore, unless within said 10-day period the CITY shall have remedied the condition upon which the payment delay was based. In the event of such termination, the CONTRACTOR shall have no claims against the CITY except for those claims specifically enumerated in Paragraph 15.3, herein, and as determined in accordance with the requirements of said paragraph.

ARTICLE 16 -- MISCELLANEOUS**16.1 Giving Notice**

- A. Whenever any provision of the Construction Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

16.2 Title to Materials Found On the Work

- A. The CITY reserves the right to retain title to all soils, stone, sand, gravel, and other materials developed and obtained from excavations and other operations connected with the WORK. Unless otherwise specified in the Construction Documents, neither the CONTRACTOR nor any subcontractor shall have any right, title, or interest in or to any

such materials. The CONTRACTOR will be permitted to use in the WORK, without charge, any such materials, which meet the requirements of the Construction Documents.

16.3 **Right to Audit**

- A. If the CONTRACTOR submits a claim to the CITY for additional compensation, the CITY shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR'S books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR'S plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such representatives as the CITY deems desirable during the CONTRACTOR'S normal business hours at the office of the CONTRACTOR.

The CONTRACTOR shall make available to the CITY for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the CITY.

(END OF SECTION)

SUPPLEMENTARY CONDITIONS

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SECTION 00800

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

SUPPLEMENTARY CONDITIONS

SC-1 GENERAL

These Supplementary Conditions make additions, deletions, or revisions to the General Conditions as indicated herein. All provisions which are not so added, deleted, or revised remain in full force and effect. Terms used in these Supplementary General Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

SC-2 DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF CITY'S REPRESENTATIVE

Ken Reed, Senior Construction Manager, shall be the designated CITY'S REPRESENTATIVE for the Project. The CITY'S REPRESENTATIVE shall act as directed by and under the supervision of the CITY and will confer with the CITY regarding its actions. The CITY'S REPRESENTATIVE'S dealings in matters pertaining to the on-site WORK shall, in general, be only with the ENGINEER, and the CONTRACTOR, and dealings with subcontractors shall only be through or with the full knowledge of the CONTRACTOR. Written communication by the CONTRACTOR with the CITY will be only through or as directed by the CITY'S REPRESENTATIVE.

SC-3 COORDINATION WITH OTHER CONTRACTORS

A. Coordination

Due to the nature of the work and its effects on other contracts and/or contractors in this project, the Contractor shall coordinate all work with the Engineer, other Contractors and utility companies.

(END OF SECTION)

SECTION 01010

DIVISION 1 - GENERAL REQUIREMENTS

**SECTION 01010
SUMMARY OF WORK**

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The WORK to be performed under this Contract shall consist of furnishing parts, tools, equipment, materials, supplies and manufactured articles, and furnishing all labor, transportation and services, including fuel, power, water and essential communications, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be design/build and require that all work, materials and services not expressly indicated or called for in the Contract Documents, which may be necessary for the complete and proper construction of the WORK in good faith shall be provided.
- B. The WORK will conform to the City of Lathrop Design & Construction Standards, Caltrans 2018 Standard Plans and Standard Specifications, as well as to the City of Lathrop Municipal/City Code. The most stringent will govern.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The WORK of this Contract comprises the construction of the LOUISE AVENUE PAVEMENT REHABILITATION Project as listed in the Bid Item List, in Lathrop, CA as defined in the Contract Documents.

The WORK for the LOUISE AVENUE PAVEMENT REHABILITATION Project shall include but not limited to the following major work items and requirements:

- 1. The work shall include full depth reclamation and reconstruction of the road structural section and wearing course and construction of a 12” water main within a 4,000-foot segment of Louise Avenue as shown in the construction documents;
 - 2. General Requirements listed in Division 01 of this Specifications;
 - 3. Technical Specifications listed in Divisions 02, 10 and 15 of this Specifications;
 - 4. All work on this project will be coordinated with the City’s Engineering and Public Works staff
- B. The WORK includes obtaining any permits related to or required by the Contract.
 - C. The following documents will control the technical work for each of the corresponding work types
 - 1. Pavement Rehabilitation / Full Depth Reclamation / Grading
 - a. Plans: Louise Avenue Pavement Rehabilitation Project, PS 18-01 by Pavement Engineering, Inc.
 - b. Technical Specifications: Division 2 – Site Work Technical Specifications

SECTION 01010

2. Water Main Line Construction

- a. Plans: Louise Avenue Water Transmission Main Project, PS 18-01 by O'Dell Engineering
- b. Technical Specifications: Division 2 – Utility Work Technical Specifications

1.3 WORK BY OTHERS

- A. Where two (2) or more Contracts are being performed at one time on the same Site or adjacent land in such manner that work under one (1) Contract may interfere with work under another, the sequence and order of the WORK in either or both Contracts to the agreement of both contracting entities shall be determined. When the Site of one (1) Contract is the necessary or convenient means of access for performance of work under another, the privilege of access or other reasonable privilege to the CONTRACTOR so desiring may be granted, to the extent, amount, and in manner and at a time that shall be determined. Conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.
- B. Interference with Work on Utilities: Cooperate fully with all utility forces or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities, which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering or other rearranging of facilities. Any delays, reduction in work efficiency or hardships incurred shall be identified and resolved to the satisfaction of both parties.

1.4 USE OF SITE

- A. Use of the Site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities and field offices.
- B. All or part of the existing Site may be utilized during the entire period of construction for the conduct of normal operations. Cooperate and coordinate to facilitate operations and to minimize interference with the operations at the same time. In any event, access to the site during the period of construction shall be allowed.

1.5 GENERAL

- A. All reference to the Standard Specifications refer to the California Department of Transportation (Caltrans) 2018 Standard Specification. If there have been recent significant revisions to Caltrans Standard Specification, the senior construction manager will determine which specification to use. Senior construction manager, Ken Reed can be reached at (209) 941-7363; email: kreed@ci.lathrop.ca.us.

(END OF SECTION)

SECTION 01040

SECTION 01040
COORDINATION

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall coordinate the WORK of all crafts, trades and subcontractors engaged on the WORK and he shall have final responsibility in regards to the Schedule, workmanship and completeness of each and all parts of the WORK.
- B. All crafts, trades and subcontractors shall be made to cooperate with each other and with others, as they may be involved in the installation of work, which adjoins, incorporates, precedes or follows the work of another. It shall be the CONTRACTOR's responsibility to point out areas of cooperation prior to execution of subcontractors Agreements and the assignment of the parts of the WORK. Each craft, trade and subcontractor shall be responsible to the CONTRACTOR, for furnishing embedded items, giving directions for doing all cutting and fitting, making all provisions for accommodating the WORK and for protecting, patching, repairing and cleaning as required to satisfactorily perform the WORK.
- C. The CONTRACTOR shall be responsible for supervising all cutting, digging and other action of his subcontractors and workers. Where such action impairs the safety or function of any structure or component of the Project as determined by the ENGINEER, the CONTRACTOR shall make such repairs, alterations and additions as will bring said structure or component back to its original design condition at no additional cost to the OWNER.
- D. The CONTRACTOR is expected to be familiar with the General Requirements and all Sections of the detailed Specifications for all other trades and to study all Drawings applicable to his WORK to the end that complete coordination between the trades will be affected. CONTRACTOR shall submit the Request for Information (RFI) to the ENGINEER if conflicts exist within the Contract Documents.

The CONTRACTOR shall review the RFI and submit, with comments, to the ENGINEER for review and response. The RFI request should include a requested response date. The ENGINEER will make every effort to meet that requested date. However, the ENGINEER will have 14 business days to review and respond back to the CONTRACTOR. If the natures of the RFI or circumstances surrounding the RFI are beyond the control of the ENGINEER, requiring the need of more than 14 business days, the ENGINEER will notify the CONTRACTOR within five business days of receipt that it will take longer than 14 business days. At that time, the CONTRACTOR and ENGINEER will establish an agreed upon response date.

Upon receipt of the RFI response, the CONTRACTOR shall distribute the RFI response as necessary. The CONTRACTOR will be required to keep and maintain a numbered log of the RFI's and responses. A copy of the log, and detail of each RFI shall be submitted to the ENGINEER for Project closeout.

SECTION 01040

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

COORDINATION

- E. At the discretion of the ENGINEER, additional clarification information may be provided to the CONTRACTOR, regarding the Contract Documents. This notification shall be submitted on an Engineering Supplemental Information (ESI) form. It is the intent of the ESI to provide additional clarification information to the Contract Documents. It is the intent of the ENGINEER to transmit the ESI's in a timely manner. However, the ENGINEER shall not be held responsible for rework to work performed prior to issuance of the ESI.

(END OF SECTION)

SECTION 01045

**SECTION 01045
CUTTING AND PATCHING**

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. Perform all WORK associated with cutting and patching for connection to existing water and sewer lines. This shall be complete and operable, in accordance with the Contract Documents.
- B. Do not cut and patch in a manner that would result in: a failure of the WORK to perform as intended; decreased energy performance; increased maintenance; decreased-operational life, or decreased safety.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Match existing materials for cutting and patching work with new materials conforming to Project Requirements.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Inspect conditions prior to WORK to identify scope and type of WORK required. Protect adjacent WORK. Notify ENGINEER and the OWNER of WORK requiring interruption to the OWNERS operations.
- B. Perform WORK with Workmen skilled in the trades involved.
- C. Cutting: Use cutting tools, not chopping tools. Make neat holes. Minimize damage to adjacent work. Check for concealed utilities and structure before cutting.
- D. Patching: Make patches, seams and joints durable and inconspicuous. Comply with tolerances for new WORK.
- E. Clean WORK area and areas affected by cutting and patching operations.

(END OF SECTION)

SECTION 01090

SECTION 01090 REFERENCE STANDARDS

PART 1 – GENERAL

1.1 GENERAL

- A. Titles of Sections and Paragraphs: Titles and Subtitles accompanying Specification Sections and paragraphs are for convenience and Reference only and do not form a part of the Specifications.
- B. Applicable Publications: Whenever in these Specifications References are made to Published Specifications, Codes, Standards or other Requirements, it shall be understood that wherever no date is specified, only the latest Specifications, Standards or Requirements of the respective issuing agencies, which have been published as of the date that the Contract shall apply; except to the extent that said Standards or Requirements may be in conflict with applicable Laws, Ordinances or Governing Codes. No Requirements set forth in the Specifications or shown on the Drawings will be waived because of any provision of, or omission from, said Standards or Requirements.
- C. Specialists, Assignments: In certain instances, Specification text requires (or implies) that specific WORK is to be assigned to specialists or expert entities, who must be engaged for the performance of that WORK. Such assignments shall be recognized as Special Requirements. These Requirements shall not be interpreted so as to conflict with the enforcement of Building Codes and similar Regulations Governing the WORK; also, they are not intended to interfere with Local Union Jurisdiction Settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "Expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of Contract Requirements remains.

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Construct the WORK in accordance with the Contract Documents and the referenced portions of those Referenced Codes, Standards and Specifications.
- B. Verify the following references agree with the plans and local requirements - References herein to "Building Code" shall mean California Building Code (CBC) 2016. Similarly, references to "Mechanical Code" or "International Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "International Fire Code," shall mean California Mechanical Code (CMC) 2016, California Plumbing Code (CPC) 2016 and California Fire Code (CFC) 2016. "Electric Code" or "National Electric Code (NEC)" shall mean the California Electrical Code (CEC) 2016, and National Electric Code of the National Fire Protection Association (NFPA) 2017. The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the WORK is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the WORK herein, including all Addenda, Modifications, Amendments, or other Lawful changes thereto.
- C. In case of conflict between Codes, Reference Standards, Drawings and the other Contract Documents, the most stringent Requirements shall govern. All conflicts shall be brought to the

SECTION 01090

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

REFERENCE STANDARDS

attention of the ENGINEER for clarification and directions prior to ordering or providing any materials or furnishing labor through the RFI process. The most stringent Requirements may be bid on.

- D. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
- E. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards (OSHA), Code of Federal Regulations, including all changes and Amendments thereto.
- F. Applicable Standard Specifications: References in the Contract Documents to "Standard Specifications" or SSPWC shall mean the Standard Specifications for Public Works Construction, Caltrans 2018 Standard Plans and Standard Specifications or the City of Lathrop Design & Construction Standards.

1.3 REGULATIONS RELATED TO HAZARDOUS MATERIALS

- A. Responsibility for all work included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of hazardous materials, including petroleum products.

(END OF SECTION)

SECTION 01150

**SECTION 01150
MEASUREMENTS AND PAYMENT**

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. Furnish all necessary labor, machinery, tools, apparatus, equipment, materials, services and other necessary supplies and perform all work shown on the Drawings and/or described in the Specifications and Contract Documents at the Lump Sum Price.

1.2 PROGRESS AND PAYMENT SCHEDULES

- A. Within 15 days after the date of formal execution of the Agreement, prepare and submit, for approval, a Construction Schedule, which depicts the plan for completing the Contract requirements.
- B. Maintain a current Construction Schedule updated monthly at the Site available for inspection. The Schedule shall reflect all approved Change Orders and their impact to the Project Schedule.

1.3 CONDITIONS FOR PAYMENT

- A. Make payments for acceptable work in place and materials properly stored on-site. The value of payment shall be as established on the approved Schedule of Values. Terms of payment shall be as stated in the Contract Agreement.

1.4 CLAIMS FOR EXTRA WORK (See also the Contract)

- A. If any claims that instructions by the Governmental Agency or others involve extra cost, the CONTRACTOR shall give written notice of said claim within 15 days after the receipt of such instructions, and in any event before proceeding to execute the work, stating clearly and in detail the basis of his claim or claims. No such claim shall be valid unless so made.
- B. If, on the basis, of the available evidence, the determination is made that an adjustment of the Contract Price or time is justifiable, the procedure shall then be as provided in the Contract.

(END OF SECTION)

SECTION 01294

SECTION 01294
APPLICATIONS FOR PAYMENT

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Procedures for preparation and submittal of Applications for Payment.
- B. Related Section:
 - 1. Section 01310 - Progress Schedules and Reports.

1.2 FORMAT

- A. Develop satisfactory spreadsheet-type form generated by downloading cost data from the Progress Schedule.
- B. Fill in information required on form.
- C. When Change Orders are executed, add Change Orders at end of listing of scheduled activities.
 - 1. Identify change order by number and description.
 - 2. Provide cost of change order in appropriate column.
- D. After completing, submit Application for Payment.
- E. The ENGINEER will review application for accuracy. When accurate, the ENGINEER will transmit application to CITY for processing of payment.
- F. Execute application with signature of responsible officer of CONTRACTOR.

1.3 SUBSTANTIATING DATA

- A. Provide Substantiating Data with cover letter identifying:
 - 1. Project.
 - 2. Application number and date.
 - 3. Detailed list of enclosures.
 - 4. For stored products with item number and identification on application, description of specific material, and proof of insurance coverage for offsite stored products and copies of invoices.
 - 5. Submit "certified" payroll where required in the Contract.

SECTION 01294

1.4 SUBMITTALS

- A. Submit five copies of Application for Payment and Substantiating Data with cover letter.
- B. Coordinate requirements with the Contract General Conditions, Article 4 - Progress Payments to Contractor.

1.5 PAYMENT REQUESTS

- A. Prepare progress payment requests on a monthly basis. Base requests on the breakdowns of costs for each scheduled activity and the percentage of completion for each activity.
- B. Indicate total dollar amount of work planned for every month of the project. Equate sum of monthly amounts to Lump Sum Contract Price.
- C. Generate Progress Payment request forms by downloading cost data from the schedule information to a spreadsheet type format. Identify each activity on the Progress Schedule that has a cost associated with it, the cost for each activity, the estimated percent complete for each activity, and the value of work completed for both the payment period and job to date.
- D. Prepare summary of cost information for each Major Item of Work listed in the Schedule of Values. Identify the value of work completed for both the payment period and job to date.
- E. Submit progress payment requests at progress meetings.

(END OF SECTION)

SECTION 01310

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

PROGRESS SCHEDULES AND REPORTS

**SECTION 01310
PROGRESS SCHEDULES AND REPORTS**

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Preparation, submittal and maintenance of computerized progress schedule and reports, contract time adjustments and payment requests, including the following:

1. Preliminary Schedule
2. Baseline Schedule
3. Weekly Schedule
4. Schedule Updates
5. Schedule Revisions
6. Time Impact Analyses
7. Final Schedule Submittal

- B. Related Sections:

NOT USED

- C. OWNER reserves the right to disapprove scheduler when submitted by CONTRACTOR if not qualified. OWNER reserves the right to remove scheduler from the project if found to be incompetent.

1.2 PRECONSTRUCTION SCHEDULING MEETING

- A. The CONTRACTOR will conduct a Preconstruction Schedule Meeting within 14 Calendar days after Notice to Proceed. This meeting is separate from the Preconstruction Conference Meeting and is intended to cover schedule issues exclusively.
- B. At the meeting, scheduling requirements shall be reviewed with CONTRACTOR. These include schedule preparation, reporting requirements, updates, revisions and schedule delay analysis. CONTRACTOR shall present their schedule methodology, planned sequence of operations and present their proposed activity coding structure.
- C. Coding Structure: CONTRACTOR shall submit proposed coding structure, identifying the code fields and the associated code values it intends to use in the project schedule. The coding structure shall, at a minimum, include code fields for Project Segment or Phase, Area of Work, Type of Work, Submittal/Procurement/Construction and Responsibility/Subcontractor.

1.3 PREPARATION

- A. Preparation and submittal of Progress Schedule represents CONTRACTOR'S intention to execute the WORK within specified time and constraints.

SECTION 01310

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

PROGRESS SCHEDULES AND REPORTS

- B During preparation of the preliminary Progress Schedule, ENGINEER will facilitate CONTRACTOR efforts by being available to answer questions regarding sequencing issues, scheduling constraints, interface points and dependency relationships.
- C Failure to include an activity required for execution of the Work does not excuse CONTRACTOR from completing the WORK and portions thereof within specified times and at price specified in Agreement. Failure of CONTRACTOR to include required schedule constraints, sequences or milestones in schedule shall not relieve CONTRACTOR of obligation to conform to requirements of Contract. Acceptance of schedule shall not waive Contract requirements. In event of conflict between accepted schedule and Contract requirements, terms of Contract shall govern at all times, unless requirements are waived in writing by the CITY.
- D Reference Schedule to calendar days with beginning of Contract Time as Day "1."
- E Should CONTRACTOR submit a Baseline Schedule showing project completion more than 20 working days prior to Contract completion date OWNER may issue Change Order, at no cost to OWNER, revising time of performance of WORK and Contract completion date to match CONTRACTOR'S schedule completion date. Contract milestone dates, if any, shall be adjusted accordingly.
- F Schedule Logic: Schedule shall be assembled to show order in which CONTRACTOR proposes to carry out WORK, indicate restrictions of access, availability of Work areas, and availability and use of manpower, materials and equipment. Following criteria shall form basis for assembly of schedule logic.
 - 1. Which activities must be completed before subsequent activities can be started?
 - 2. Which activities can be performed concurrently?
 - 3. Which activities must be started immediately following completed activities?
 - 4. What major facility, equipment or manpower restrictions are required for sequencing these activities?

1.4 SUBMITTAL OF PROGRESS SCHEDULES

- A. Submit preliminary
- B. Submit, on a monthly basis, updated schedules as specified. Submit final schedule update as specified.
- C. Submit revised schedules and time impact analyses as specified.

1.5 NETWORK DETAILS AND GRAPHICAL OUTPUT

- A. Produce a clear, legible and accurate calendar based, time scaled, graphical network diagram. Group activities related to the same physical areas of the WORK. Produce the network diagram based upon the early start of all activities.

SECTION 01310

LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01

PROGRESS SCHEDULES AND REPORTS

- B. Include for each activity, the description, activity number, estimated duration in calendar days, total float and all activity relationship lines.
- C. Illustrate order and interdependence of activities and sequence in which WORK is planned to be accomplished. Incorporate the basic concept of the precedence diagram network method to show how the start of one activity is dependent upon the start or completion of preceding activities and its completion restrict the start of following activities.
- D. Indicate the critical path for the project.
- E. Identify system shutdown dates, system tie-in dates, specified interim completion or milestone dates and contract completion date as milestones.
- F. Include, in addition to Construction Activities:
 - 1. Submission dates and review periods for major equipment submittals.
 - 2. Any activity by the OWNER that may affect progress or required completion dates.
 - 3. Equipment and long-lead material deliveries over eight (8) weeks.
 - 4. Approvals required by regulatory agencies or other third parties.

1.6 SCHEDULE OF SHOP DRAWING AND SAMPLE SUBMITTALS

- A. After the Schedule has been submitted and accepted by OWNER, CONTRACTOR shall print out, submit list of all shop drawings and sample submittals for all WORK using early start dates. This listing will contain all submittals required for the entire WORK including those listed above.

1.7 UPDATING THE SCHEDULE

- A. Update the schedule on a monthly basis, using the first of each month as a data date.
- B. Should monthly Schedule Update show project completion later than current Contract completion date, CONTRACTOR shall prepare and submit a plan to show how the project will get back on schedule.

1.8 REVISIONS TO SCHEDULE

- A. Submit revised schedule within five (5) calendar days:
 - 1. When delay in completion of any activity or group of activities indicates an overrun of the Contract time or milestone dates by 20 working days or 5% of the remaining duration, whichever is less.
 - 2. When delays in submittals, deliveries or work stoppages are encountered making necessary the replanning or rescheduling of activities.

SECTION 01310

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

PROGRESS SCHEDULES AND REPORTS

3. When the schedule does not represent the actual progress of activities.
 4. When any change to the sequence of activities, the completion date for major Portions of the work or when changes occur which affect the critical path.
 5. When Contract modification necessitates schedule revision, submit schedule analysis of change order work with cost proposal.
- B. Submit revised schedule and materials as specified under Article, "Submittal of Progress Schedule."
 - C. Make revisions on most recently accepted version of schedule.
 - D. Schedule Revisions shall not be prepared or submitted with Schedule Updates. They shall be separate submittals and shall be noted as Schedule Revisions.
 - E. Only upon acceptance of a revision by the OWNER shall it be reflected in the next monthly Schedule Update.
 - F. Schedule Revisions submitted for the purpose of mitigating a CONTRACTOR caused project delay (Recovery Schedule) shall not be implemented until the OWNER reviews and accepts the Schedule Revision.
- 1.9 ADJUSTMENT OF CONTRACT TIMES
- A. If the CONTRACTOR believes that the OWNER has impacted its work, such that the project completion date will be delayed, the CONTRACTOR must submit proof demonstrating the delay to the critical path. This proof, in the form of a Time Impact Analysis, may entitle the CONTRACTOR to an adjustment of contract time.

(END OF SECTION)

**SECTION 01329
SAFETY PLAN**

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Development and maintenance of a Construction Safety Plan.

1.2 REFERENCES

- A. California Labor Code
- B. OSHA.

1.3 CONSTRUCTION SAFETY PLAN

- A. Detail the Methods and Procedures to comply with California Labor Code, Federal, and Local Health and Safety Laws, Rules and Requirements for the duration of the Contract Times. Include the following:
 - 1. Identification of the Certified or Licensed Safety Consultant who will prepare, initiate, maintain and supervise safety programs, and procedures.
 - 2. Procedures for providing workers with an awareness of safety and health hazards expected to be encountered in the course of construction.
 - 3. Safety equipment appropriate to the safety and health hazards expected to be encountered during construction. Include warning devices, barricades, safety equipment in public right-of-way and protected areas, and safety equipment used in multi-level structures.
 - 4. Methods for minimizing employees' exposure to safety and health hazards expected during construction.
 - 5. Procedures for reporting safety or health hazards.
 - 6. Procedures to follow to correct a recognized safety and health hazard.
 - 7. Procedures for investigation of accidents, injuries, illnesses and unusual events that have occurred at the construction site.
 - 8. Periodic and scheduled inspections of general work areas and specific work stations.
 - 9. Training for employees and workers at the jobsite.
 - 10. Methods of communication of safe working conditions, work practices and required personal protection equipment.

SECTION 01329

- B. Assume responsibility for every aspect of Health and Safety on the jobsite, including the health and safety of Subcontractors, suppliers, and other persons on the jobsite.
 - 1. Forward available information and reports to the Safety Consultant who shall make the necessary recommendations concerning worker health and safety at the jobsite.
 - 2. Employ additional health and safety measures specified by the Safety Consultant, as necessary, for workers in accordance with OSHA guidelines.
- C. Transmit to OWNER and ENGINEER copies of reports and other documents related to accidents or injuries encountered during construction.

(END OF SECTION)

SECTION 01400
QUALITY CONTROL

PART 1 – GENERAL

1.1 THE REQUIRMENT

- A. The Specific Quality Control Requirements for the WORK are indicated throughout the Contract Documents. The Requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes preactivity inspection, follow up meetings, sampling and testing, and associated requirements.

1.2 INSPECTION AT PLACE OF MANUFACTURE

- A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the ENGINEER at the place of manufacture.
- B. Unless noted otherwise, the presence of the ENGINEER at the place of manufacturer is not required; however, this shall not relieve responsibility for providing products, materials and equipment that comply with all requirements of the Contract Documents.

1.3 SAMPLING AND TESTING

- A. Unless otherwise indicated, all sampling and testing will be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered.

1.4 INSPECTION AND TESTING SERVICE

- A. Inspection and testing laboratory service shall comply with the following:
 - 1. Unless indicated otherwise by the Technical Specifications, an independent firm will be appointed and employed by the CONTRACTOR to perform special inspection and soils and concrete testing.
 - 2. Perform inspections, testing and other services as required.
 - 3. Submit Reports of Testing to the ENGINEER, CONTRACTOR and OWNER if required in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
 - 4. Cooperate with the independent firm and furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
 - 5. Notification prior to the expected time for operations requiring inspection and laboratory testing services is required.

6. The same independent firm on instructions shall perform retesting required because of non-conformance to requirements.
7. For tests and samples required, arrangements shall be made with an independent firm for payment and scheduling of testing. Responsibility shall be taken for the cost of sampling and testing.
8. Provide an overall report on inspection and test results for project closeout.

PART 2 – EXECUTION

2.1 INSTALLATION

- A. Inspection: Inspect materials or equipment upon arrival on the job site, prior to installation and reject damaged and defective items.
- B. Measurements: Verify measurements and dimensions of the WORK, as an integral step of starting each installation.
- C. Manufacturer's Instructions: Where installations include manufactured products, compliance with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents is required.

(END OF SECTION)

SECTION 01410

**SECTION 01410
TESTING LABORATORY SERVICES**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. The CONTRACTOR shall be responsible and pay for an independent testing laboratory to perform the specified services.
- B. Inspection, sampling and testing shall be as specified in the individual Technical Specifications Sections and as specified in the Water Utilities Manual.
- C. Water system testing and sampling will be in accordance with the Water Utilities Manual and will be at the CONTRACTOR's expense.
- D. The testing laboratory is not authorized to approve or accept any portion of the work; rescind, alter or augment the requirements of the Contract Documents; or perform any duties of the CONTRACTOR.

1.2 RELATED SECTIONS SPECIFIED ELSEWHERE

- A. Section 01300 – Record Drawings and Submittals (Not used)

1.3 QUALIFICATIONS OF LABORATORY

- A. Where applicable, the testing laboratory will meet "Recommended Requirements for Independent Laboratory Qualification", latest edition, published by American Council of Independent Laboratories and the basic requirements of ASTM E 329 "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction".
- B. Testing equipment used by the laboratory will be calibrated at maximum twelve (12) month intervals by devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

1.4 LABORATORY DUTIES

- A. The testing laboratory will:
 - 1. Perform specified inspections, sampling and testing of materials and methods of construction; comply with applicable standards; ascertain compliance with requirements of Contract Documents.
 - 2. Promptly notify AGENCY and CONTRACTOR of irregularities or

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deficiencies of work that are observed during performance of services.

3. Promptly submit five (5) copies of reports of inspections and tests to AGENCY, including:
 - a. Date issued.
 - b. Project title and number
 - c. Testing laboratory name and address.
 - d. Date of inspection or sampling.
 - e. Record of temperature and weather.
 - f. Date of test.
 - g. Identification of product and Specification Section.
 - h. Location in Project.
 - i. Type of inspection or test.
 - j. Results of tests and observations regarding compliance with Contract Documents.
4. Perform additional tests and services as required by AGENCY.

1.5 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel; provide access to work and to manufacturer's operations.
- B. Provide to laboratory, preliminary representative samples of materials to be tested, in required quantities.
- C. Furnish copies of product test reports.
- D. Provide to the laboratory the preliminary design mix proposed for concrete, and other material mixes that require testing by the testing laboratory.
- E. Furnish labor and facilities:
 1. To provide access to work to be tested.
 2. To obtain and handle samples at the site.
 3. To facilitate inspections and tests.
 4. For laboratory's exclusive use for storage and curing of test samples.
 5. Forms for preparing concrete cylinders.
- F. Notify laboratory and AGENCY a minimum forty eight (48) hours in advance of operations to allow for assignment of personnel and scheduling of tests.
- G. Arrange with laboratory and pay for, additional samples and tests as required.

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TESTING LABORATORY SERVICES

PART 2 – MATERIALS (NOT USED)

PART 3 – EXECUTION (NOT USED)

(END OF SECTION)

SECTION 01420

**SECTION 01420
AS BUILT DRAWINGS**

PART 1 – GENERAL

1.1 THE REQUIRMENT

- A. The CONTRACTOR and its Subcontractors at the start of the project shall provide a clean set of Drawings and mark on them, in large writing “As Built.” This set of drawings will be kept at the job site trailer and used to indicate with a red pencil, pen or marker the “As Built” conditions of the project. These drawings will be updated as the work progresses to reflect the “As Built” conditions.
- B. The CONTRACTOR shall be responsible to ensure that the “As Built” drawings are being kept up to date.
- C. Upon substantial completion, the CONTRACTOR shall obtain all “As Built” drawings and review them for accuracy and completeness. After the CONTRACTOR has reviewed and confirmed accuracy and completeness of the “As Built” drawings, the CONTRACTOR shall submit the drawings and survey information to the ENGINEER of record.
- D. Upon receipt of the “As Built” drawings the ENGINEER shall make all necessary changes to the documents and provide a Record Drawing set to the CONTRACTOR for their use and distribution as required for project closeout, see Section 01700.

(END OF SECTION)

SECTION 01510

SECTION 01510
MOBILIZATION / DEMOBILIZATION

PART 1 – GENERAL

1.1 Requirements

A. Mobilization shall include a verification by the CONTRACTOR that all permits have been obtained; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings and other construction facilities; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:

1. Moving onto the site of materials and equipment required for first month operations
2. Installing temporary construction power, wiring and lighting facilities if applicable.
3. Establishing a fire protection system as required.
4. Developing a construction water supply as required.
5. Providing field office trailers, complete with all specified furnishings and utility services (if available) including telephones, telephone appurtenances and copying machine
6. Providing all on-site communication facilities including telephones
7. Providing on-site sanitary facilities and potable water facilities.
8. Arranging for and erection of work and storage yard
9. Obtained all required permits for the project.
10. Comply with all OSHA required notices and establish a safety program
11. Having the superintendent or authorized representatives at the job site as required for execution of the work
12. Provide and implement an on-site Construction SWPP features and requirements complying with Section 01565 – Erosion and Sediment Control.
13. Provide and implement an on-site Dust Control Plan features and requirements complying with Section 01560 and 01563.

B. Measurement and Payment

Unless otherwise noted, measurement and payment for the contract work shall be in accordance with Section 01025 of the General Requirements. Full compensation for conforming to the requirements of the various sections within these Contract Documents (including the Bidding and Contract Documents, General Requirements and Technical Requirements), shall be considered as included in the prices paid for the various contract items of work involved (as listed on the Bid Schedule) and no additional compensation will be allowed

(END OF SECTION)

SECTION 01530

SECTION 01530 PROTECTION OF EXISTING FACILITIES

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. Protect all existing utilities and improvements, not designated for removal, CONTRACTOR shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than prior to such damage or temporary relocation, all in accordance with the Contract Documents.
- B. Submit Protection Plan prior to commencement of Work in accordance with Section 01300 Submittals.

1.2 RIGHTS-OF-WAY

- A. WORK that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, shall not be performed nor shall the entry upon the rights-of-way involved until notified that authority has been secured from the proper party.
- B. After authority has been obtained, said party shall be given due notice of its intention to begin work, if required by said party, and shall remove, shore, support, or otherwise protect such pipeline, transmission line, ditch, fence, or structure, or replace the same.

1.3 PROTECTION OF STREET OR ROADWAY MARKERS

- A. Do not destroy, remove or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. Survey markers or points disturbed shall be accurately restored after street or roadway resurfacing has been completed.

1.4 RESTORATION OF PAVEMENT

- A. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. The pavement restoration requirement to match existing sections shall apply to all components of existing sections, including sub-base, base, and pavement. Temporary and permanent pavement shall conform to the requirements of the affected pavement owner. Pavements that are subject to partial removal shall be neatly, saw cut in straight lines.
- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.

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- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Edges of damaged pavement, along excavations and elsewhere, shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.
- D. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions. If no such period of time is so fixed, maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: Protect underground Utilities and other improvements, which may be impaired during construction operations, regardless of whether or not the Utilities are indicated on the Drawings. Take all possible precautions for the protection of unforeseen Utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.
- B. Except where the Drawings indicate Utilities have been field located during design or certain Utility locations shall be exposed as part of the WORK, responsibility for exploratory excavations as it deems necessary to determine the exact locations and depths of Utilities, which may interfere with its work shall be required. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays progress.
- C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.
- D. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, upon request, the utility company or franchise holder will be notified to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, notification will be required with sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- E. Utilities to be Removed: The proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing utility or other improvement, which is indicated, removal, without unnecessary delay, temporarily replacement or relocation of such Utilities or improvement in a manner satisfactory to the owner of the facility shall be required. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished in a manner that will restore or replace the Utility or improvement as close to its former locations and to as good or better condition than found prior to removal.
- F. CITY'S Right of Access: The right is reserved to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this Contract.

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- G. **Underground Utilities Indicated:** Existing Utility lines that are indicated or the locations of which are made known prior to excavation and that are to be retained. All Utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling if damaged, shall be immediately repaired or replaced, unless otherwise repaired by the owner of the damaged Utility. If the owner of the damaged facility performs its own repairs, reimbursement to said owner for the costs of repair shall be required.
 - H. **Underground Utilities Not Indicated:** In the event that the existing Utility lines are damaged that are not indicated or the locations of which are not made known prior to excavation, a verbal report of such damage shall be made immediately, and a written report thereof shall be made promptly thereafter. Immediately notify the OWNER of the damaged Utility. The Utility Owner shall be notified of the damage. If directed, repairs shall be made under the provisions for changes and extra work contained in their Contract Agreement.
 - I. **Costs of locating and repairing damage,** not due to failure to exercise reasonable care and removing or relocating such Utility facilities, not indicated in the Contract Documents, with reasonable accuracy and for equipment on the project, which was actually working on that portion of the WORK which was interrupted or idled by removal or relocation of such Utility facilities, and which was necessarily idled during such work will be paid for as extra work resulting in the issuing of a change order in accordance with the provisions of the Contractual Agreement.
 - J. **Approval of Repairs:** All repairs to a damaged Utility or improvement are subject to inspection and approval by an authorized representative of the Utility or improvement owner before being concealed by backfill or other work.
 - K. **Maintaining in Service:** Unless indicated otherwise, oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other satisfactory arrangements are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. Responsible for and shall repair all damage due to its operations shall be required, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.
- 1.6 **TREES OR SHRUBS WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS**
- A. **General:** Except where trees or shrubs are indicated to be removed, exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency. Existing trees and shrubs that are damaged during construction shall be trimmed or replaced by a certified tree company under permit from the jurisdictional agency.
 - B. **Replacement:** Immediately notify the jurisdictional agency if any tree or shrub is damaged by operations. If, in the opinion of said agency, the damage is such that replacement is necessary, replace the tree or shrub at its own expense. The tree or shrub shall be of a like size and variety as the one damaged or if of a smaller size, the owner of said tree shall be paid a compensatory payment

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acceptable to the tree or shrub owner, subject to the approval of the jurisdictional agency. The size of the tree or shrub shall be not less than 1-inch diameter or less than 6-feet in height. Planting of replacement trees and shrubs shall be in accordance with the recommendations of the nursery furnishing the plants.

1.7 LAWN AREAS

- A. Lawn or landscaped areas damaged during construction shall be repaired to match the pre-construction condition to the satisfaction of the landowner.

1.8 NOTIFICATION

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, notify the respective authorities representing the owners or agencies responsible for such facilities not less than 3 days nor more than 7 days prior to excavation so that a representative of said owners or agencies can be present during such work if they so desire.

(END OF SECTION)

SECTION 01560

**SECTION 01560
TEMPORARY ENVIRONMENTAL CONTROLS**

PART 1 – GENERAL

1.1 EXPLOSIVES AND BLASTING

- A. The use of explosives on the WORK will not be permitted.

1.2 RUBBISH CONTROL

- A. During the progress of the WORK, the CONTRACTOR shall keep the Site and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. Dispose of all rubbish and waste materials of any nature occurring at the Site, and shall establish regular intervals of collection and disposal of such materials and waste. Keep its haul roads free from dirt, rubbish and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the Site in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

1.3 SANITATION

- A. Toilet Facilities: The CONTRACTOR shall provide fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.
- B. Sanitary and Other Organic Wastes: The CONTRACTOR shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided or organic material wastes from any other source related to operations shall be disposed of away from the Site in accordance with all laws and regulations pertaining thereto.

1.4 CHEMICALS

- A. All chemicals used or furnished by the CONTRACTOR for or during project construction, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.5 CULTURAL RESOURCES

- A. Attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800, which provides for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called "cultural resources").

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TEMPORARY ENVIRONMENTAL CONTROLS

- B. Conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.
- C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, the following procedures shall be instituted:
 - 1. The CONTRACTOR shall issue a Field Order directive to cease all construction operations at the location of such potential cultural resources find.
 - 2. Such Field Order shall be effective until such time as a qualified archaeologist can be called to assess the value of these potential cultural resources and make recommendations to the State Historic Preservation Office.
- D. If the archaeologist determines that the potential find is a bona fide cultural resource, at the direction of the State Historic Preservation Office, work shall be suspended at the location of the find under the provisions for changes contained in the Contractual Agreement.

(END OF SECTION)

SECTION 01563

**SECTION 01563
DUST CONTROL**

PART 1 – GENERAL

1.1 DUST ABATEMENT

- A. Preventative measures to limit the production of dust in amounts damaging to property, cultivated vegetation or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity shall be taken in to account. Responsibility for any damage resulting from dust originating from its operations shall be the CONTRACTOR's. The dust abatement measures shall be maintained at all times during construction of the project, in accordance with the requirements of the local Air Quality Management District.

PART 2 – EXECUTION

2.1 GENERAL

- A. The CONTRACTOR shall take necessary measures to control any and all dust related to or as a result of construction activities under this Contract. The water necessary for the dust control operation will be Owner furnished, beyond that the CONTRACTOR shall be responsible to provide whatever means necessary to accomplish the task of Dust Control. The CONTRACTOR shall be responsible for any damage resulting from dust originating from construction activities under this Contract.

(END OF SECTION)

SECTION 01565

**SECTION 01565
EROSION AND SEDIMENT CONTROL**

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. Perform all WORK and take all measures necessary to control soil erosion resulting from construction operations, shall prevent the flow of sediment from the construction site, and shall contain construction materials (including excavation and backfill) within his protected working area, so as to, prevent damage to the adjacent wetlands and water courses.
- B. Do not employ any construction method that violates a rule, regulation, guideline or procedure established by Federal, State or local agencies having jurisdiction over the environmental effects of construction.
- C. Pollutants such as chemicals, fuels, lubricants, bitumen, raw sewage and other harmful waste shall not be discharged into or alongside of any body of water or into natural or man-made channels leading thereto.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Bales may be hay or straw, and shall be reasonably clean and free of noxious weeds and deleterious materials. Filter fabric for sediment traps shall be of suitable materials acceptable to the ENGINEER.

PART 3 – EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. Use any of the acceptable methods necessary to control soil erosion and prevent the flow of sediment to the maximum extent possible. These methods shall include, but not be limited to, the use of water diversion structures, diversion ditches and settling basins.
- B. Construction operations shall be restricted to the areas of work indicated on the Drawings and to the area, which may be entered for the construction of temporary or permanent facilities. The authority to limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and fill operations shall be given. The CONTRACTOR shall provide immediate permanent or temporary pollution control measures to prevent contamination of the wetlands and adjacent watercourses. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains and use of temporary mulches, mats, or other control devices or methods as necessary to control erosion. The cost of this work shall be borne by the CONTRACTOR.
- C. Excavated soil material shall not be placed adjacent to the wetlands or watercourses in a manner that will cause it to be washed away by high water or runoff. Earth berms or diversions shall be constructed to intercept and divert runoff water away from critical areas. Diversion outlets shall be stable or shall be stabilized by means acceptable to the ENGINEER. If for any reason construction

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materials are washed away during the course of construction, the CONTRACTOR shall remove those materials from the fouled areas.

- D. For Work within easements of rights-of-way, all materials used in construction such as excavation, backfill, roadway, and pipe bedding and equipment shall be kept within the limits of these easements or rights-of-way.
- E. The CONTRACTOR shall not pump silt-laden water from trenches or other excavation into the wetlands, or adjacent watercourses. Instead, silt-laden water from his excavations shall be discharged within areas surrounded by baled hay or into sediment traps to ensure that only sediment-free water is returned to the watercourses. Damage to vegetation by excessive watering or silt accumulation in the discharge area shall be avoided.
- F. Prohibited construction procedures include, but are not limited to the following:
 - 1. Dumping of spoil material into any streams, wetlands, surface waters or unspecified locations.
 - 2. Indiscriminate, arbitrary or capricious operation of equipment in wetlands or surface waters.
 - 3. Pumping of silt-laden water from trenches or excavations into surface waters, or wetlands.
 - 4. Damaging vegetation, adjacent to or outside the construction area limits.
 - 5. Disposal of trees, brush, debris, paints, chemicals, asphalt products, concrete curing compounds, fuels, lubricants, insecticides, wash water from concrete trucks or hydroseeders, or any other pollutant in wetlands, surface waters, or unspecified locations.
 - 6. Permanent or unauthorized alternation of the flow line of any stream.
 - 7. Open burning of debris from the construction work.
- G. Any temporary working roadways required shall be clean fill approved by the ENGINEER. In the event fill is used, the CONTRACTOR shall take every precaution to prevent the fill from mixing with native materials of the site. All such foreign fill materials shall be removed from the site following construction.

(END OF SECTION)

SECTION 01570 – TRAFFIC CONTROL**PART 1 - GENERAL****1.01 Section Includes**

- A. Traffic Control Plans
- B. Construction Parking Control
- C. Traffic Control Devices (barricades, cones, signs, flashing arrow signs, etc.)
- D. Traffic Control Staffing

1.02 Submittals

- A. Traffic Control Plans (Vehicle and Pedestrian)
 - 1. At or prior to the pre-construction meeting, the Contractor shall submit traffic control plans (vehicles and pedestrian) for review and approval by the Engineer. The traffic control plans shall cover all phases of the work. These plans shall show a detailed layout of work areas and all traffic control devices to control vehicular, pedestrian, and bicycle traffic. No payment shall be made to the Contractor until the Traffic Control plan has been accepted by the Engineer.
 - 2. The Contractor shall supply, place and maintain all necessary traffic control devices during construction in accordance with the applicable requirements of the California Manual on Uniform Traffic Control Devices (MUTCD), latest edition, and the traffic control plans approved by the City.

1.03 Construction Signs

The Contractor shall provide all construction signs in accordance with the traffic control plans.

PART 2 - PRODUCTS**2.01 Cones and Barricades**

- A. Cones and barricades used to direct traffic flow shall conform to Caltrans Standard Specifications, Sections 12-3.03 and 12-3.10. They are to be in good condition and sufficiently clean so as to be easily visible to traffic.
- B. Type III barricades shall be used when a street is closed to vehicular traffic.
- C. At least one flashing light must be installed on each barricade. Maintain flashing lights in good working order throughout the duration of the Work.

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2.02 Traffic Control Signs

- A. Signs to be used for traffic control, including flashing arrow signs (Type A or Type II) and shall conform to the requirements of the latest edition of the California MUTCD.
- B. “No Parking Tow-Away” signs shall be provided by the Contractor.

2.03 Traffic Control Staffing

- A. Flagmen
 - 1. Persons designated by the Contractor to serve as flagmen shall be trained and equipped to perform in accordance with Caltrans flagging procedures. Proof of training shall be provided to the CITY’S REPRESENTATIVE prior to flagging operations.
 - 2. If complaints are received from the public regarding the performance of flagmen, the City will review the Contractor’s flagging operations. If the operations are determined to be unsafe and are not corrected after a warning by the City, police personnel may take over at the expense of the Contractor.

PART 3 - EXECUTION

3.01 Construction Parking Control

- A. Control vehicular parking to prevent interference with public traffic and parking, and access by emergency vehicles.
- B. No overnight parking of vehicles, equipment, or storage of materials in undesignated areas will be allowed.
- C. Contractor’s employees should refrain from parking on the neighborhood streets.

3.02 General Traffic Control Requirements

- A. The Contractor shall conduct his operations and schedule cleanup so as to cause the least possible obstruction and inconvenience to traffic, pedestrians, cyclists, and adjacent property owners. All work areas shall be swept clean at the end of the day’s work and at other times when directed by the City. A mobile street sweeper shall be used wherever practical, and dust shall be suppressed to the satisfaction of the City.
- B. The Contractor shall protect open excavations, trenches and such during construction with fences, covers and railings as required, together with signs, lights, and other warning devices sufficient to maintain safe pedestrian, bicycle and vehicular traffic to the satisfaction of the City.

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- C. Damage done by the Contractor during the course of the work to adjacent City or private property shall be repaired in kind, or as the Engineer shall direct, at the Contractor's expense. This includes the repair of traffic loop detectors, tape striping, signs, markings, etc.
- D. The Contractor shall remove all forms, debris, and undesirable material from the job site at the end of each work day.
- E. The Contractor shall notify the abutting property owners at least 48 hours prior to commencing work at their specific locations. This is in addition to the door hangers distributed as per these specifications. If the driveway to any garage or parking area is to be closed for construction work, this notice shall state the approximate time will be reopened.
- F. Dated "No Parking Tow-Away" signs shall be posted a minimum of 48 hours in advance of all work which requires that cars not be parked near the sites. The date and time of work shall be written on signs in 2" high letters with a ¼" felt marker. These signs shall be placed on either barricades per these specifications or tied to street trees located near the curb and gutter. All signs must be removed immediately after the specific work has been completed. Any cars which remain parked on the street in violation of the posted "No Parking Tow-Away" sign shall be towed away under direction of the Lathrop Police Department. The Contractor shall be responsible for notifying the Police Department at (209) 858-5551 of all vehicles that are to be towed away. The owner of the towed vehicles may contact the Police Department at (209) 858-5551. If the "No Parking Tow-Away" signs have not been posted for the required 48 hours and the car is towed, the Contractor shall be liable for the cost of towing.
- G. No stockpiling of materials or parking of equipment during non-working hours will be allowed on City property, i.e., streets, alleys, parking lots, or sidewalks, etc. Materials stockpiling and equipment parking will be allowed in areas designated by the Engineer only.
- H. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor at his expense.
- I. The Contractor shall maintain at a minimum one lane of traffic in each direction at all times on all streets or as directed by the Engineer. Contractor is to use arrow board for lane closures. If a street is to be closed, the contractor shall call City Engineering (209-941-7200, Ext. 7292), Police (209-858-5551) and Fire Departments (209-858-2331) prior to the start of work each day, to report/confirm all scheduled street closures. The Contractor shall coordinate with the U.S. Post Office (Lathrop Branch – 209-858-2324) in advance of street closure to coordinate mail delivery and Allied Waste Service (209-466-3604) to coordinate trash collection.

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- J. Contractor shall maintain access to all driveways except when actually doing construction within the driveway boundaries, at which time partial access will be maintained unless alternate arrangements can be made with the property owners or tenants in advance.
- K. Each pedestrian crosswalk, when crossed by construction excavation, shall be provided with a safe pedestrian crossing platform.
- L. Work shall not restrict visibility of any traffic control device.
- M. No closure of any lane will be permitted during 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.
- N. City of Lathrop Truck Routes shall be used for heavy equipment.
- O. In the event that a lane closure is required after normal working hours, Contractor will be required to provide traffic controls (arrow boards, etc.) for the duration of the lane closure.

(END OF SECTION)

SECTION 01600

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

PRODUCTS, MATERIALS, EQUIPMENT AND SUBSTITUTIONS

**SECTION 01600
PRODUCTS, MATERIALS, EQUIPMENT AND SUBSTITUTIONS**

PART 1 – GENERAL

1.1 DEFINITIONS

- A. The word "Products" as used in the Contract Documents is defined to include purchased items for incorporation into the WORK, regardless of whether specifically purchased for the project or taken from stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, installed or applied to form WORK. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction" and similar terms, which are self-explanatory and have recognized meanings in the construction industry.
- B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying and erection of the WORK.

1.2 QUALITY ASSURANCE

- A. Source Limitations: To the greatest extent possible for each unit of WORK, the CONTRACTOR shall provide products, materials and equipment of a singular generic kind from a single source.
- B. Compatibility of Options: Where more than one choice is available as options for selection of a product, material or equipment, select an option, which is compatible with other products, materials or equipment. Compatibility is a basic general requirement of product, material and equipment selections.

1.3 PRODUCT DELIVERY AND STORAGE

- A. Deliver and store the product in accordance with manufacturer's written recommendations and by methods and means that will prevent damage, deterioration and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at the Site and overcrowding of construction spaces. In particular, ensure coordination to ensure minimum holding or storage times for flammable, hazardous, easily damaged or sensitive materials to deterioration, theft, and other sources of loss.

1.4 TRANSPORTATION AND HANDLING

- A. Products shall be transported by methods to avoid damage and shall be delivered in undamaged condition in manufacturer's unopened containers and packaging.

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PRODUCTS, MATERIALS, EQUIPMENT AND SUBSTITUTIONS

- B. Provide equipment and personnel to handle products, materials and equipment by methods to prevent soiling and damage.
- C. Provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

1.5 STORAGE AND PROTECTION

- A. Products shall be stored in accordance with manufacturer's written instructions and with seals and labels intact and legible. Sensitive products shall be stored in weather-tight climate controlled enclosures and temperature and humidity ranges shall be maintained within tolerances required by manufacturer's recommendations.
- B. For exterior storage of fabricated products, products shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering and ventilation shall be provided to avoid condensation.
- C. Loose granular materials shall be stored on solid flat surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
- D. Storage shall be arranged to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.
- E. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.

1.6 MAINTENANCE OF PRODUCTS IN STORAGE

- A. Stored products shall be periodically inspected on a scheduled basis.
- B. Comply with manufacturer's product storage requirements and recommendations.
- C. Maintain manufacturer-required environmental conditions continuously.
- D. Ensure that surfaces of products exposed to the elements are not adversely affected and that weathering of finishes does not occur.
- E. For mechanical and electrical equipment, provide a copy of the manufacturer's service instructions with each item and the exterior of the package shall contain notice that instructions are included.
- F. Products shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document prior to final acceptance by the ENGINEER in accordance with the Contract Documents.

(END OF SECTION)

SECTION 01700

SECTION 01700
PROJECT CLOSEOUT

PART 1 -- GENERAL

1.1 RELATED REQUIREMENTS

A. **Related Sections:**

1. Section 00700 – General Conditions
2. Section 01710 – Final Cleaning

1.2 PERFORMANCE TESTING

- A. Perform a pre-start systems check in order to provide an efficient transition for start-up of facility. The performance testing shall proceed as follows:
- B. Perform systems checks, which include verification of proper equipment installation, operation, and calibration with the manufacturers or their representatives.
- C. Verify the performance of the equipment and controls through full scale operation using clean water. Water shall be conveyed to the facility and the basins shall be filled to their normal operating level. Water for testing shall be provided by the CONTRACTOR.
- D. Temporary piping shall be installed for the conveyance of water to the facility. All equipment shall be tested in normal operating mode to verify proper operation of all equipment in conjunction with the plant control system.
- E. Reclaimed water will be recycled through the plant for a total systems check for a period of at least 24 hours, or until the Engineer has determined that no adjustments are necessary. At discretion and direction of the Engineer, make adjustments or repairs to coordinate the operation of the systems and extend the duration, terminate, and restart the pre-start systems check as necessary.

1.3 SUBSTANTIAL COMPLETION

- A. Submit written certification to that the project is substantially complete.
- B. Submit list of major items to be completed or corrected.
- C. Engineer will make an inspection within seven days after receipt of certification, together with a representative.
- D. Should Engineer consider that work is substantially complete:
 1. Prepare, and submit to Engineer, a list of the items to be completed or corrected, as determined by on-site observation.
 2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:

SECTION 01700

- a. Date of Substantial Completion.
 - b. List of items to be completed or corrected, verified and amended.
 - c. The time required to complete or correct work of listed items.
 - d. Responsibilities for:
 - 1) Insurance
 - 2) Utilities
 - 3) Operation of mechanical, electrical and other systems
 - 4) Maintenance and cleaning
 - 5) Security
 - e. Signatures of: Engineer
3. Complete work listed for completion or correction, within designated time.
- E. Should Engineer consider that work is not substantially complete:
1. ENGINEER shall immediately notify, in writing, stating reasons.
 2. CONTRACTOR to complete work, and send second written notice to Engineer, certifying that Project, or designated portion of project of substantially complete.
 3. Engineer will re-review work.
- 1.4 FINAL INSPECTION
- A. Submit written certification that:
1. Contract Documents have been reviewed.
 2. Project has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in presence of Engineer and are operational.
 5. Project is completed and ready for final inspection.
- B. Engineer will make final on-site observation/review within seven (7) days after receipt of certification.
- C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, he shall prepare and issue the following:
1. Certificate of Completion;
 2. Complete sets of As-Built plans received; and
 3. A Request to make Project Closeout submittals.
- D. Should Engineer consider that work is not finally complete:
1. He shall notify, in writing, stating reasons.
 2. Take immediate steps to remedy the stated deficiencies, and send second written notice to Engineer certifying that work is complete.
 3. Engineer will re-review the work.
- 1.5 FINAL CLEANING UP

SECTION 01700

**LOUISE AVENUE PAVEMENT REHABILITATION
CIP PS 18-01**

PROJECT CLOSEOUT

The work will not be considered as completed and final payment made until all final cleanup has been done in a satisfactory manner. See Section 01710 for detailed requirements.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: to requirements of particular technical specifications and Section 01730.
- B. Equipment, materials, workmanship and performance Warranties and Bonds: to requirements of particular technical specifications.

1.7 INSTRUCTION

- A. Instruct personnel in operation of all systems, mechanical, electrical and other equipment.

1.8 FINAL APPLICATION FOR PAYMENT

- A. Submit final applications in accordance with requirements of Contractual Agreement.

1.9 FINAL CERTIFICATE FOR PAYMENT

- A. Engineer will issue final certificate in accordance with provisions of Contractual Agreement.

(END OF SECTION)

SECTION 01710

SECTION 01710 SITE MAINTENANCE AND CLEANUP

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. On a continuous basis, maintain premises free from accumulations of waste, debris and rubbish, caused by operations.
- B. At completion of WORK, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.
- C. **Related Sections:**
 - 1. Section 01045 – Cutting and Patching
 - 2. Section 01700 – Project Closeout

1.2 SAFETY REQUIREMENTS

- A. **Hazards control:**
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes, which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on Project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

SECTION 01710

PART 3 – EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute cleaning to ensure that building, grounds and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to prevent blowing dust.
- C. At reasonable intervals during progress of Work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off OWNER's property.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Each subcontractor areas of work shall thoroughly be cleaned of all materials and equipment installed from their areas of work.

3.2 FINAL CLEANING

- A. Employ experienced workers, or professional cleaners, for final cleaning.
- B. In preparation for substantial completion, conduct final inspection of sight-exposed interior and exterior surface, and of concealed spaces.
- C. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- D. Broom clean paved surfaces; rake clean other surfaces of grounds.
- E. Maintain cleaning until Project, or portion thereof, is occupied by OWNER.
- F. The CONTRACTOR shall restore or replace existing property or structures as promptly and practicable as work progresses.

(END OF SECTION)

TECHNICAL SPECIFICATIONS – SITE WORK

10-1.01 GENERAL REQUIREMENTS

Description of Work

The work generally consists of mobilization; setup and maintenance of traffic control system; developing and implementing a water pollution control program; pulverizing and regrading material; cold planning and off hauling excess materials, quicklime and/or cement soil treatment; hot mix asphalt (HMA) and rubberized hot mix asphalt (RHMA) paving; construction of concrete median curbs; replacement of concrete curb ramps, replacement of traffic striping and pavement markings; lowering and adjusting utilities; and related items of work as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The Contractor is required to inspect the site of the proposed work in order to satisfy himself, by personal examination, the location of the proposed work and the actual conditions of the proposed work. The Contractor is also required to have all sub-contractors personally inspect the site.

All work shall be done in conformance to the applicable provisions of the State of California, Department of Transportation, Standard Specifications (Caltrans); these Technical Specifications; and the plans and typical sections, except as modified herein. Unless specially mentioned otherwise, all reference to Standard Specifications (Caltrans) are for the 2018 version.

Payment for work, equipment and materials not specifically covered herein shall be included in the payment for related items of work. No additional payment will be made for work, equipment or materials not covered in these Technical Specifications, but necessary to insure a completed project as specified.

Any plan or method of work suggested by the City representative to the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, may be used at the risk and responsibility of the Contractor; and the City representative shall assume no responsibility therefor and in no way be held liable for any defects in the work which may result from or be caused by use of such plans or method of work.

Special instructions for construction timing on quicklime/cement soil treatment streets:
The contractor shall not commence work on quicklime and/or cement soil treatment of either stage of the project until there is a forecasted two-week (14 calendar day) window of dry weather (0% precipitation). The contractor must complete all work within the two-week window. The schedule for this work will be reviewed and approved by the City prior to the commencement of work.

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SITE WORK

Order of Work

Order of Work shall conform to the provisions in Section 8-1.02, "Schedule," of the Standard Specifications and these Technical Provisions.

The Contractor shall submit a construction schedule to the City representative for review and approval prior to the pre-construction meeting for the project. In preparing the construction schedule, the Contractor shall review, coordinate and allocate sufficient time to accommodate any permitting or material lead-time activities.

The City shall approve the order of work prior to the Contractor beginning construction.

Progress schedules coordinated with the utility provides will be required for this contract.

Roadway Preparation

Roadway preparation shall consist of preparing the roadway prior to construction as specified in these Technical Specifications and as required by the Engineer. Such work shall include controlling nuisance water; sweeping; watering; removal of all raised pavement markers; removal of all thermoplastic pavement markings; removal of loose and broken concrete, hot mix asphalt pavement, and foreign material; and the spraying and removal of weed growth. Any roadway area that contains existing weed growth shall be treated with an E.P.A. approved herbicide composed of glyphosate and oryzalin, combined and applied according to label directions.

In addition, the Contractor shall implement the Water Pollution Control Plan prior to the start of construction, as specified in these Special Provisions.

Project Site Maintenance

Project Site Maintenance shall take place throughout all phases of construction until final acceptance, including any periods of work suspension. The site shall be kept clean and free from rubbish and debris. The Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles as needed for the purpose of keeping paved areas acceptably clean wherever construction, including restoration, is incomplete.

The Contractor shall abate dust by sprinkling water or other means as necessary, but the use of water resulting in mud on streets will not be permitted.

Forms and lumber shall be removed the day of form removal. Materials and equipment shall be removed from the site as soon as they are no longer necessary.

Before the final inspection, the site shall be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. All pavement areas shall be swept with a street sweeper immediately prior to the final inspection. All concrete areas shall be broom cleaned.

All cleanup costs shall be included in the Contractor's bid. In the event that the Contractor fails to perform this final cleanup, the City may remove and/or dispose of the articles or materials at the Contractor's expense.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed

immediately and the area cleaned.

Twenty-Four (24)-Hour Contact Number

The Contractor shall assign a project superintendent who has the complete authority to make decisions on behalf of the Contractor. The Contractor shall provide to the City a twenty-four (24) hour contact number for the project superintendent. This number shall not direct calls to a recorder or other message taking service. Should the project superintendent not respond when called, the City representative shall make decisions as necessary and the resultant cost of such decisions shall be borne by the Contractor.

Cooperation

Attention is directed to Section 5-1.20, "Coordination with Other Entities," and Section 5-1.36 D, "Nonhighway Facilities," of the Standard Specifications.

Other forces, including City and utility company personnel, will likely be engaged in constructing or making adjustments to various utilities or other facilities throughout the project.

The Contractor shall coordinate their work with other forces.

Haul Routes

The Contractor and all subcontractors shall only use haul routes approved prior to the start of construction by the City representative.

Permits

The Contractor shall comply with Section 5-1.20B, "Permits, Licenses, Agreements and Certifications," of the Standard Specifications and these Technical Provisions.

Submittals

The materials proposed by the Contractor to be used on this contract shall be submitted for approval by the City representative, at least two (2) working days prior to the pre-construction conference. The Contractor shall provide one (1) electronic copy of each submittal for approval by the City.

Submittals and support information shall be separated and clearly labeled when submitted to the City for approval. **The Contractor shall create and maintain a submittal tracking log for each submittal package. Each material shall have a separate submittal number.** The list supplied is intended to be comprehensive, but no claim for its completeness is implied and submittal of the complete list will not relieve the Contractor of supplying all the information needed or of complying with any of the other requirements of the specifications. Revised lists may be issued and items may be added to the list supplied.

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The Manufacturer's specifications shall be supplied along with submittal list for all applicable products on the list. Certificates of Compliance shall be submitted in accordance with Section 6-3.05E, "Certificates of Compliance," of the Standard Specifications, including the individual material specification of these Technical Provisions.

Submittals shall contain:

1. The dates of submissions and the dates of any previous submissions, including identification of revision or re-submittals.
2. The Project Title and Number.
3. Contractor identification, names of subcontractors, suppliers and manufacturers.
4. Specification Section Number(s) and Bid Item(s) that pertain to the submittal.
5. Applicable standards, such as ASTM, Federal or State Specification numbers. Certified test results indicating performance of materials/products with regard to Specification requirements.
6. A blank space for the City representative stamps. The Contractor's stamp shall be required and shall be initialed or signed, certifying the review of submittals and verification of products, field construction criteria, and coordination of the information within the submittal and the specifications.

The Contractor shall be required to review and approve all submittals and provide them stamped and signed as evidence thereof, prior to submitting to the City for review. Submittals that are not stamped and signed by the Contractor will be rejected. Submittals shall be numbered consecutively.

The preparation of plans, drawings and necessary documents, as required by the following submittal lists, shall be considered as part of the requirements of other items of work and no additional compensation shall be allowed therefor.

The City reserves the right to reject any item that does not fulfill the requirements of these Technical Specifications and the Standard Specifications.

The Contractor shall submit the following to the City representative the following at least two (2) working days prior to the pre-construction conference:

1. Construction Schedule
2. Water Pollution Control Program
3. Traffic Control Plan
4. Notice to Businesses, Residents and Agencies
5. JMF for HMA & RHMA
6. Quicklime and/or Cement Mix Design (FDR)
7. Quality Control Plan for HMA, RHMA, and FDR

The Contractor shall submit the following to the City representative at least three (3) working days prior to the start of work:

1. Traffic Striping, Pavement Markings, and Raised Pavement Markers

Project Appearance

The Contractor shall maintain a neat and orderly appearance to the work site at all times. Debris developed during construction shall be disposed concurrently with its generation. Stockpiling of debris or construction materials shall not be allowed unless otherwise approved by the City representative.

Streets, gutter pans, sidewalks, driveways, and landscape strips immediately adjacent to the construction area streets shall be swept as needed and immediately following all grinding, sandblasting, rock-wheeling, grading, trucking operations and other construction activity that leaves dirt or debris in roadway. The Contractor shall sweep the street and gutter pan with a power pick-up broom immediately prior to the paving operations. The Contractor must maintain access to a power sweeper at all times and it shall be used to keep the streets and gutters free of loose or tracked material from the Contractor's operations. Should the Contractor fail to perform these duties, the City representative, at the City representative's sole discretion, may elect to have the City, or contract forces, perform the duties, deducting the expenses incurred from any monies that are due, or to become due, to the Contractor. By exercising this option, the Contractor is in no way relieved of the responsibility to perform these duties.

Measurement and Payment

Full compensation for "General" shall be considered as included in the contract prices paid for the various bid items of work involved and no additional compensation will be allowed therefore.

10-1.02 EXISTING FACILITIES**General**

Attention is directed to Special Provisions, 400.E.2 and these Technical Specifications.

It is not the intent of the plans to show the exact locations of existing underground utilities or structures and the agency Engineer assumes no responsibility therefore. Whenever any such utilities are indicated thereon the Contractor shall be responsible for verifying their actual location and depth in the field, by potholing if necessary. The Contractor shall be responsible for any damage to utilities shown on the plans, located by Underground Service Alert, or as specified herein, as a result of his operations.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions to protect the health, safety and welfare of the workmen and of the public. These facilities include, but are not limited to: irrigation lines and peripherals, parking light electric supply system conductors or conduits, telephone and cable service lines, either directly buried or in duct or conduit, and underground water, gas and electrical distribution systems.

The Contractor shall not be entitled to any right of way delays associated with the relocation or repair of these utilities and other facilities and shall cooperate fully with the owners of these utilities and other facilities for their relocation and repair work.

Existing utilities in the easements on private property that are not shown on the plans: the

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Contractor shall be responsible for locating said utilities prior to any construction and shall keep said utilities continuously functioning during the course of the work. If the Contractor for his own reasons needs to shut off or relocate any of said utilities, the Contractor shall give advance notice to and coordinate with the owner of the property and the occupant.

Equipment operating under PG&E electric and AT&T communications lines shall observe minimum clearance from the lines, and all other requirements, as set forth in Article 86 of the Electrical Safety Orders of the State division of Industrial Safety and AT&T requirements.

Where excavations are performed in the vicinity of underground utility mains and/or services the Contractor shall, as necessary, perform initial exploratory excavations to determine their exact depth and location. Payment for exploratory excavation shall be included in the various items of work needed to complete the excavation work. Extreme care shall be exercised to avoid damage, and it will be the Contractor's responsibility to have repairs made to existing facilities at his/her expense in the event of damage.

If applicable the Contractor shall keep the existing drainage system and sanitary sewer system fully functional at all times. If the Contractor for his own reasons desires to block off any portion of these systems, he shall construct a bypass system capable of handling the flow. This bypass system, if constructed, will be for the convenience of the Contractor and shall be constructed at his own expense.

The Contractor shall exercise care not to damage existing property including but not limited to trees, shrubs and landscaping outside the work area. Any damage caused by the contractor shall be replaced by the Contractor at his expense.

Prior to commencing any excavation, the Contractor shall notify Underground Service Alert (USA) three (3) days in advance of any excavations:

Underground Service Alert: Dial 811 or (800) 227-2600

Nothing in these Special Provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.04, "Public Safety," of the State Standard Specifications.

Measurement and Payment

Full compensation for "**Existing Facilities**" shall be considered as included in the contract prices paid for the various bid items of work involved and no additional compensation will be allowed therefore.

10-1.03 MOBILIZATION

General

Mobilization shall conform to the provisions of Section 9-1.16D "Mobilization," of the Standard Specifications as well as these Technical Specifications.

Mobilization shall consist of preparatory work and operations, including, but not limited to, equipment shipping and delivery, equipment setup, materials shipping and delivery, those necessary for the movement of personnel, equipment, supplies, utility coordination and permitting

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site restoration and demobilization, and incidentals to the project sites; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to and during work on the various contract items on the project site.

The Contractor shall insure that adequate existing sanitation facilities are available or the Contractor shall provide and maintain adequate sanitation facilities. All wastes and refuse from sanitary facilities provided by the Contractor shall be disposed of away from the site in accordance with all laws and regulations pertaining thereto.

Measurement and Payment

The contract lump sum price paid for “**Mobilization, Bonds & Insurance**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in Mobilization complete in place, including but not limited to preparation and submittal of all project records and documents, insurance, licenses and paying all applicable fees, delivery of all materials and equipment to the site required for operation, all preparatory work, coordination and cooperation required, attending project meetings, providing and removing on-site sanitary facilities, providing and adhering to occupational safety and health standards, developing a temporary construction staging area, demobilization and all other mobilization work, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.04 TRAFFIC CONTROL

General

Attention is directed to Sections 7-1.03, "Public Convenience," and Section 12, "Temporary Traffic Control," of the Standard Specifications and to the provisions in "Public Safety" of these special provisions as well as these Technical Specifications. The provision in this Section will not relieve the Contractor from his/her responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.04, "Public Safety," of the Standard Specifications.

All signs, marking, striping and devices used for Traffic Control shall conform to the current edition of the California Manual of Uniform Traffic Control Devices.

The Contractor shall fulfill the requirements of this section, twenty-four (24) hours per day, seven (7) days a week, including holidays, from the time the Notice to Proceed is issued until the project is formally accepted.

Traffic control shall be coordinated for the minimum inconvenience and maximum safety of the public during the construction period. The Contractor shall bear full responsibility for maintaining traffic control during the construction period.

The Contractor shall furnish all traffic control equipment, signs, flagmen and barricades necessary

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to complete the project.

Where work reduces street width, the Contractor shall provide flaggers to guide traffic. Flaggers and all personnel working near traffic shall wear CAL OSHA-approved safety clothing and equipment. Flaggers shall guide traffic with an appropriate stop/slow sign.

Property Access

Property access shall be maintained for residents at all times unless otherwise approved by the City. Upon approval by the City, access to certain properties may be temporarily closed if the or property owner agrees to the closure.

Traffic Control Plan

The Contractor shall submit an engineered traffic control plan to the City representative a minimum of two (2) weeks prior to the start of work. The traffic control plan shall be reviewed and accepted by the City representative prior to any work commencing on the project. All traffic control plans shall be prepared in accordance with the State of California Department of Transportation, "Manual of Traffic Controls for Maintenance and Construction Work Zones 2012," or latest adopted version.

Measurement and Payment

The contract lump sum price paid for "**Traffic Control**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in Traffic Control & Construction Area Signs, complete in place, including but not limited to preparation of a Traffic Control Plan, placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of traffic control and construction area signs, traffic control supervision, flaggers (when necessary), barricades, flashing arrow boards, message boards, detour signs, "No-Parking, Tow Away" signs, notification and door hangers, temporary traffic delineation, all lane closures necessary for any activities during the life of the project, all work necessary to provide for the convenience and safety of the public, and all other work to facilitate the performance of contract work as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

10-1.05 STORMWATER POLLUTION PREVENTION PLAN

General

The contractor will be required to implement a Stormwater Pollution Prevention Plan (SWPPP) and shall use Best Management Practices (BMP's). Stormwater Pollution Prevention Plan shall conform to the provisions in Section 13, "Water Pollution Control," Section 13-6.03C, "Temporary Drainage Inlet Protection," and Section 13-7, "Temporary Tracking Control," of the Standard Specification, project plans, and these Special Provisions. All operations shall comply with the provisions of the Clean Water Act and Regional Water Quality Control Board with regard to protection of the storm water system from any pollutants. The Contractor is required to secure all

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necessary permits.

The Contractor shall implement BMP's for the SWPPP at the start of construction. The Contractor shall know and fully comply with applicable provisions of the SWPPP and all modifications thereto, the Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from both the project site and areas of disturbance outside the project limits during construction. Attention is directed to Sections 7-1.02, "Laws," and 7-1.05, "Indemnification," of the Standard Specifications.

The Permits shall apply to storm water and certain permitted non-storm water discharges from areas outside the project site which are directly related to construction activities for this contract. Including, but not limited to, staging areas, storage yards, and access roads. The Contractor shall comply with the SWPPP for those areas and shall implement, inspect and maintain the BMP's required as part of the water pollution control practices. The Engineer shall be allowed full access to these areas during construction to assure Contractor's proper implementation of water pollution control practices.

The Contractor shall be responsible for penalties assessed or levied on the Contractor or the City as a result of the Contractor's failure to comply with the provisions in this section "Stormwater Pollution Prevention Plan" including, but not limited to, compliance with the applicable provisions of the Federal, State and local regulations and requirements as set forth therein.

Penalties as used in this section, "Water Pollution Control" shall include fines, penalties and damages, whether proposed, assessed, or levied against the City or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred in settlement for alleged violations of the Permits, the Manuals, or applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, in mitigation, to remediate, or correct violations.

Notwithstanding any other remedies authorized by law, the City may retain money due the Contractor under the contract, in an amount determined by the City, up to and including the entire amount of Penalties proposed, assessed, or levied as a result of the Contractor's violation of the Permits, the Manuals, or Federal or State law, regulations or requirements. Funds may be retained by the City until final disposition has been made as to the Penalties. The Contractor shall remain liable for the full amount of Penalties until such time as they are finally resolved with the entity seeking the Penalties.

Retention of funds for failure to conform to the provisions in this section, "Stormwater Pollution Prevention Plan," shall be in addition to the other retention amounts required by the contract. The amounts retained for the Contractor's failure to conform to provisions in this section will be released for payment on the next monthly estimate for partial payment following the date when the SWPPP has been implemented and maintained, and when water pollution has been adequately controlled, as determined by the Engineer.

No adjustment in compensation will be made for ordered changes to correct SWPPP work resulting from the Contractor's own operations or from the Contractor's negligence.

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If requested by the Contractor and approved by the Engineer, changes to the SWPPP, including addition of new water pollution control practices, will be allowed.

BMP Implementation

Unless otherwise specified, the Contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, removing, and disposing of the water pollution control practices specified in the SWPPP and in the amendments. Unless otherwise directed by the Engineer, the Contractor's responsibility for SWPPP implementation shall continue throughout temporary suspensions of work ordered in conformance with the provisions in Section 13-2.03, "Construction," of the Standard Specifications.

Requirements for installation, construction, inspection, maintenance, removal, and disposal of water pollution control practices shall conform to the requirements in the SWPPP and these Special Provisions.

If the Contractor or the Engineer identifies a deficiency in the implementation of the SWPPP or amendments, the deficiency shall be corrected immediately unless requested by the Contractor and approved by the Engineer in writing, but shall be corrected prior to the onset of precipitation. If the Contractor fails to correct the identified deficiency by the date agreed or prior to the onset of precipitation, the project shall be in nonconformance with this section, "Water Pollution Control."

If the Contractor fails to conform to the provisions of this section, "Stormwater Pollution Prevention Plan", the Engineer may order the suspension of construction operations until the project complies with the requirements of this section.

Measurement and Payment

The contract lump sum price paid for "Stormwater Pollution Prevention Plan" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in Water Pollution Control complete in place, including but not limited to implementing, maintaining, and removing the SWPPP as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.06 MISCELLANEOUS CONCRETE

General

Existing and new concrete facilities including curbs, curb and gutters, sidewalks, and commercial and private driveways shall be removed and replaced or constructed at the locations indicated on the plans or as directed by the Engineer.

Sidewalk, Median Curbs, Curbs & Gutters, and Curb ramps shall comply with Caltrans 2018 Standard Specifications and City of Lathrop Standard Plans.

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Materials

General

All section references are to the 2018 Caltrans Standard Specifications.

Portland Cement Concrete: PCC for concrete pavement must comply with section 90-1. Minor Concrete for curbs, curb and gutter, sidewalks, and commercial and private driveways must comply with Section 90-2 Minor Concrete of the Standard Specifications.

Concrete Mix Design

The Contractor shall furnish a concrete mix design to the Engineer at least ten working days prior to the start of the work, based on the following guidelines.

General Concrete Facilities including curb, gutter, sidewalk, residential and commercial driveways, etc. shall meet the following requirements:

Compressive Strength:	3000 psi @ 28 days
Maximum Slump:	5 inches
Maximum Aggregate Size:	3/4"
Polypropylene Fibers	1-1/2 lbs/cy
Pigment: Lamp Black	1 lbs/cy

The Contractor shall be responsible for all costs associated with the required mix design.

Quality Control / Acceptance Testing

Field testing shall include testing for concrete slump as per ASTM C-143 and compressive strength (C39). Such testing shall be at a frequency determined by the Engineer and shall be performed by the Owner's laboratory at the Owner's expense. The Contractor shall furnish the concrete necessary for casting test cylinders.

Detectable Warning Surface

Detectable warning surface shall be in the form of tiles manufactures from a fiberglass reinforced ultra violet stabilized polymer composite. The tiles shall be cast-in-place and shall be replaceable with removable nylon anchors attached with tamper proof stainless steel fasteners. Installation of surface applied detectable warning surface shall not be allowed.

Detectable warning surface tiles shall conform to the requirement established by the Department of General Services, Division of State Architect and incorporate an in-line pattern of truncated domes measuring nominal 0.2" in height, 0.9" base diameter, and 0.45" top diameter, and spaced 2.35" center-to-center as measured side by side. The field area shall consist of a high density, pyramid micro textured of raised points 0.05" high. Anchors shall have a minimum spacing of 12-inches. Detectable warning surface shall be by Armor-Tile or approved equal.

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Detectable warning surface tiles color shall be homogeneous throughout the tile. Color shall be:

- Yellow (Federal Standard 595B, Color No. 33538)

Detectable warning surface tiles shall be configured such that the required area is covered by no more than two tiles to conform to the dimensions as shown on the plans, and as directed by the Engineer. If multiple detectable warning surface tiles are used, joints shall be centered in the curb ramp or as approved by the Engineer. On curved ramps requiring more than one tile, the tiles shall be cut neatly such that the front edge of the tiles would line up with the score line and the back edge would have the appearance of a smooth curve as shown on the plans. No offsets, uneven or jagged edges of tiles will be allowed.

Detectable warning surface tiles shall be cut into size and configuration indicated on the plans using a 60 tooth carbide blade on a table saw or equivalent cutting device. Minimize any cantilever effect (to the maximum extent practicable) when cutting between successive embedment ribs as concrete will tend to flow up and over the CIP Tiles. The top of the body of the tiles shall be fully seated and flush with the adjacent concrete substrate. For specific instructions for cutting and setting refer to manufacturer's written instructions.

Detectable warning surface tiles shall conform to the following ASTM specifications:

- ASTM D 695 Compressive Strength Not less than 25,000 psi
- ASTM D 790 Flexural Strength Not less than 30,000
- ASTM D 570 Water Absorption 0.05%
- ASTM C 1028 Slip Resistance 0.8 wet/dry
- ASTM E 84 Flame Spread Index <25
- ASTM B 117 Salt Spray No Change (300 hours)
- ASTM 1308 Chemical Stain No Effect
- ASTM C 501 Abrasion Resistance $L_w > 500$
- ASTM G 155 Accelerated Weathering $\Delta E < 5$ (2,000 hours)
- ASTM D 638 Tensile Strength 12,500 psi
- AASHTO-H20 Load Bearing at 10,410 lbs. No Cracking, Delamination or Deformation
- ASTM C 1026 Freeze/Thaw/Heat No Chipping, Cracking or Peeling
- ASTM D 1037 Accelerated Aging [Freeze/Thaw] No Change in Color, Gloss or Delamination
- ASTM D 696-03 Linear Thermal Expansion 9.45×10^{-7} per degree Fahrenheit

Detectable warning surface tiles shall be suitably packed or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy plastic wrappings to protect tile from concrete residue during installation and tile shall be identified by part number. Protective plastic wrapping shall be removed within 24-hours after tiles are installed.

Detectable warning surface installation shall comply with the manufacture's recommendations.

Detectable warning surface tiles shall be warranted in writing for a period of five (5) years from date of final completion. The guarantee shall include defective work, breakage, deformation,

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fading and loosening of tiles.

Construction

General

All work shall conform to the provisions of Section 90 of the Standard Specifications and Section 6 of City of Lathrop Construction Standards.

The existing concrete shall be sawcut full depth prior to removal. Any concrete broken due to the Contractor's failure to comply with these requirements shall be removed and replaced at the Contractor's expense.

The line and grade of the replaced facilities shall conform to the existing facilities. In most instances, this will consist of a straight line between existing facilities. However, it may be necessary to construct grade breaks so that replaced facilities conform to the existing pavement surfaces.

The Contractor shall water test all repaired curbs and gutters, cross gutters, and other repaired drainage facilities in the presence of the City's Inspector.

Commercial driveway and alley approaches, including the adjacent curb and gutter section, shall be removed and replaced within twenty-four hours. Curing time shall be seventy-two hours.

No horizontal or vertical control will be provided for the forming and placing of new concrete facilities, unless shown on the plans. It is the responsibility of the Contractor to ensure that new concrete facilities are constructed in accordance with the City of Lathrops's Standard Plans, and as specified in the Standard Specification.

Protection of Existing Facilities

The contractor shall protect existing facilities from damage, and discoloration from concrete splash. Adjacent concrete facilities shall be covered during concrete placement to prevent concrete splash and excess concrete from staining the adjacent concrete. After initial placement, strikeoff and finishing, the protection shall be removed and the adjacent concrete cleaned.

Vertical existing facilities such as light poles, walls, etc. shall be protected with plastic extending a minimum of three feet above the concrete surface. After initial placement, strikeoff and finishing, the protection shall be removed and the vertical surfaces cleaned.

Subgrade

After the subgrade is prepared, moisture conditioned, and compacted to 90% relative compaction at zero to three percent over optimum, the Contractor shall continuously maintain the sub-grade in a uniform condition at the moisture content obtained during sub-grade compaction until the concrete is placed.

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Forming

Wooden forming shall be of two-inch nominal thickness staked at two-foot intervals. The maximum gap at the bottom of the forms shall be 1-3/4 inches.

Tolerances

The maximum variation from design elevation shall not exceed +/- 0.02 feet. In some instances, particularly in critical drainage areas, tolerances may be reduced to zero. Concrete facilities shall be installed to maintain or provide positive drainage. Questions regarding applicable tolerances shall be directed to the Engineer forty-eight hours in advance of the work.

When shown on the drawings, the concrete shall be set at the design elevations. When existing facilities are to be removed and replaced, they shall conform to the existing elevations and grades. Generally, this will be at a straight line between the start and end points of the removal. However, it may be necessary to construct grade breaks so that replaced facilities conform to the existing pavement surfaces and so that replaced facilities meet the slopes requirements in accordance with the City of Lathrop's Standard Plans, and as specified in the Standard Specification.

Placing and Finishing

The concrete shall be deposited on a moist grade in such a manner as to require as little re-handling as possible. Workmen shall not be allowed to walk in the freshly mixed concrete with boots or shoes coated with earth or foreign substances.

Strikeoff, Consolidation, and Finishing

In general, adding water to the surface of the concrete to assist in finishing operations shall not be permitted.

Before final finishing is completed and before the concrete has taken its initial set, the edges shall be carefully finished with the radius shown on the plans or a radius to match the existing construction.

Concrete shall be thoroughly consolidated against and along the faces of all forms and adjacent concrete. After the forms are removed, excess concrete below the form surface shall be removed to be flush with the form face.

All new concrete shall match existing facilities in texture, color, and appearance.

Concrete Protection

The Contractor shall always have materials available to protect the surface of the fresh concrete against rain. These materials shall consist of burlap, curing paper, or plastic sheeting. If plastic sheeting is used, it shall not be allowed to contact finished concrete surfaces.

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The Contractor shall also protect the concrete against traffic and vandalism. If the concrete is damaged or vandalized, the Contractor shall make the necessary repairs at its own expense. The repair procedure for damaged or vandalized concrete shall be approved in advance by the Engineer.

Curing

Concrete shall be cured by protecting it against loss of moisture, rapid temperature change, and mechanical injury for at least three days after placement. White or clear liquid membrane compound shall be used. After finishing operations have been completed, the entire surface of the newly placed concrete shall be covered by the curing medium. The edges of the concrete exposed by the removal of forms shall be protected immediately to provide these surfaces with continuous curing treatment.

The concrete shall be allowed to cure for seventy-two hours prior to placing adjacent hot mix asphalt.

Joints

Control joints shall be placed at a maximum spacing of ten feet.

Control joints in all PCC facilities, except sidewalks, shall be formed by tooling a deep joint or by using expansion joint material. If expansion joint material is used, a minimum of two 1/2 inch by eighteen-inch dowels shall be used with additional dowels placed every twenty-four inches.

Control joints in sidewalks may be made using a tooled joint which shall extend a minimum of 1/4 of the depth of the concrete and shall not be less than 1-1/2 inches in depth.

Expansion joints shall be required at a maximum of forty-foot intervals on curbs, curbs and gutters, cross gutters, swales, and sidewalks. Expansion joints shall also be required on all corners of curbs, curbs and gutters, sidewalks, and other locations with discontinuities or reentrant corners which may cause cracking.

Cleanup and Backfill

After the concrete is placed, cured, and the forms have been removed, the Contractor shall clean the site of all concrete and forming debris.

For pavements to be overlaid or resurfaced, the aggregate base and hot mix asphalt may be replaced with cement sand slurry in conformance to Section 19-3.02D, "Slurry Cement Backfill", of the Standard Specifications, or CLSM.

After curing has been completed and the forms have been removed from the new curb and gutter or sidewalk, the void between the new concrete and the existing parkway shall be filled with clean native material and the entire parkway left in a clean and orderly condition.

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For concrete removed but not replaced, the resulting void after excavation shall be backfilled with clean native material.

All HMA removed to facilitate in concrete form work placement for all curb and gutter construction shall be replaced with full depth HMA to match the existing pavement section or 4" minimum. The width of HMA conforms shall be 24" minimum.

Curb Ramps

Curb ramps shall be constructed in general conformance with City of Lathrop Standard Details. Curb ramp construction will typically include removal and replacement of sidewalk, curb and gutter adjacent to new ramp, and installation of detectable warning surface (truncated domes).

The contractor's duties as part of curb ramp construction shall include coordinating with utility company representatives for those locations where existing utility boxes fall within the limits of new ramp and/or sidewalk construction. Coordination efforts should be made early on in the Contract for those items which may require a long lead-in time or may involve significant interaction with utility company personnel.

Limits of removal and replacement work shall be determined by the Engineer at each curb ramp location. It is the responsibility of the Contractor to ensure that slopes and dimensions are constructed in accordance with the City of Lathrop Standard Plans, and as specified in the Standard Specification.

Measurement and Payment

The contract unit price paid for **“Remove & Replace/Install PCC Sidewalk”, “Remove & Replace/Install PCC Curb & Gutter”, “Case "A" Curb Ramp”, “Case "B" Curb Ramp”** and **“Case “C” Curb Ramp”, “Construct Median Island Type "C" Passageway”, “Construct PCC Median Curb” and “Construct Stamped Concrete (Median Pavement)”** as enumerated in the bid schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in miscellaneous concrete, complete in place including sawcutting, demolition, removal and disposal of curb, gutter, sidewalk and asphalt concrete; excavation, subgrade preparation, backfill, aggregate base, compaction, dowelling, concrete, score marks, weakened plane joints, expansion joints, furnishing and applying curing compound; resetting utility boxes, frames and covers; installation of cast-in-place detectable warning surface, HMA conforms, site restoration, irrigation repairs, and clean-up, as shown on the plans, as specified in the Standard Specifications and these special provision, and as directed by the Engineer.

10-1.07 HOT MIX ASPHALT (HMA) & RUBBERIZED HOT MIX ASPHALT (RHMA)

General

This work includes producing and placing hot mix asphalt (HMA) & rubberized hot mix asphalt

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(RHMA).

Comply with Section 39, “Hot Mix Asphalt,” of the 2018 Standard Specifications except as modified in these special provisions.

Submittals.

Submit JMF information on Form CEM-3511 and Form CEM-3512. Submit Form CEM-3513 or CEM-3514 for mixes that have been verified within last 12 months. Provide most recent CEM-3513 if mix has not been verified within the last 12 months. For unverified mixes or out of date mix tests, final acceptance will be based on production startup tests and Contractor will be paving at their own risk.

Submit Quality Control Plan that conforms to the current Caltrans Quality Control Plan Review Checklist for Hot Mix Asphalt. Allow 14 calendar days for review.

Materials

Asphalt Binder:

The grade of asphalt binder for all HMA Type A shall be PG 64-10.

The grade of asphalt binder for all RHMA Type G shall be PG 64-16.

Warm mix technology shall not be used on RHMA and shall only be used on HMA with prior approval from the Engineer.

Aggregate: Generally, the hot mix asphalt to be used will be as follows unless modified by the Engineer:

Base & Intermediate Courses:	3/4 inch Type A, hot mix asphalt
Surface Course:	1/2 inch Type A, hot mix asphalt or 1/2 inch Type G, rubberized hot mix asphalt
Digouts – Top Course	1/2 inch Type A, hot mix asphalt
Digouts – Deep Lift	3/4 inch Type A, hot mix asphalt

Mix Design

The hot mix asphalt mix design shall follow the 2018 Caltrans Standard Specifications except as modified below, the number of gyrations to be used for the mix design shall be as designated on the plans or in these specifications. If not specified, the mix design shall be selected according to the following table:

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Mix Design	Traffic Index
HMA-SP50 (50 Gyration)	<6
HMA-SP65 (65 Gyration)	6-10
HMA-SP85 (85 Gyration)	>10
RHMA	Only when specified

HMA-SP85 -- 85 Gyration Mix Design

Type A HMA-SP85 Mix Design Requirements

Quality characteristic	Test method	Requirement
Air voids content (%)	AASHTO T 269 ^a	N _{initial} > 8.0 N _{design} = 4.0 N _{max} > 2.0
Gyration compaction (no. of gyrations)	AASHTO T 312	N _{initial} = 8 N _{design} = 85 N _{max} = 130
Voids in mineral aggregate (min, %) ^b Gradation: No. 4 3/8-inch 1/2-inch 3/4-inch	MS-2 Asphalt Mixture Volumetrics	16.5–19.5 15.5–18.5 14.5–17.5 13.5–16.5
Dust proportion	MS-2 Asphalt Mixture Volumetrics	0.6–1.3
Hamburg wheel track (min number of passes at 0.5-inch rut depth) Specified Binder grade: PG 58 PG 64 PG 70 PG 76 or higher	AASHTO T 324 (Modified) ^c	10,000 15,000 20,000 25,000
Moisture susceptibility, tensile strength ratio (min)	AASHTO T 283 ^{c, d}	70

^aCalculate the air voids content of each specimen using AASHTO T 275, Method A, to determine bulk specific gravity. Use AASHTO T 209, Method A, to determine theoretical maximum specific gravity. Use a digital manometer and pycnometer when performing AASHTO T 209.

^bMeasure bulk specific gravity using AASHTO T 275, Method A.

^cTest plant-produced Type A HMA.

^dFreeze thaw required.

In-place acceptance requirement shall conform with Section 39-2.02.

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TS-1.02C(2) RHMA

RHMA-G Mix Design Requirements

Quality characteristic	Test method	Requirement
Air voids content (%)	AASHTO T 269 ^a	N _{design} = 4.0
Gyrations compaction (no. of gyrations)	AASHTO T 312	N _{design} = 125 ^b
Gyrations compaction (compactor ram pressure)	AASHTO T 312	825kPa
Voids in mineral aggregate (min, %)	MS-2 Asphalt Mixture Volumetrics ^c	18.0–23.0
Hamburg wheel track (min, number of passes at 0.5-inch rut depth) Binder grade: PG 58 PG 64 PG 70	AASHTO T 324 (Modified) ^d	15,000 20,000 25,000
Moisture susceptibility, tensile strength ratio (min)	AASHTO T 283 ^{d, e}	70

^aCalculate the air voids content of each specimen using AASHTO T 275, Method A, to determine bulk specific gravity and AASHTO T 209, Method A, to determine theoretical maximum specific gravity. Under AASHTO T 209, use a digital manometer and pycnometer when performing AASHTO T 209.

^bSpecimens shall be held at a constant height for a minimum of 30 minutes and a maximum of 90 minutes, this load time shall be indicated on the mix design.

^cMeasure bulk specific gravity using AASHTO T 275, Method A.

^dTest plant produced RHMA.

^eFreeze thaw required.

Warm mix technology shall not be used with RHMA.

RAP shall not be used with RHMA.

In-place acceptance requirement shall conform with Section 39-2.03.

Construction

Surface Preparation. The work shall consist of preparing the existing street surfaces prior to the commencement of paving. Such work shall include removing raised pavement markers, removing thermoplastic traffic markings and legends, controlling nuisance water, sweeping, watering, and removing loose and broken hot mix asphalt pavement and foreign material as specified in the Standard Specifications and these Technical Provisions, and as directed by the Engineer.

Sampling. The Engineer may sample the hot mix asphalt from truck beds at the plant, from the hopper of the spreading machine, or from the completed mat at the discretion of the Engineer. The Contractor shall facilitate the sampling process

Quality Control.

The Contractor is not required to submit quality control test results. However, if quality control test results are not submitted to the Engineer within 3 days of paving, the Contractor waives the

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right to dispute the Engineer's results.

Engineer's Acceptance.

Sublots to determine compaction testing shall be based on the following:

1. Each 750 tons, or part thereof, placed on an individual street in a paving day. If over 750 tons are placed in a single paving day on an individual street, up to 150 tons over 750 tons can be moved in to the previous 750 ton subplot.

The in-place density shall be between 91.0 percent and 97.0 percent of maximum theoretical unit weight using a nuclear gauge. Gauge compaction testing shall be performed in accordance with CTM 375. Final compaction is based on the average nuclear gauge results for the subplot. The nuclear gauge will be core correlated the first day of paving.

If nuclear gauge compaction testing results are failing, the contractor can request coring to verify the results. Three cores will be sampled for each subplot and the average of the three cores for each subplot will determine density. The core locations will be determined using random sampling charts in CTM 375. The engineer will mark the core locations.

Cores may be taken up to 5 calendar days after placement and may be 4 or 6 inches in diameter. The engineer will provide results within 3 working days of receiving the cores.

Passing cores shall be paid for by the owner. Failing cores will be paid for by the contractor. If the core density produces both passing and failing cores, the cost will be prorated between the contractor and the owner.

The Contractor shall have hand-compaction equipment immediately available for compacting all areas inaccessible to rollers. Hand-compaction shall be performed concurrently with breakdown rolling. If for any reason hand-compaction falls behind breakdown rolling, further placement of hot mix asphalt shall be suspended until hand-compaction is caught up. Hand-compaction includes vibraplates and hand tampers. Hand torches shall be available for rework of areas which have cooled.

After compaction, the surface texture of all hand work areas shall match the surface texture of the machine placed mat. Any coarse or segregated areas shall be corrected immediately upon discovery. Failure to immediately address these areas shall cause suspension of hot mix asphalt placement until the areas are satisfactorily addressed, unless otherwise allowed by the Engineer.

Temporary Transitions: The Contractor shall construct temporary pavement transitions at all transverse paving joints greater than 1 inch prior to allowing traffic onto the paved surface. Temporary pavement transitions shall have a maximum slope of 20:1 or as approved by the engineer and be constructed on Kraft paper or other suitable bond breaker such that upon removal of the temporary pavement transition, a clean notch remains. The temporary transitions may be constructed of either cold mix or hot mix.

The Contractor shall continuously maintain the temporary pavement until final paving. Each temporary transition shall be inspected by the Contractor and repaired as necessary to comply with

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these provisions at the end of each day including weekends and holidays.

Failure to comply with these provisions will result in a liquidated damage of \$250 per day per transition and/or the cost of City crews making the repairs if necessary to correct for public safety.

Measurement and Payment

The contract price paid per ton for “1/2” HMA (Type A) PG 64-10”, “3/4” HMA (Type A) PG 64-10” and “1/2” RHMA (Type G) PG 64-16” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Hot Mix Asphalt (HMA) & Rubberized Hot Mix Asphalt (RHMA) , complete in place, including placing, compacting and protecting HMA; the preparation, submission and verification testing costs for the JMF; providing the Contractor’s Quality Control Plan; and the costs of coring to verify core densities if required, as shown on the plans, as specified in the Standard Specification and these special provisions, and as directed by the Engineer.

10-1.08 REMOVE & REPLACE HMA

General

The work shall consist of removing and replacing existing Hot Mix Asphalt, and base if necessary, to the specified depth by cold planing or other methods.

Materials

The Hot Mix Asphalt for remove and replace areas must conform to Section 39 of the Standard Specifications, and these Special Provisions.

Construction

The pavement areas designated to be replaced shall be removed to a uniform depth as specified, and shall be removed by cold planing. Any broken or damaged pavement edges shall be re-cut prior to paving. All removed material shall be cleared from the site.

The excavated areas shall be graded as shown on the plans as necessary to provide a uniform pavement thickness. The base rock or native soil shall be compacted to 95% relative compaction. Compaction testing shall be performed in accordance with either CTM 216 and 231 or ASTM D-1557, D-2216, D-2922, and D-3017. All segregated or loose material shall be removed.

On areas where the underlying material appears to be wet or soft or where it deflects under wheel loads, the Contractor shall employ excavation and work techniques which do not worsen the sub-grade condition.

Prior to placing aggregate base or Hot Mix Asphalt, each pavement replacement area shall be proof-rolled with a loaded construction vehicle, preferably a ten cubic yard dump truck or equivalent. The compacted surface shall not visibly yield or deflect. Soft, yielding, unstable, or

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unsuitable areas shall be removed and replaced with base rock or Hot Mix Asphalt. If the areas were caused or significantly worsened by the Contractor's operations, these areas shall be replaced at the Contractor's expense.

In the event that the underlying material is soft, yielding, unstable, or unsuitable, it shall be excavated to a depth of 0.5 feet below the depth required above and disposed of in accordance with these Special Provisions. The limits of removal shall be designated by the Engineer. The resulting space shall be filled with a single lift of Hot Mix Asphalt.

Unsuitable material is defined as material the Engineer determines to be:

1. Of such unstable nature as to be incapable of being compacted to specified density using ordinary methods at optimum moisture content, or
2. Too wet to be properly compacted and circumstances prevent in-place drying prior to incorporation into the work, or
3. Otherwise unsuitable for the planned use.

After compaction of the sub-grade, all vertical edges of existing pavement or concrete shall receive a tack coat immediately prior to paving. Additional tack may be necessary between Hot Mix Asphalt courses. No prime coat shall be required. A tack coat between layers of Hot Mix Asphalt shall be required if not paved on the same day or if the surface has been contaminated or soiled. Any contamination or soiling shall be thoroughly cleaned and a tack coat placed between layers immediately prior to paving.

Care shall be taken to assure compaction of the inside corners of the first lift. Ramping shall not be allowed on the course placed immediately prior to the surface course.

A minimum of two lifts shall be used for each replacement area with a depth greater than three inches. The surface course shall be 1-1/2 inches minimum thickness. No single base or intermediate course may exceed three inches.

The repaired areas shall conform to the level of the surrounding pavement so that no elevation variation is evident. The surface shall have a maximum variation from high to low of 0.01 feet maximum when measured with a twelve-foot level. Variation at the edges shall not exceed 0.01 feet maximum. When matching existing pavement, the finished surface shall not inhibit drainage. The upslope edge of the replacement shall be 0.00 feet high to 0.01 feet low. On the downslope edge of the replacement, the finished surface shall be 0.01 feet high to 0.00 feet low. Any resulting variations shall be corrected to the satisfaction of the Engineer.

Materials removed using cold plane other methods shall become the property of the Contractor, and shall be disposed of in accordance with local rules and regulations.

Measurement and Payment

The contract price paid square foot for "**Remove & Replace 8" HMA**" and "**6" Deep Lift Stabilization (Allowance)**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Remove & Replace HMA, complete in place, including cold planing; labor, removal, and offhaul of additional material due to straight grading; excavation, removal and disposal of existing pavement concrete,

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base and native material; proof rolling; compaction of base materials; tack coat; furnishing, placing and compaction HMA; clean-up as shown on the plans, as specified in the Standard Specifications and in these special provisions, and as directed by the Engineer.

Quantities for “**Remove and Replace 8” HMA**” and “**6” Deep Lift Stabilization (Allowance)**” shall be approved by the Engineer prior to commencing removal operations. The City does not pay for remove and replace HMA that have not been approved by the Engineer in advance of any work.

Sections 9-1.06B “Increases of More Than 25 Percent” and 9-1.06C “Decreases of More Than 25 Percent” do not apply to the bid items related to remove and replace HMA.

10-1.09 ASPHALT TACK COAT

General

The work to be performed shall consist of furnishing and applying tack coat in conjunction with hot mix asphalt overlays and other hot mix asphalt paving work.

Materials

The tack coat shall be emulsified asphalt of grades RS1, RS2, SS1, or SS1h, conforming to Section 94, “Asphaltic Emulsions”, of the Standard Specifications.

Application: The tack coat shall not be applied until the preparation of the existing surface has been completed, and then only so far in advance of placing the hot mix asphalt as permitted by the Engineer. Preparation of the surface shall be performed as described in these Special Provisions. No tack coat shall be left exposed overnight. Immediately in advance of placing the hot mix asphalt, additional tack coat shall be applied as directed by the Engineer to areas where previously applied tack coat has been destroyed or otherwise rendered ineffective, and no additional compensation will be allowed for such work.

Existing concrete facility faces shall be protected against discoloration from the asphalt. Residue of the material shall be removed from curb faces by sandblasting to the extent required by the Engineer.

Tack coat shall be applied as specified in Subsection 39-1.09C of the Standard Specifications and these Special Provisions. The Engineer will determine if the pavement is sufficiently dry for the application of the tack coat. Further, tack coat shall not be applied when the temperature of the surface to be tacked is below 40 degrees Fahrenheit in the shade.

Tack coat shall be applied to all vertical edges to be paved against including curb faces and gutter lips. The Contractor shall protect concrete surfaces that are not to be paved against from tack coat spray or splash. Any tack coat more than one inch above the paving surface shall be removed by power washing or other means.

Measurement and Payment

Full compensation for "Asphalt Tack Coat" shall be considered as included in the contract prices paid for the various bid items of work involved and no additional compensation will be allowed therefor.

10-1.10 COLD PLANING**General**

Cold planing shall include all work necessary to remove and dispose of existing asphalt and/or concrete pavement to a predetermined depth.

Cold planing may be used for "Remove & Dispose 9" of Pulverized Material", "Remove & Replace 8" HMA", and "6" Deep Lift Stabilization".

Equipment

The machine used for planing shall have performed satisfactorily on similar work and shall meet the following requirements:

The planing machine shall be specifically designed and built for the planing of bituminous pavements without the addition of heat. It shall have the ability to plane Portland cement concrete patches in the bituminous pavement, or Portland cement concrete pavements. The cutting drum shall be a minimum of sixty inches wide and shall be equipped with carbide tipped cutting teeth placed in a variable-lacing pattern to produce the desired finish.

The machine shall be capable of being operated at speeds of zero to forty feet per minute, it shall be self-propelled, and have the capability of spraying water at the cutting drum to minimize dust. The machine shall be operated in such a way so that no fumes or smoke will be produced. The machine shall be capable of removing the paving material next to curbs or gutters and be designed such that the operator thereof can at all times observe the planing operation without leaving the controls. The machine shall be adjustable for slope and depth and shall be equipped with sonic sensing devices for controlling depth.

Construction

Cold planing may be used for removal of existing pavement & pulverized material.

Pavement Removal: Prior to cold planing, on streets to have a uniform depth of the existing surface removed, all utility covers shall be lowered such that the cutting teeth of the planing machine passes over the adjusted lid without causing damage to the lid or frame. Contractor will be responsible for maintaining any temporary asphalt fill material over these facilities until the final paving surface is installed. The Contractor shall clearly mark or reference lowered sanitary sewer and water valves in case emergency access is required by the agency responsible for operation of the sewer and water system.

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All pavement areas called out for removal and replacement shall be cold planed to the full width of the roadway. Pavement against curb faces shall be removed to the full depth designated for that particular section of roadway. If pavement against curb faces cannot be removed by the planing machine, the Contractor shall use other means to remove this material.

Tolerances: The pavement surface after cold planing shall be uniformly rough. The grade shall not deviate from a suitable straight edge more than 1/4 inch at any point. When multiple passes are required to create the cold planed surface, the maximum variation from a string-line or straight edge shall be 1/4 inch high to 1/2 inch low. High points out of tolerance shall be re-planed to fall within tolerance. Low areas shall be filled with hot mix asphalt as specified herein to meet tolerances. The cost of such correction of low areas shall be entirely the Contractor's.

Removal and Disposal of Material: During the cold planing operation, the Contractor shall sweep the roadway with mechanical equipment.

Air Pollution Control: The Contractor shall take all necessary measures to avoid the dispersion of dust. Attention is directed to Subsections 14-9.02A and 14-9.03A of the Standard Specifications.

Correction of Tear Out Areas: If tear-out to the underlying layers occurs during the cold planing operation, the Contractor shall adjust his operation to minimize tear-out. Corrections shall include changing operation speed and replacing cutting teeth. Changes in cold planing depth shall only be made with approval of the Engineer.

Areas torn out by lack of diligence on the Contractor's part shall be corrected by placement of hot mix asphalt conforming to the requirements of these special conditions. Areas torn out due to pre-existing adhesion problems in the existing hot mix asphalt shall be corrected at the City's expense as directed by the Engineer.

Measurement and Payment

The contract price paid per square foot for **"Remove & Dispose 9" of Pulverized Material"** & **"Cold Plane 2-1/2"** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Cold Planing, complete in place, disposing of all planed materials; furnishing, constructing, maintaining, removing, and disposing of HMA for temporary HMA tapers, as shown on the plans, as specified in the Standard Specifications and in these special provisions, and as directed by the Engineer.

Full compensation for Cold Planing shall be considered as included in the contract price paid for **"Remove & Replace 8" HMA"** and **"6" Deep Lift Stabilization"** and no additional compensation will be allowed therefore.

10-1.11 PULVERIZATION AND GRADING

General

The work shall consist of pulverizing the existing asphalt concrete pavement and base to form a

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recycled aggregate base consisting of a thoroughly blended mixture of pulverized asphalt concrete and existing aggregate base. In some instances of full depth asphalt concrete on native material, some native soil may be incorporated into the pulverized base material as allowed by the Engineer.

The pulverized aggregate base material shall then become the base material for the new asphalt concrete pavement. The pulverized base shall be graded as shown on the typical sections.

Materials

The recycled aggregate base material shall be uniformly blended and shall conform to the following:

<u>Sieve Sizes</u>	<u>Percentage Passing</u>
2 inches	100
1-1/2 inches	90-100
3/4 inch	90-100
No. 4	25-60
No. 200	2-12

<u>Quality Requirements</u>	
<u>Tests</u>	<u>Requirements</u>
R-Value	75 minimum
Sand Equivalent	25 minimum
Durability Index	35 minimum

Pulverized asphalt concrete pieces larger than 2 inches, or which are loose and segregated on the surface of the aggregate base, shall be removed by hand.

Construction

The recycled base material shall be graded to approximately the same plane as the existing pavement. The grading plane may be adjusted to improve the existing drainage.

To provide the transition to the existing gutter or other grade constraints, grading and removal of the pulverized base material will be necessary. In some instances, the material may be regraded onto the existing travel lanes. In other instances, the material may need to be removed from the project. Refer to the applicable typical sections.

The graded pulverized base material shall be compacted to 95 percent relative compaction based on CTM 216.

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It shall be the responsibility of the grading contractor to attain the proper moisture content during compaction. All segregated loose material shall be removed.

On areas where the underlying material appears to be wet or soft, or where it deflects under wheel loads, the Contractor shall employ excavation and grading techniques which do not worsen the subgrade condition.

Prior to placing asphalt concrete, the area shall be proof-rolled with a loaded construction vehicle, preferably a ten cubic yard dump truck or equivalent. The compacted surface shall not visibly yield or deflect. Soft, yielding, unstable, or unsuitable areas shall be removed and replaced with hot mix asphalt. If the areas were caused or significantly worsened by the Contractor's operations, these areas shall be replaced at the Contractor's expense.

In the event that the underlying material is soft, yielding, unstable, or unsuitable, it shall be excavated to the full depth of the pulverized section and disposed of in accordance with these Special Provisions. The limits of removal shall be designated by the Engineer. The resulting space shall be filled with suitable pulverized material.

Unsuitable material is defined as material the Engineer determines to be:

1. Of such unstable nature as to be incapable of being compacted to specified density using ordinary methods at optimum moisture content, or
2. Too wet to be properly compacted and circumstances prevent in-place drying prior to incorporation into the work, or
3. Otherwise unsuitable for the planned use.

Measurement and Payment

The contract price paid per square foot for "**Pulverize 18**" and **Grade**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in pulverization and grading, complete in place, as shown on the plans, as specified in the Standard Specifications and in these special provisions, and as directed by the Engineer.

10-1.12 QUICKLIME/CEMENT SOIL TREATMENT

General

Work to be performed under this Section covers all labor, materials, tools, equipment and incidentals necessary to cement and quicklime/cement soil treatment to a depth specified. All such work shall conform to Section 24 "Stabilized Soils" of the Standard Specifications and as modified in these Special Provisions.

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Materials

Where quicklime and/or cement treatment is specified, the quicklime and/or cement content of the soil shall be determined by the Contractor and submitted to the Engineer for approval.

Submittals

Submit each FDR Quicklime/Cement mix design on a form generated specifically FDR Quicklime/Cement. Each mix design submittal must be sealed and signed by an engineer who is registered as a civil engineer in California.

You may submit multiple mix designs to optimize the cement and quicklime/cement content and adjust for varying underlying materials.

Each mix design submittal must include:

1. Area represented by the mix design by beginning and ending stations
2. Gradation of the mixture before addition of cement and quicklime/cement
3. Cement and quicklime/cement content in percent by weight of the dry mixture, if supplementary aggregate is specified
4. Moisture content of the material when mixing, relative to OMC
5. Test results and any worksheets, photographs and graphs

Mix Design

The Contractor shall sample materials on-site and develop a mix design to determine the total percentage of cement and quicklime/cement to obtain a minimum **Unconfined Compressive Strength of 300 psi**.

The mix design must include 7-day cured unconfined compressive strength tests on specimens with at least three (3) quicklime/cement contents using the proposed cement and quicklime/cement at optimum moisture content. The cement and quicklime/cement contents must be one percent above the specified content, at the specified content, and one percent below the specified content by dry weight of the composite material. Manufacture three (3) specimens for each quicklime/cement content and average the results for each. Plot the average 7-day compressive strengths on the ordinate versus the cement and quicklime/cement contents in percent on the abscissa on a graph. Indicate the cement and quicklime/cement contents from the line corresponding to the minimum and maximum 7-day compressive strengths from the specified range.

Notify the Engineer at least 2 business days before sampling.

Use materials from the specified mixing depth. If any portion of existing asphalt concrete pavement is to be removed before pulverizing, remove that portion of asphalt concrete pavement from the samples used in the mix design. If additional samples of subgrade material are needed, sampling locations can be excavated outside the edge of pavement to variable dimensions. Characterize and record sampling location features such as layer thicknesses and types, distresses, interlayers, thin or thick areas, digouts and adhesion to the base. Use the sampled material to determine the mix design represented by the sampling location, according to the proportions of the pavement structure shown.

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Before opening the mix design sampling locations to traffic, backfill sampling locations by replacing and compacting with an authorized material or minor HMA that complies with section 10-1.08 Hot Mix Asphalt (HMA). Backfill and compact to the existing grade and thickness of asphalt concrete pavement, in the Engineer’s presence.

Construction

The quicklime and/or cement soil treatment application and construction shall be performed in accordance with the Standard Specifications, except as noted.

The maximum treatment and lift thickness shall be 12-inches.

The spread rate shall be confirmed on each lift for each row of quicklime and/or cement application until uniformity is confirmed to the Soils Engineer’s satisfaction. Thereafter, the engineer shall confirm quicklime and/or cement application as needed to confirm uniformity.

Quality Control

Assign a ground supervisor whose sole purpose is to monitor the activities, advise project personnel and interface with the quality control testing personnel. The ground supervisor must not have any sampling or testing duties.

Test the quality characteristics for the following:

FDR Cement and FDR Quicklime/Cement Quality Characteristic Sampling Locations and Testing Frequencies

Quality Characteristics	Test Method	Minimum Sampling and Testing Frequency	Sampling Location
Gradation	CT 202	Test Strip and 1 per Lot	Loose Mix Behind Mixer
Moisture Content	CT 226	Test Strip and 2 per Day ^a	Loose Mix Behind Mixer ^b
Unconfined Compressive Strength	ASTM D 1633	Test Strip and 1 per Day	Loose Mix Behind Mixer ^b
Laboratory Maximum Wet Density	CT 216	Test Strip and 1 per Day or 1 per Street and 1 per Changes to the Material	Loose Mix Behind Mixer
Relative Compaction ^c	CT 231	10 Points per Test Strip and Lot ^d	Compacted Mix

^a If test fails, minimum test frequency is 1 per lot

^b Sample immediately after mixing is complete

^c Verify the moisture content reading made under CT 231 with CT 226

^d Lot size is defined as 3,000 squared yards.

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The first day of the FDR construction could be accepted as the test strip.

Measure and record the actual cut depth at both ends of the pulverizing drum at least once every 300 feet along the cut length. Take measurements in the Engineer's presence.

Compaction

Compact in 18-inch maximum lifts to 95 percent relative compaction at or above optimum moisture as determined by Cal Test 216.

The maximum compacted thickness of a single layer may be increased provided the Contractor can demonstrate to the Engineer that the equipment and method of operation will provide uniform distribution of the cement and the required compaction density throughout the layer.

Tolerances

Completed cement soil treated section after compaction and trimming shall be equal to the design thickness. The minimum thickness shall be the design thickness minus 1 inch.

Curing

If not covered by hot mix asphalt or aggregate base within 48 hours, the exposed cement stabilized soil subgrade shall be covered with the appropriate emulsion seal as described in Section 24-2.02D of the Standard Specifications (Caltrans) within 24 hours of completing quicklime and/or cement stabilization.

Protection

Contractors shall maintain the subgrade in a smooth, compacted condition until placement of aggregate or hot mix asphalt. Any damage to the treated subgrade shall be repaired by immediately replacing with similar treated material within 24 hours after damage.

After compaction, only rubber-tired vehicles or paving equipment shall be permitted on the treated surface.

Engineer's Acceptance

For the unconfined compressive strength, the following table shall apply to deductions for average unconfined compressive strength of a lot:

Average Unconfined Compressive Strength per Lot [psi]	Reduced Payment Factor
> 299 ^a	0.00
270 – 299	0.05
250 – 269	0.15
200 – 249	0.25
< 200	Remove and Replace

^a No individual unconfined compressive strength shall be below 270 psi.

Measurement and Payment

The contract price paid per square foot for “**Quicklime Soil Treatment 11**” and “**Cement Soil Treatment 11**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Quicklime and/or Cement Soil Treatment, complete in place, including sampling materials and preparing an FDR mix design, breaking-up, spreading quicklime and/or cement, mixing and remixing, compacting, trimming, curing and protecting treated soil, as well as providing quality control, as shown on the plans, as specified in the Standard Specifications and in these special provisions, and as directed by the Engineer.

“**Quicklime and/or Cement**” shall be paid for by the ton separately from “**Quicklime Soil Treatment 11**” and “**Cement Soil Treatment 11**”.

The quantity of quicklime and/or cement is subject to increased or decreased quantity and will be the difference between the specified theoretical quantity of quicklime and/or cement and the quantity of quicklime and/or cement used.

10-1.13 LOWERING & ADJUSTING EXISTING UTILITY FACILITIES TO GRADE**General**

This work shall consist of lowering and/or adjusting existing utility facilities including, but not limited to manholes, valve boxes, water valves, gas valves, monument boxes, electrical boxes, water meter boxes, and monitoring well covers to the finish grade of the resurfaced asphalt pavement or finished sidewalk grade.

The Contractor is responsible for obtaining and purchasing from the appropriate governing jurisdiction any required permits associated with lowering or adjusting to finish grade all utility frames and covers within the limits of work. This includes but is not limited to water valves, gas valves, sanitary sewer manholes, storm drain manholes and CA/TV utilities.

All such work shall conform to the applicable provisions of the California State Department of Transportation, Standard Specifications (Caltrans); City of Lathrop Standard Plans, these Special Provisions; the plans and typical sections; and as directed by the Engineer.

Construction**General**

The Contractor shall properly locate and tie all existing facilities to be raised in advance of paving operations.

Care shall be taken to keep frames and covers clean. The Contractor shall completely protect with heavy plastic or other suitable material all utility covers or other items which are visible on the surface and will be covered by his operations. This shall be completed prior to the start of

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operations and approved by the Engineer. Any materials that adhere to the frames and covers shall be removed.

Facilities damaged by the Contractor shall be replaced at the Contractor's expense. Where existing facilities (box and lid or frame and cover) are found to be in a damaged condition, and reported to the Engineer before disturbing, shall be replaced by the Contractor with materials furnished by the Owner.

The Contractor shall notify owners of private utility facilities seven (7) days prior to the start of the resurfacing work. Such owners may request the contractor to raise the private facilities. Any contractor raising facilities shall perform any work on said facilities per Caltrans Specifications and Standards.

Tolerances: The concrete around these adjusted facilities in the roadway shall be brought up to 1-1/2" below the finished pavement elevation.

The surface of the adjusted facilities shall be true to the new pavement surface to within a 1/8-inch deviation. This tolerance shall apply in a single direction only, either up or down. In addition, the adjusted facility shall not vary to the high tolerance on one side and the low tolerance on the other (i.e. the total aggregate tolerance on both sides shall be limited to the 1/8 inch variation). This variation shall apply to the adjacent patch paving around the facility such that neither the paving nor facility vary by more than the stated tolerances.

The adjusted facilities in the sidewalk shall be flush with adjacent surface.

Schedule: All facilities shall be adjusted to finish grade within 72 hours after the placement of the final surface paving on each individual street segment. If several lifts of pavement are to be placed, the facilities shall be raised if the paving operation ceases for more than 72 hours as approved by the engineer.

Survey Monuments: Where new survey monument boxes and covers are required, the Contractor shall perform the installation without disturbing the location of the monument. If the monument is disturbed the Contractor will be responsible for re-establishing it as a monument in accordance with State laws. The work for placement of the box and cover over an existing monument will include removal and replacement of the hot mix asphalt around the monument.

Measurement and Payment

The contract unit price paid for each for "**Lower Manhole Cover**", "**Lower Gas Valve Cover**", "**Lower Telecommunication Manhole Cover**", "**Lower Survey Monument Cover**", "**Lower Water Valve Cover**", "**Lower Loop Detector Handhole Cover**", "**Adjust Manhole Covers**", "**Adjust Gas Valve Cover**", "**Adjust Telecommunication Manhole Cover**", "**Adjust Survey Monument Cover**", "**Adjust Water Valve Cover**" and "**Adjust Loop Detector Handhole Cover**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in lowering and raising utility frames and covers to grade, complete in place, including coordination with the utility companies, the Engineer, and City Surveyors, replacing disturbed monuments, salvaging existing or furnishing new utility

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frames and covers, concrete, mortar, HMA (type A) and restoring adjacent pavement, as shown on the plans, as specified in the Standard Specifications and these special provision, and as directed by the Engineer.

10-1.14 AGGREGATE BASE

General

This work shall consist of furnishing, grading, and compacting aggregate base under concrete repair areas and new structures, and where called for in the plans and these Special Provisions.

Materials

Aggregate base shall conform to Subsection 26-1.02B, "Class 2 Aggregate Base", of the Standard Specifications. The grading shall be as indicated on the plans, or as directed by the Engineer.

Construction

Grading shall comply with the requirements of Section 19, "Earthwork", of the Standard Specifications. During any grading operations, the Contractor is specifically directed to Subsection 5-1.36, "Property and Facility Preservation". The Contractor shall protect any items, facilities, or improvements, as necessary, in order to avoid causing damage.

The existing subgrade material below the new aggregate base shall be ripped, scarified, moisture conditioned to optimum moisture content, and compacted to a minimum of 95 percent relative compaction.

Construction of the new aggregate base shall conform to Section 26 of the Standard Specifications. The constructed thickness of the aggregate base layer shall be not less than the design thickness minus 1/2 inch.

Measurement and Payment

Full compensation for Aggregate Base shall be considered as included in the contract prices paid for the various bid items of work involved and no additional compensation will be allowed therefore.

10-1.15 CONDUIT INSTALLATION

General

This section includes all basic conduit materials and methods to perform operations necessary to provide labor, materials, equipment, components, and necessary services to support the conduit work shown on the drawings and specified herein, including but not limited to potholing before

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trenching, excavation for conduit and structures, trench repair, warning tape, backfill and compaction, all as indicated on the Contract Drawings and specified herein.

The Contractor shall dispose of all excess excavated material at his own expense and in accordance with an approved hauling plan.

No payment will be made for unauthorized excavated and fill material exceeding the contract lines and grades.

Materials

Conduit:

1. Future Median Irrigation and Electrical Conduit - 3" Diameter Schedule 40 PVC Pipe; meet requirements of ASTM D 1785.
2. Future Traffic Signal Conduit - 4" Diameter Schedule 40 PVC Pipe; meet requirements of ASTM D 1785.

Warning Tape: 3" wide min. detectable warning tape

Marker Post: 4" x 4" x 3' pressure treated post

Pull Box: Christy® G5 Concrete Traffic Box with Cast Iron Lid

Construction

Preparation:

Layout locations for conduit and pull boxes on site and mark locations of pull boxes at roadway shoulder/behind sidewalk. Adjust manhole locations as needed to avoid existing utilities and other obstacles. Pull box locations shown on plans are schematic only.

Locate existing underground utilities crossing proposed conduit and pull box placement. Pothole utilities at all perceived conflicts with new conduit and boxes prior to any excavation or trenching.

Layout conduit runs to maintain straight and true alignment except where required to change direction to connect to pull box. All changes in direction of conduit shall be made by gradual pipe bends only (no angled joints or couplers will be allowed). Curved portions of conduit shall be laid out so as to not exceed manufacturer's recommendations for maximum deflection of PVC pipe.

Longitudinal runs of conduit shall not be located directly over or under other underground facilities. Whenever possible, the horizontal distance between parallel facilities shall be a minimum of 6 inches of separation.

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Conduit Installation:

Excavate trench to 36" minimum depth. Remove debris and loose material from trench prior to pipe placement.

During installation, all conduit ends shall be plugged to prevent entrance of foreign matter. All conduits shall be free and clear of any soil, backfill material, trash and construction debris.

Backfill per City of Lathrop Standard Plans. For 3" conduits, install marker posts on each end of conduit run, embedded 18" min. below grade. For 4" conduits, daylight conduit inside G5 pull box.

Pull Box Installation:

Top of communication manholes to match flush with adjacent finish grade. Install boxes with level lid whenever possible. Place 6" minimum 3/4" drain rock at bottom of box to facilitate drainage. Backfill around box with native spoils and compact backfilled soil as necessary to avoid shifting or future settlement of box.

Measurement and Payment

The contract price paid per lineal feet for "**3" Sch. 40 Conduit**" and "**4" Sch. 40 Conduit**" shall include all costs for layout, trenching, placement and backfill, materials, labor and equipment to perform the work as described in the standard specifications and these provisions and no additional payment shall be made

The contract price paid per each for "**Install G5 Pull Box**" shall include the cost for excavation, placement and backfill as described in these provisions. Bid prices shall include all costs associated with materials, labor and equipment to perform the work as described in the standard specifications and these provisions and no additional payment shall be made.

10-1.16 TRAFFIC STRIPING, MARKINGS & RAISED PAVEMENT MARKINGS

General

Comply with Section 84 and Section 85 of the 2018 State Standard Specifications.

Thermoplastic traffic stripes (traffic lines) shall conform to the provisions in Sections 84-1, "General" and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings", of the Standard Specifications and these Special Provisions. Painted traffic stripes and pavement markings shall conform to Section 84-1, "General" and 84-3, "Painted Traffic Stripes and Pavement Markings", of the Standard Specifications and these Special Provisions. Pavement Markers shall conform to the provisions in Sections 85, "Pavement Markers", of the Standard Specifications and these Special Provisions.

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Materials

Thermoplastic:

Section 84-2.02, "Materials" of the Standard Specifications is deleted.

The thermoplastic material shall conform to State Specifications 8010-41G-21. Glass beads to be applied to the surface of the molten thermoplastic material shall conform to the requirements of State Specification 8010-22L-22 (Type II), or AASJTP Designation: M 247 (Type 1).

State Specifications for thermoplastic material and glass beads may be obtained from the Transportation Laboratory, P.O. Box 19128, Sacramento, CA. 95819, (916) 739-2400.

Thermoplastic material for traffic stripes shall be applied at a minimum thickness of 0.125-inch.

A primer of the type recommended by the manufacturer of the thermoplastic material shall be applied over all existing painted stripes and pavement legends to be covered with thermoplastic material as shown on the plans.

Construction

General

All construction shall conform to the respective provisions of the Standard Specifications, manufacturer's installation requirements, and the Special Provisions.

Existing Striping and Markings

In areas adjacent to the reconstructed surfacing where existing striping must be changed to conform to a revised striping pattern, conflicting striping shall be removed by sand blasting, grinding, or other methods as specified in the Standard Specifications or by the Engineer.

The Contractor shall provide temporary striping (paint or reflectors) to temporarily replace all striping which has been damaged or obliterated by or during the work. This shall include striping replacement completely across the street even in the event that the Contractor's work may not extend that far. Both lines of each crosswalk shall be completely repainted even if only a portion of a line has been obliterated.

When the Contractor's work removes or reduces the visual appearance of a lane or centerline, the Contractor shall replace all striping between the adjacent intersections in both directions. Where a median exists, this work will be required only in the roadway where the work has occurred, unless a detour which altered the pavement markings occurred in the other roadway. In such cases, the striping will be replaced in both directions.

Layout for Temporary and Permanent Striping

The alignment and layout of traffic stripes shall conform to Subsection 84-1.03, "Traffic Stripes

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and Pavement Markings”, of the Standard Specifications.

All alignments and layout measurements, and other work necessary to locate and replace traffic stripes and pavement markings shall be performed by the Contractor. The City will not provide any assistance, information, or materials to the Contractor. It will be entirely the responsibility of the Contractor to perform all necessary pre-construction and construction layout work, obtain all necessary measurements and information, and prepare all plans for performing the striping and marking work as specified. All traffic control systems necessary for performing striping and marking, as directed by the Engineer, shall be the responsibility of the Contractor.

The Contractor shall physically tie down the beginning and ending location of each paint or thermoplastic marking type to the adjacent curb top. Each marking location shall not exceed 50 square inches. Any locations exceeding this limit shall be removed by the Contractor prior to acceptance of the work. The Contractor shall contact the City Engineer for review of tie downs.

The Contractor shall be responsible for accurately referencing out and replacing the lines and positions of all traffic lines, directional lines, arrows, and other pavement markings in accordance with the plans and City standard markings by cat tracking with painted marks. This shall occur no later than 2 hours behind the final surface course paving operation.

Cat tracking shall consist of stretching a rope on a straight line between control points on tangent alignment and on a true arc through control points on curved alignment and placing spots of paint along the rope. Temporary tab markers shall be placed not more than 12' apart on curves nor more than 24' apart on straight segments.

Temporary tab markers shall be the same color as the traffic stripe that they are replacing, shall measure 2" tall by 3-1/2" wide, and have a reflective lens across the width of the marker.

Prior to application of permanent striping and markers, the Contractor shall call for review and approval of the proposed striping by the City's Traffic Engineer or agent. The City shall have the right to make changes in the location and alignment of line stripes. Striping and traffic markings shall not be applied until after approval is granted by the City's Traffic Engineer or agent. The Contractor shall allow a minimum of three (3) working days for the City to review the layout.

Schedule: Raised pavement markers (RPM's) shall be placed as specified in Subsection 85-1.03A, "General", of the Standard Specifications. When utilizing hot melt bituminous adhesive, RPM's shall be placed after the surface has been open to traffic for at least seven (7) days. When utilizing epoxy adhesive, RPM's shall be placed after the surface has been open to traffic for at least 14 days. Regardless of which adhesive is utilized, the RPM's shall not be placed more than 21 days after paving or surfacing.

Permanent traffic striping and markings including legends and arrows shall be placed no sooner than 14 days and no later than 21 days after paving or surfacing, unless otherwise directed by the Engineer.

Temporary yellow marking tape denoting school crosswalks shall be placed the same day that the pavement surfacing is placed.

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Failure to comply with these requirements shall result in liquidated damages of \$1,000 per day for each street that has not received permanent installation of the required raised pavement markers, traffic striping, and pavement markings.

Pavement Stencils: The Contractor shall use stencils which conform to Caltrans Standard Plans and Details.

Pavement Delineation – Thermoplastic: Pavement temperature shall be measured at the beginning of the shift on each working day and this information shall be provided to the Traffic Engineer.

No primer or thermoplastic shall be installed within 48 hours from the last measurable rain report as provided by the City.

Thermoplastic traffic striping, legends, and arrows shall conform to the provisions of Section 84-1, "General"; Section 84-2, "Thermoplastic Traffic Stripes and Pavement Markings"; and refer to Section 85, "Pavement Markers"; and the Special Provisions.

Retroreflective and Raised Pavement Markers: Installation of both retroreflective and raised pavement markers shall conform to the provisions of Section 85 of the Standard Specifications. Pavement markers shall be placed in the same pattern and locations as they were previously, except as shown on the plans or modified herein.

Pavement markers shall be placed to the line established by the Contractor and approved by the Engineer, which will consist of temporary painted line or new or existing stripes one for each line of markers.

All additional work necessary to establish satisfactory lines for markers shall be performed by the Contractor.

At the option of the Contractor, a hot melt bituminous adhesive may be used to cement the markers to the pavement instead of the Rapid Set Type or Standard Set Type epoxy adhesive specified in 85-1.02E, "Epoxy Adhesive," of the Standard Specifications. Bituminous adhesive material shall conform to the following:

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Specification	ASTM	Requirement
Flash Point, COC, °F	D 92	550 Min.
Softening Point, °F	D 36	200 Min.
Brookfield Thermosel Viscosity, Centipoise, No. 27 Spindle, 20 RPM, 400°F	D 4402	3,000-6,000
Penetration dmm, 100g, 55 seconds, 77°F	D 5	10 - 20
Filler Cement, percent by weight (Insoluble in 1,1,1 Trichloroethane)	D 2371	65 - 75

Filler material used in bituminous adhesive shall be Type PC, Grade III, calcium carbonate conforming to ASTM D1199, and shall conform to the following gradation:

Sieve Size	Percent Passing
No. 100	100
No. 200	95
No. 325	75

Bituminous adhesive shall be heated indirectly in an applicator with continuous agitation or recirculation. Bituminous adhesive shall not be heated above the maximum safe heating temperature recommended by the manufacturer and shall not be applied at temperatures greater than 425°F, nor less than 375°F.

Immediately after application of the adhesive, pavement markers shall be placed in position and pressure applied until firm contact is made with the pavement.

Placement of pavement markers using bituminous adhesive shall conform to the requirements of the third, fourth, ninth and tenth paragraphs in said Subsection 85-1.03A of the Standard Specifications, except as follows:

1. Markers shall not be placed when the pavement or air temperature is 50°F or less.
2. Blast cleaning shall be required.

When bituminous adhesive is used for pavement marker placement, traffic control during placement operations shall conform to the requirements of "Traffic Control System" of these Special Provisions.

Measurement and Payment

The contract unit price paid for as listed in the Bid Schedule and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in applying pavement markers, complete in place, including preparing and submitting an existing striping and marking plan, proper removal and disposal of pavement markers, and clean-

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up, as shown on the plans, as specified in the Standard Specifications and these special provision, and as directed by the Engineer.

10-1.17 ROADSIDE SIGNS

General

Summary

Road Signs shall conform to Section 56-2, "Roadside Signs" and the City of Lathrop Standard Detail "R25-D". The work shall consist of removal of signs identified for removal and furnishing and install exterior post mounted roadside signs as described in Contract Documents.

Submittals

Submit material data sheets for the following:

1. Sign
2. Posts
3. Anchor System/Mounting Sleeves

Material

Concrete

Concrete for sign post foundation shall be 2500 PSI concrete, either prepackaged or ready mix.

Posts

New sign posts shall be 2" x 2" 12-gauge breakaway post or equal as approved by Engineer before installation.

Mounting Sleeves

Heavy Duty On-Piece Anchor and drive rivet fasteners or equal as approved by Engineer before installation.

Signs

All new signs shall be 0.080 min. gauge aluminum sign with Diamond Grade DG-3 sign sheeting.

Construction

Removal

Where specified on plans, remove existing signs. Verify if existing pole can be reused at the same location for installation of new signs. If not, removal shall include sign, pole, and buried concrete pole base. Backfill void w/topsoil in landscape areas, aggregate base or controlled density fill

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(CDF) under pavement areas. For removal of sign posts embedded in concrete facility, cut post flush with surface and fill void with non-shrink grout.

Installation

General

Install signs square and plumb. Where possible, align signposts in a straight, continuous line. Sleeves shall extend 4 inches above top of finish concrete elevation.

Post Foundations

Install signs square and plumb. Where possible, align signposts in a straight, continuous line. Sleeves shall extend 4 inches above top of finish concrete elevation.

1. Landscape Area
Post holes shall be 12 inches in diameter and 28 inches deep. Concrete shall be thoroughly mixed to 4-inch maximum slump. Place concrete to the surface of the turf or mulch. Even up vertical edges with trowel at least 2 inches below top. Finish top of concrete with trowel and slope away from pole. Apply medium broom finish to exposed concrete base.
2. Sidewalks and Concrete Areas
Core 12-inch diameter hole in concrete. Excavate 8" diameter hole 28 inches deep. Thoroughly mix concrete to 4-inch maximum slump. Finish top of concrete even with existing concrete. Match ex. Finish.

Post Installation

Install post in mounting sleeve/anchor and secure on two sides: 1-facing oncoming traffic, 1-facing the roadway.

Measurement and Payment

The contract price paid per each for “**Install Sign Post & Signage**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved with removal of existing sign posts and installation of new sign post and signage as specified in these Special Provisions, as shown on the plans and as directed by the Engineer, shall be considered as included in the contract unit price for the various kinds identified in the Bid Schedule, and no additional compensation will be allowed.

10-1.18 TRAFFIC SIGNAL LOOP DETECTORS

General

The work consists of placement and replacement of signal loops and lead-in wire at intersections

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as indicated on the plans.

All replaced signal loops shall be standard 6 foot by 6-foot rectangular loops unless specifically called out otherwise. Any changes to loop type, placement pattern, or installation may be performed only as allowed by the Engineer.

All such work shall conform to Section 86 of the Standard Specifications and these Special Provisions. No materials are to be reused.

Any necessary temporary modifications, which are required to maintain working signals, shall be performed by the Contractor as part of the work. The maximum allowable time between disconnecting the existing loops and placing the new loops into operation shall be twelve calendar days. Failure to meet this schedule will cause the work to be performed by City forces and the Contractor to be backcharged for those expenses.

Prior to initiating any work on the signal loops, the Contractor shall prepare drawings of all existing signal loops in the affected work area. The drawing shall show type and location of the existing loops, routing of wiring, and the proposed replacement locations.

Materials

Loop detector wire and lead-in cable shall conform to Subsection 86-5.01A (4) of the Standard Specifications.

Paint binder shall conform to the provisions of Section 94, "Asphaltic Emulsions", of the Standard Specifications.

Construction

Where the sump of an existing pull box is disturbed by the Contractor's operations, it shall be reconstructed. If the sump was grouted, the old grout shall be removed and new grout placed.

Detectors will be disconnected or connected by the Contractor, who shall provide the Traffic Engineer with twenty-four hours notice prior to such activity. Timing adjustments shall be made by City traffic personnel.

The Contractor shall mark the locations of the new loop detectors in the field prior to beginning their installation. The City Traffic Division shall be contacted to review the loop locations as marked by the Contractor. Loop installation operations shall commence only after approval is granted by the Traffic Engineer.

Advance warning loops shall be located as outlined in Table 9-1, "Suggested Detector Setbacks from Limitline" in the State Traffic Manual.

In lieu of the requirements in the fourth paragraph of Section 86-5.01A(5), "Installation Details", of the Standard Specifications, detector loop slots in asphalt concrete pavement shall be filled as follows:

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After conductors are installed in the slots cut in the pavement, paint binder shall be applied to all vertical surfaces of the slots. The slots shall then be filled with asphaltic concrete sealants using hot melt loop sealant.

The temperature of sealant material during installation shall be above 70 degrees Fahrenheit. Air temperature during installation shall be above 50 degrees Fahrenheit. Hot melt sealant placed in the slots shall be compacted by use of an eight-inch diameter by 1/8 inch thick steel hand roller or other tool approved by the Engineer. Compacted sealant shall be flush with the pavement surface. Minimum conductor coverage shall be 5/8 inch. Excess sealant remaining after rolling shall not be reused. Traffic may be released immediately over compacted material.

The Contractor shall test all detectors with a motor-driven cycle as defined in the California Vehicle Code. Such cycle shall be licensed for street use by the Department of Motor Vehicles of the State of California. The unladen weight of the vehicle shall not exceed 220 pounds and the engine displacement shall not exceed 100 cubic centimeters. Special features, components, or vehicles designed to activate the detector will not be permitted. The Contractor shall provide an operator who shall drive the motor-driven cycle through the response or detection area of the detector at not less than three miles per hour nor more than seven miles per hour.

Traffic signal loops damaged due to grinding, cold planing, remove & replace, paving, or any other related construction shall be replaced within two weeks following the damage.

Measurement and Payment

The contract unit price paid for “**Remove & Replace Loop Detectors**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in complete removal and installation of traffic loop detectors and temporary loop detectors, according to the existing layout before or as otherwise specified in the plans, Standard Specifications, these special provisions, and as directed by the Engineer.

10-1.19 CONSTRUCTION STAKING

General

The intent of the project is to rehabilitate the existing roadway, install median island curbs, widen portions of the travel lanes, and make minor modifications to the vertical profile for safety and drainage concerns.

The Contractor’s attention is directed to Section 5-1.26, “Construction Surveys”, of the Standard Specifications.

Construction

It is the Contractor’s responsibility to establish sufficient control along the alignment such that

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after the existing roadway is pulverized, the new centerline and median curb alignments and profiles can be established.

Stakes or marks will be set by the Contractor, utilizing a qualified land surveyor in conformance with the requirement in Chapter 12, "Construction Surveys," of the California Department of Transportation's Surveys Manual.

Staking shall be performed a minimum of 2 working days prior to the time when stakes are required. Stakes will be preserved and made available for Engineer to verify the lines and grades of the work.

Construction stakes will be provided at fifty foot intervals in tangent sections, 25 foot intervals in horizontal curve section, and transition points. Damaged or removed stakes shall be replaced per Chapter 12, "Construction Surveys," of the Department's Surveys Manual.

Contractor shall reference all monuments within the limits of work prior to the start of any pavement removed.

Measurement and Payment

The contract price paid per lump sum for "**Construction Staking**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in establishing survey and grading control, as shown on the plans, as specified in the Standard Specifications and in these special provisions, and as directed by the Engineer.

10-1.20 PRESERVING SURVEY MONUMENTATION

General

The work shall consist of complying with Section 8771 of the Professional Land Surveyor's Act effective January 1, 2012. The work shall include the following:

1. Prior to construction, monuments within the work area outlined on the project drawings that control the location of subdivisions, tracts, boundaries, roads, streets, or highways, or provide horizontal and/or vertical survey control shall be located and referenced by or under the direction of a licensed land surveyor or registered civil engineer.
2. Monuments identified under No. 1 above shall be reset in the surface of the new construction, a suitable monument box placed thereon, or permanent witness monuments set to perpetuate their location if any monument could be destroyed, damaged, covered, or otherwise obliterated, and a corner record or record of survey filed with the county surveyor prior to the recording of a certificate of completion for the project. Sufficient controlling monuments shall be retained or replaced in their original positions to enable property, right-of-way and easement lines, property corners, and subdivision and tract boundaries to be reestablished without devious surveys necessarily originating on monuments differing from those that currently control the area.

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The scope of work does not include the cost of adjusting survey monument boxes. This is covered under Lowering and Adjusting Existing Utility Facilities.

Construction

The work shall consist of five parts for each individual survey monument. These parts are 1) research of all applicable survey and property documents to determine if the monument is of record, 2) verifying the physical location of the monument compared to the record location, 3) placing sufficient temporary reference points to accurately relocate the monument after removal and replacement of the concrete or pavement, 4) replacing the monument after completion of the new concrete or pavement, and 5) amending the document record to indicate the work performed. The minimum required documentation is a Corner Record.

Survey monuments such as pipes or tagged monuments shall be set in accordance with the current applicable statutes and regulations.

Upon completion of the monument restoration, the appropriate survey record shall be prepared and filed as required by law and/or statute.

Measurement and Payment

Measurement and Payment for “**Preserving Survey Monumentation**” will be paid as a lump sum item and includes all costs to perform the required work.

TECHNICAL SPECIFICATIONS - UTILITY WORK**PIPING, GENERAL****PART 1 -- GENERAL**

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide all piping systems indicated, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to all piping sections in Divisions 2 and 15.
- C. The mechanical drawings define the general layout, configuration, routing, method of support, pipe size, and pipe type. The mechanical drawings are **not** pipe construction or fabrication drawings. It is the CONTRACTOR's responsibility to develop the details necessary to construct all mechanical piping systems, to accommodate the specific equipment provided, and to provide all spools, spacers, adapters, and connectors for a complete and functional system.

1.2 CONTRACTOR SUBMITTAL

- A. **General:** Submittals shall be furnished in accordance with Section 01300 - Contractor Submittals.
- B. **Shop Drawings:** Shop Drawings shall contain the following information:
 1. Drawings: Layout drawings including all necessary dimensions, details, pipe joints, fittings, specials, bolts and nuts, gaskets, valves, appurtenances, anchors, guides, and material lists. Fabrication drawings shall indicate all spool pieces, spacers, adapters, connectors, fittings, and supports to accommodate the equipment and valves in a complete and functional system.
- C. **Samples:** Performing and paying for sampling and testing as necessary for certifications are the CONTRACTOR'S responsibility.
- D. Certifications
 1. All necessary certificates, test reports, and affidavits of compliance shall be obtained by the CONTRACTOR.
 2. A certification from the pipe fabricator that all pipes will be manufactured subject to the fabricator's or a recognized Quality Control Program. An outline of the program shall be submitted to the ENGINEER for review prior to the manufacture of any pipe.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. **Extent of Work:** Pipes, fittings, and appurtenances shall be provided in accordance with the requirements of the applicable Sections of Divisions 2 and 15 and as indicated.
- B. **Pipe Supports:** Pipes shall be adequately supported, restrained, and anchored in accordance with Section 15006 - Pipe Supports, and as indicated. Supports shall resist stresses created by a seismic load per UBC.
- C. **Lining:** Application, thickness, and curing of pipe lining shall be in accordance with the applicable Sections of Division 2 and Division 9, unless otherwise indicated.
- D. **Coating:** Application, thickness, and curing of pipe coating shall be in accordance with the applicable Sections of Division 2 and Division 9, unless otherwise indicated. Pipes above ground or in structures shall be field-coated in accordance with Section 09800 - Protective Coating.
- E. **Pressure Rating:** Piping systems shall be designed for the maximum expected pressure as defined in Standard Specifications, or as indicated on the Piping Schedule. All piping shall be designed for a minimum working pressure of 150 psi.
- F. **Inspection:** Pipe shall be subject to inspection at the place of manufacture. During the manufacture of the pipe, the ENGINEER shall be given access to all areas where manufacturing is in progress and shall be permitted to make all inspections necessary to confirm compliance with requirements.
- G. **Tests:** Except where otherwise indicated, materials used in the manufacture of the pipe shall be tested in accordance with the applicable specifications and standards. Welds shall be tested as indicated. The CONTRACTOR shall be responsible for performing material tests.
- H. **Welding Requirements:** Welding procedures used to fabricate pipe shall be prequalified under the provisions of ANSI/AWS D1.1 - Structural Welding Code. Welding procedures shall be submitted for the ENGINEER'S review for longitudinal and girth or spiral welds for pipe cylinders, spigot and bell ring attachments, reinforcing plates and ring flange welds, and plates for lug connections.
- I. **Welder Qualifications:** Welding shall be done by skilled welders and welding operators who have had adequate experience in the methods and materials to be used. Welders shall be qualified under the provisions of ANSI/AWS D1.1 by an independent local, approved testing agency not more than 6 months prior to commencing work on the pipeline. Machines and electrodes similar to those used in the WORK shall be used in qualification tests. Qualification testing of welders and materials used during testing are part of the WORK.

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2.2 PIPE FLANGES

- A. **General:** Flanges shall have flat faces and shall be attached with bolt holes straddling the vertical axis of the pipe unless otherwise indicated. Attachment of the flanges to the pipe shall conform to the applicable requirements of ANSI/AWWA C207. Flange faces shall be perpendicular to the axis of the adjoining pipe. Flanges for miscellaneous small pipes shall be in accordance with the standards indicated for these pipes.
- B. **Pressure Ratings**
1. 150 psi or less: Flanges shall conform to either ANSI/AWWA C207 - Steel Pipe Flanges for Waterworks Service--Sizes 4 In. Through 144 In., Class D, or ANSI/ASME B16.5 - Pipe Flanges and Flanged Fittings, 150-lb class.
 2. 150 psi to 275 psi: Flanges shall conform to either ANSI/AWWA C207 Class E or Class F, or ANSI/ASME B16.5 150-lb class.
 3. 275 psi to 700 psi: Flanges shall conform to ANSI/ASME B16.5, 300-lb class.
 4. Selection based on test pressure: AWWA flanges shall not be exposed to test pressures greater than 125 percent of rated capacity. For higher test pressures, the next higher rated AWWA flange or an ANSI-rated flange shall be selected.
- C. **Blind Flanges:** Blind flanges shall be in accordance with ANSI/AWWA C207, or as indicated for miscellaneous small pipes. Blind flanges for pipe sizes 12 inches and greater shall be provided with lifting eyes in form of welded or screwed eye bolts.
- D. **Flange Coating:** Machined faces of metal blind flanges and pipe flanges shall be coated with a temporary rust-inhibitive coating to protect the metal until the installation is completed.
- E. **Flange Bolts:** Bolts and nuts shall conform to Section 05500 - Miscellaneous Metalwork. Studs and bolts shall extend through the nuts a minimum of 1/4-inch. All-thread studs shall be used on all valve flange connections, where space restrictions preclude the use of regular bolts.
- F. **Insulating Flanges:** Insulated flanges shall have bolt holes 1/4-inch diameter greater than the bolt diameter.
- G. **Insulating Flange Sets:** Insulating flange sets shall be provided where indicated. Each insulating flange set shall consist of an insulating gasket, insulating sleeves and washers and a steel washer. Insulating sleeves and washers shall be one piece when flange bolt diameter is 1-1/2-inch or smaller and shall be made of acetal resin. For bolt diameters larger than 1-1/2-inch, insulating sleeves and washers shall be 2-piece and shall be made of polyethylene or phenolic material. Steel washers shall be in accordance with ASTM A 325 - Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength. Insulating gaskets shall be full-face.

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- H. **Flange Gaskets:** Gaskets for flanged joints shall be full-faced type, with material and thickness in accordance with ANSI/AWWA C207, suitable for temperatures to 700 degrees F, a pH of one to eleven, and pressures to 1000 psig. Blind flanges shall have gaskets covering the entire inside face of the blind flange and shall be cemented to the blind flange. Ring gaskets shall not be permitted, unless otherwise indicated.
- I. Type of Pipe: Unless otherwise specified, site pipe materials shall conform to the schedule below:

<u>Service</u>	<u>Size Range</u>	<u>Material</u>
Sewer	4" to 10"	PVC C900
Drainage	12" to 36"	Galv. CMP
Water	1" to 1 1/2"	PE
Water	2" to 4"	PVC C900
Water	6" to 36"	WSP

2.3 THREADED INSULATING CONNECTIONS

- A. **General:** Threaded insulating bushings, unions, or couplings, as appropriate, shall be used for joining threaded pipes of dissimilar metals and for piping systems where corrosion control and cathodic protection are involved.
- B. **Materials:** Threaded insulating connections shall be of nylon, Teflon, polycarbonate, polyethylene, or other non-conductive materials, and shall have ratings and properties to suit the service and loading conditions.

2.4 MECHANICAL-TYPE COUPLINGS (GROOVED OR BANDED PIPE)

- A. **General:** Cast mechanical-type couplings shall be provided where indicated. The couplings shall conform to the requirements of ANSI/AWWA C606 - Grooved and Shouldered Joints. Bolts and nuts shall conform to the requirements of Section 05500 - Miscellaneous Metalwork. Gaskets for mechanical-type couplings shall be compatible with the piping service and fluid utilized, in accordance with the coupling manufacturer's recommendations. The wall thickness of grooved piping shall conform with the coupling manufacturer's recommendations to suit the highest expected pressure. To avoid stress on equipment, equipment connections with mechanical-type couplings shall have rigid-grooved couplings or flexible type coupling with harness in sizes where rigid couplings are not available, unless thrust restraint is provided by other means. Mechanical-type couplings shall be bonded. The CONTRACTOR shall have the coupling manufacturer's service representative verify the correct choice and application of couplings and gaskets, and the workmanship, to assure a correct installation. To assure uniform and compatible piping components, all grooved fittings, couplings, and valves shall be from the same manufacturer.
- B. Manufacturers of Couplings for Steel Pipe, or equal
 - 1. **Victaulic Style 41 or 44** (banded, flexible)

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2. **Victaulic Style 77** (grooved, flexible)
 3. **Victaulic Style 07 or HP-70** (grooved, rigid)
- C. Manufacturers of Couplings for PVC Pipe, or equal
1. **Gustin-Bacon, (Aeroquip Corp)**
 2. **Victaulic Style 775**

Note: Couplings for PVC pipe shall be furnished with radius cut or standard roll grooved pipe ends.

2.5 SLEEVE-TYPE COUPLINGS

- A. **Construction:** Sleeve-type couplings shall be provided where indicated, in accordance with ANSI/AWWA C219 - Standard for Bolted Sleeve-Type Couplings for Plain-End Pipe. Couplings shall be steel with steel bolts, without pipe stop. Couplings shall be of sizes to fit the pipe and fittings indicated. The middle ring shall be not less than 1/4-inch in thickness and shall be either 5 or 7 inches long for sizes up to and including 30 inches and 10 inches long for sizes greater than 30 inches, for standard steel couplings, and 16 inches long for long-sleeve couplings. The followers shall be single-piece contoured mill sections welded and cold-expanded as required for the middle rings, and of sufficient strength to accommodate the number of bolts necessary to obtain adequate gasket pressures without excessive rolling. The shape of the follower shall be of such design as to provide positive confinement of the gasket. Bolts and nuts shall conform to the requirements of Section 05500. Buried sleeve-type couplings shall be epoxy-coated at the factory as indicated.
- B. **Pipe Preparation:** Where indicated, the ends of the pipe shall be prepared for flexible steel couplings. Plain ends for use with couplings shall be smooth and round for a distance of 12 inches from the ends of the pipe, with outside diameter not more than 1/64-inch smaller than the nominal outside diameter of the pipe. The middle ring shall be tested by cold-expanding a minimum of one percent beyond the yield point, to proof-test the weld to the strength of the parent metal. The weld of the middle ring shall be subjected to air test for porosity.
- C. **Gaskets**
1. Gaskets for sleeve-type couplings shall be rubber-compound material that will not deteriorate from age or exposure to air under normal storage or use conditions. Gaskets for wastewater and sewerage applications shall be Buna "N," Grade 60, or equivalent suitable elastomer. The rubber in the gasket shall meet the following specifications:
 - a. Color - Jet Black
 - b. Surface - Non-blooming
 - c. Durometer Hardness - 74 ± 5

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- d. Tensile Strength - 1000 psi Minimum
 - e. Elongation - 175 percent Minimum
2. The gaskets shall be immune to attack by impurities normally found in water or wastewater. All gaskets shall meet the requirements of ASTM D 2000 - Classification System for Rubber Products in Automotive Applications, AA709Z, meeting Suffix B13 Grade 3, except as noted above. Gaskets shall be compatible with the piping service and fluid utilized.
- D. **Insulating Couplings:** Where insulating couplings are required, both ends of the coupling shall have a wedge-shaped gasket which assembles over a rubber sleeve of an insulating compound in order to obtain insulation of all coupling metal parts from the pipe.
- E. **Restrained Joints:** Sleeve-type couplings on pressure lines shall be harnessed unless thrust restraint is provided by other means. Harnesses shall be designed by the pipe manufacturer in accordance with Manual M11, or as indicated. Harness sets shall be designed for the maximum test pressure of the pipe in which they are installed.
- F. **Manufacturers, or equal**
- 1. **Dresser, Style 38**
 - 2. **Ford Meter Box Co., Inc., Style FC1 or FC3**
 - 3. **Smith-Blair, Style 411**
- 2.6 FLEXIBLE CONNECTORS
- A. **Low Temperatures:** Flexible connectors shall be installed in all piping connections to engines, blowers, compressors, and other vibrating equipment, and where indicated. Flexible connectors for service temperatures up to 180 degrees F shall be flanged, reinforced Neoprene or Butyl spools, rated for a working pressure of 40 to 150 psi, or reinforced, flanged duck and rubber, as best suited for the application. Flexible connectors for service temperatures above 180 degrees F shall be flanged, braided stainless steel spools with inner, annular, corrugated stainless steel hose, rated for minimum 150 psi working pressure, unless otherwise indicated. The connectors shall be a minimum of 9 inches long, face-to-face flanges, unless otherwise indicated. The final material selection shall be approved by the manufacturer. The CONTRACTOR shall submit manufacturer's shop drawings and calculations.
- B. **High Temperature:** Flexible connectors shall be installed in engine exhaust piping and where indicated. Connectors shall be sufficient to compensate for thermal expansion and contraction and also to isolate vibration between the engine and the exhaust piping system. Connectors shall be stainless steel bellows type, flanged, and rated for minimum 150 psi, 2000 degrees F.
- 2.7 EXPANSION JOINTS
- A. Piping subject to expansion and contraction shall be provided with sufficient means to compensate for such movement without exertion of undue forces to equipment or structures. This may be accomplished with expansion loops, bellow-type expansion joints, or sliding-

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type expansion joints. Expansion joints shall be of stainless steel, monel, rubber, or other materials best suited for each individual service. The CONTRACTOR shall submit detailed calculations and manufacturer's Shop Drawings of all proposed expansion joints, piping layouts, and anchors and guides, including information on materials, temperature and pressure ratings.

2.8 PIPE THREADS

- A. Pipe threads shall be in accordance with ANSI/ASME B1.20.1 - Pipe Threads, General Purpose (inch), and be made up with Teflon tape unless otherwise indicated.

2.9 PIPE INSULATION

- A. Hot and cold liquid piping, flues, and engine exhaust piping shall be insulated as indicated, in accordance with the requirements of Section 15145 - Pipe and Equipment Insulation. No unprotected hot piping shall be within reach of operating personnel or other persons.

2.10 PREINSULATED PIPE

- A. Preinsulated pipe shall be in accordance with Section 02550 - Preinsulated Pipe.

2.11 HEAT TRACING

- A. Pipes subject to freezing shall be protected by heat tracing in accordance with Section 16850 - Electric Heat Tracing.

2.12 CATHODIC PROTECTION

- A. Where so indicated, buried piping shall be cathodically protected in accordance with Section 16644 - Buried Galvanic Cathodic Protection System.

PART 3 -- EXECUTION

3.1 MATERIAL DELIVERY, STORAGE, AND PROTECTION

- A. Piping materials, fittings, valves, and accessories shall be delivered in a clean and undamaged condition and stored off the ground for protection against oxidation caused by ground contact. Defective or damaged materials shall be replaced with new materials.

3.2 GENERAL

- A. Pipes, fittings, and appurtenances shall be installed in accordance with the requirements of the applicable Sections of Divisions 2 and 15.
- B. **Lined Piping Systems:** The lining manufacturer shall take full responsibility for the complete, final product and its application. Pipe ends and joints of lined pipes at screwed flanges shall be epoxy-coated to assure continuous protection.
- C. **Cleanup:** After completion of the WORK, cuttings, joining and wrapping materials, and

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other scattered debris shall be removed from the Site. The entire piping system shall be handed over in a clean and functional condition.

PVC PRESSURE PIPE, RUBBER JOINTS

(AWWA C900, MODIFIED)

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide polyvinyl chloride (PVC) pressure pipe, complete in place, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. **Commercial Standards:**

ANSI/AWWA C104/A21.5	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
ANSI/AWWA C110/A21.10	Ductile-Iron and Gray-Iron Fittings 3-in Through 48-in for Water and Other Liquids
ANSI/AWWA C111/A21.11	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
ANSI/AWWA C600	Installation of Ductile-Iron Water Mains and Appurtenances
ANSI/AWWA C900	Polyvinyl Chloride (PVC) Pressure Pipe 4-in Through 12-in for Water Distribution
ASTM D 2584	Test Method for Ignition Loss of Cured Reinforced Resins
PPI Technical Report TR 3/4	Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials
AWWA Manual M23	PVC Pipe - Design and Installation

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.
- B. **Shop Drawings:** Drawings of pipe, fittings, and appurtenances. Design calculations to demonstrate compliance of pipe and fittings with this Section. Manufacturer's literature for metallic locating tape.
- C. **Certifications:** A certified affidavit of compliance for pipe and other products or materials

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under this Section and the following supplemental requirements:

1. Hydrostatic proof test reports.
 2. Sustained pressure test reports.
 3. Burst strength test reports.
- D. The CONTRACTOR shall be responsible for performing and paying for sampling and testing as necessary for the certifications.

1.4 QUALITY ASSURANCE

- A. **Inspection:** Pipe shall be subject to inspection at the place of manufacture. The CONTRACTOR shall notify the ENGINEER in writing of the manufacturing starting date not less than 14 calendar days prior to the start of any phase of the pipe manufacture.
- B. During manufacture of the pipe, the ENGINEER shall be given access to all areas where manufacturing is in process and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.
- C. **Tests:** Materials used in manufacture of the pipe shall be tested in accordance with the requirements of this Section and the referenced standards, as applicable.
- D. The CONTRACTOR shall perform said material tests. The ENGINEER shall have the right to witness testing; provided, that the CONTRACTOR'S schedule is not delayed for the convenience of the ENGINEER.
- E. In addition to those tests specifically required, the ENGINEER may request additional samples of any material for testing by the OWNER. The additional samples shall be furnished as a part of the WORK.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. PVC pressure pipe (4-inch through 12-inch) shall conform to the applicable requirements of ANSI/AWWA C900 subject to additional requirements herein.

2.2 PIPE DESIGN CRITERIA

- A. **General:** PVC pressure pipe shall be designed in accordance with the requirements of Appendix A of ANSI/AWWA C900, as applicable, and the supplemental requirements in this Section.
- B. **Pipe Wall Thickness for Internal Pressure:** The pipe shall be designed with a minimum thickness (t) or dimension ratio (DR) in accordance with paragraph A.3 of the above referenced Appendix A.
- C. **Determination of External Loads:** Instead of the equations in paragraph A.4 of the above referenced Appendix A, the dead (earth) loads shall be computed using the following 2 equations for trench or embankment conditions as applicable:

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1. Trench Condition:

$$W_d = C_d w B_d^2$$

Where:	W_d	=	Earth load in pounds per linear foot
	C_d	=	Calculation coefficient
	K_u'	=	[0.13]
	w	=	[130] lb/ft ³
	B_d	=	Trench width at top of pipe, feet

2. Positive Projecting Embankment Condition:

$$W_c = C_c w B_c^2$$

Where:	W_c	=	Earth load in pounds per linear foot
	C_c	=	Calculation coefficient (based on $r_{sd}P$ of 0.75)
	K_u	=	[0.19]
	w	=	[130] lb/ft ³
	B_c	=	Outside diameter of pipe, feet

- D. **Live Truck Loads:** Instead of the equations in paragraph A.4, the truck live loads shall be determined using the method recommended by AASHTO in "Standard Specifications for Highway Bridges." For depths of cover less than 10 feet HS-20 live loads shall be added to the earth loads to determine the total load. For depths of cover 3 feet or less, HS-20 live load plus impact shall be included.
- E. **Deflection Control:** With reference to paragraph A.5, the deflection of the pipe after installation shall not exceed 0.03 times the outside diameter. If the calculated deflection exceeds 0.03 times the outside diameter the pipe class shall be increased or the quality of the pipe zone backfill shall be improved to achieve a higher modulus of soil reaction, E' . For purposes of calculation, values of E' shall be 1100 psi at 90 percent Standard Proctor; 1500 psi at 95 percent Standard Proctor; and 2500 psi at 100 percent Standard Proctor. Similarly, the deflection lag factor shall be 1.5.

2.3 PIPE

- A. The pipe shall be of the diameter and pressure class specified or shown, shall be furnished complete with rubber gaskets, and all specials and fittings shall be provided as required in the Contract Documents. The dimensions and pressure classes for Dimension Ratios for large PVC pressure pipe with Cast-Iron Pipe Equivalent O.D.'s shall conform to the requirements of AWWA C900.
- B. **Additives and Fillers:** Unless otherwise allowed in alternate qualification procedures of PPI-TR3, compounds which have a Hydrostatic Design Basis (HDB) of 4000 psi at 73.4 degrees F and for water shall not contain additives and fillers that exceed the recommended values in Table 1, Part Y of PPI-TR3 (e.g., allowable content range for calcium carbonate is 0.0-5.0 parts per hundred of resin). If requested by the ENGINEER, the additive and filler

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content shall be determined using the pyrolysis method as specified in ASTM D 2584.

- C. **Joints:** Joints for the buried PVC pipe shall be either an integral bell manufactured on the pipe or a separate coupling both employing a rubber ring joint. The bell and coupling shall be the same thickness as of the pipe barrel, or greater thickness. The sealing ring groove in the coupling shall be of the same design as the groove in cast iron fittings and valves available from local water works supply distributors. Where indicated, restrained joint pipe shall be ductile iron pipe. No restrained joint PVC pipe will be allowed.
- D. **Joint Deflection:** Deflection at the joint shall not exceed 1.5 degrees or the maximum deflection recommended by the manufacturer. No deflection of the joint shall be allowed for joints which are over-belled or not belled to the stop mark.

2.4 NOT USED

2.5 FITTINGS

- A. Fittings shall be ductile iron and shall conform to the requirements of AWWA C110, Class 250. PVC pipe fittings shall be mechanical joint.
- B. All fittings shall be lined and coated in accordance with the requirements of Section 09800 - Protective Coating.
- C. Each fitting shall be clearly labeled to identify its size and pressure class.

PART 3 -- EXECUTION

3.1 GENERAL

- A. Laying, jointing, testing for defects and for leakage shall be performed in the presence of the ENGINEER, and shall be subject to approval before acceptance. Material found to have defects will be rejected and the CONTRACTOR shall promptly remove such defective materials from the Site.
- B. Installation shall conform to the requirements of AWWA M23, instructions furnished by the pipe manufacturer, and to the supplementary requirements herein. Wherever the provisions of this Section and the aforementioned requirements are in conflict, the more stringent provision shall apply.

3.2 HANDLING AND STORAGE

- A. **Handling:** Pipe, fittings and accessories shall be carefully inspected before and after installation and those found defective shall be rejected. Pipe and fittings shall be free from fins and burrs. Before being placed in position, pipe, fittings, and accessories shall be cleaned, and shall be maintained in a clean condition. Proper facilities shall be provided for lowering sections of pipe into trenches. Under no circumstances shall pipe, fittings or any other material be dropped or dumped into trenches.
- B. **Storage:** Pipe should be stored, if possible, at the Site in unit packages provided by the

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manufacturer. Caution should be exercised to avoid compression damage or deformation to bell ends of the pipe. Pipe should be stored in such a way as to prevent sagging or bending and be protected from exposure to direct sunlight by covering with an opaque material while permitting adequate air circulation above and around the pipe. Gaskets should be stored in a cool, dark place out of the direct rays of the sun, preferably in original cartons.

3.3 TRENCHING AND BACKFILL

- A. Trench excavation and backfill shall conform to the requirements of Section 02200 - Earthwork.

3.4 INSTALLATION

- A. Bell-and-spigot pipe shall be laid with the bell end pointing in the direction of laying. Pipe shall be graded in straight lines, taking care to avoid the formation of any dips or low points. Pipe shall not be laid when the conditions of trench or weather are unsuitable. At the end of each days work, open ends of pipe shall be closed temporarily with ductile iron mechanical joint cap.
- B. Pipe shall be supported at its proper elevation and grade, care being taken to secure firm and uniform support. Wood support blocking will not be permitted. The full length of each section of pipe and fittings shall rest solidly on the pipe bed, with recessed excavation to accommodate bells, joints, and couplings. Anchors and supports shall be provided where indicated and where necessary for fastening work into place. Fittings shall be independently supported.
- C. Short lengths of pipe shall be used in and out of each rigid joint or rigid structure. Piping that does not allow sufficient space for proper installation of jointing material shall be replaced by one of proper dimensions. Blocking or wedging between bells and spigots will not be permitted.
- D. Joints shall be installed according to manufacturer's recommendations. Trenches shall be kept free of water until joints have been properly made. The maximum combined deflection at any coupling shall be in accordance with the manufacturer's recommendations.
- E. Pipe shall be cut by means of saws, power driven abrasive wheels, or pipe cutters, which will produce a square cut. No wedge-type roller cutters will be permitted. After cutting, the end of the pipe shall be beveled using a beveling tool, portable type sander, or abrasive disc.

3.5 INSTALLATION OF COPPER WIRE

- A. Polyvinyl chloride pipelines shall be provided with No. 10 A.W.G. bare copper wire laid along the top of the pipe and held in place with ties or hitches of the same kind of wire spaced not more than 13 feet apart, or metallic locating tape laid along the centerline of the pipe trench at a depth of 18 inches below finish grade. In such case, the CONTRACTOR shall furnish manufacturer's literature, completely describing the tape proposed to be furnished. No tape shall be used prior to receipt of written approval of the ENGINEER.

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3.6 SERVICE CONNECTIONS

- A. **Service Connections:** Direct tapping will not be permitted. Double strap bronze service clamps shall be used for all service connections. Service clamps shall have a bearing area of sufficient width along the axis of the pipe, so that the pipe will not be distorted when the saddle is made tight. An internal shell cutter shall be used to drill through the corporation stop to minimize PVC shavings, retain the coupon, and reduce stress. Single fluted shell cutters or twist drills are not acceptable. Lubricate the cutting and tapping edges of the tool with cutting lubricant. Make the cuts slowly and use the follower very lightly - do not force cutter through pipe wall. Shell cutter shall have sufficient throat depth to handle the heavy wall PVC pipe. Maximum outlet size permitted with service clamps or saddle is 2 inches.
- B. Tapping sleeves and valves shall be used for all outlet sizes greater than 2 inches in diameter. Tapping sleeves shall be assembled and installed in accordance with the manufacturer's recommendations.

3.7 CONNECTIONS TO EXISTING WATERLINES

- A. The CONTRACTOR shall locate all underground improvements and install the pipelines to the depths indicated. Where the new work is to be connected to existing pipelines, the CONTRACTOR shall make its arrangements with the serving utility well in advance of the connections, to allow adequate time for dewatering of the existing line, if necessary, and shall expedite the work to minimize water outages to the users. Where sections of existing distribution mains are taken permanently out of service and abandoned in place, the cut ends shall be plugged solid with concrete to a depth of not less than one pipe diameter.

3.8 FIELD TESTING AND DISINFECTION

- A. Field testing and disinfection and water mains shall conform to the requirements of the City of Lathrop Design & Construction Standards.

VALVES, GENERAL

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide all valves, actuators, and appurtenances, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to all valves and valve actuators except where otherwise indicated. Valves and actuators in particular locations may require a combination of units, sensors, limit switches, and controls indicated in other Sections of the Specifications.
- C. Where a valve is to be supported by means other than the piping to which it is attached, the

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CONTRACTOR shall obtain from the valve manufacturer a design for support and foundation that satisfies the criteria in Section 11000. The design, including drawings and calculations sealed by an engineer, shall be submitted with the Shop Drawings. When the design is approved, the support shall be provided.

- D. **Unit Responsibility:** A single manufacturer shall be made responsible for coordination of design, assembly, testing, and furnishing of each valve; however, the CONTRACTOR shall be responsible to the OWNER for compliance with the requirements of each valve section. Unless indicated otherwise, the responsible manufacturer shall be the manufacturer of the valve.
- E. **Single Manufacturer:** Where two or more valves of the same type and size are required, the valves shall be furnished by the same manufacturer.

1.2 CONTRACTOR SUBMITTALS

- A. **General:** Submittals shall be furnished in accordance with Section 01300 - Contractor Submittals.
- B. **Shop Drawings:** Shop Drawings shall contain the following information:
 - 1. Valve name, size, Cv factor, pressure rating, identification number (if any), and specification section number.
 - 2. Complete information on valve actuator, including size, Manufacturer, model number, limit switches, and mounting.
 - 3. Cavitation limits for all control valves.
 - 4. Assembly drawings showing part nomenclature, materials, dimensions, weights, and relationships of valve handles, handwheels, position indicators, limit switches, integral control systems, needle valves, and control systems.
 - 5. Data in accordance with Section 16460 - Electric Motors for all electric motor-actuated valves.
 - 6. Complete wiring diagrams and control system schematics.
 - 7. Valve Labeling: A schedule of valves to be furnished with stainless steel tags, indicating in each case the valve location and the proposed wording for the label.
- C. **Technical Manual:** The Technical Manual shall contain the required information for each valve.
- D. **Spare Parts List:** A Spare Parts List shall contain the required information for each valve assembly, where indicated.

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- E. **Factory Test Data:** Where indicated, signed, dated, and certified factory test data for each valve requiring certification shall be submitted before shipment of the valve. The data shall also include certification of quality and test results for factory-applied coatings.

PART 2 -- PRODUCTS

2.1 PRODUCTS

- A. **General:** Valves and gates shall be new and of current manufacture. Shut-off valves 6-inches and larger shall have actuators with position indicators. Buried valves shall be provided with valve boxes and covers containing position indicators and valve extensions. Manual shut-off valves mounted higher than 7-feet above working level shall be provided with chain actuators.
- B. **Valve Actuators:** Unless otherwise indicated, valve actuators shall be in accordance with Section 15201 - Valve and Gate Actuators.
- C. **Protective Coating:** The exterior surfaces of all valves and the wet interior surfaces of ferrous valves of sizes 4 inches and larger shall be coated in accordance with Section 09800 - Protective Coating. The valve Manufacturer shall certify in writing that the required coating has been applied and tested in the manufacturing plant prior to shipment, in accordance with these Specifications. Flange faces of valves shall not be epoxy coated.
- D. **Valve Labeling:** Except when such requirement is waived by the ENGINEER in writing, a label shall be provided on all shut-off valves and control valves except for hose bibs and chlorine cylinder valves. The label shall be of 1/16-inch plastic or stainless steel, minimum 2 inches by 4 inches in size, as indicated in Section 15005 - Piping Identification Systems, and shall be permanently attached to the valve or on the wall adjacent to the valve as directed by the ENGINEER.
- E. **Valve Testing:** As a minimum, unless otherwise indicated or recommended by the reference Standards, valves 3 inches in diameter and smaller shall be tested in accordance with manufacturer's standard and 4 inches in diameter and larger shall be factory tested as follows:
 - 1. **Hydrostatic Testing:** Valve bodies shall be subjected to internal hydrostatic pressure equivalent to twice the water rated pressure of the valve. Metallic valves rating pressures shall be at 100 degrees F and plastic valves shall be 73 degrees, or at higher temperature according to type of material. During the hydrostatic test, there shall be no leakage through the valve body, end joints, or shaft seals, nor shall any part of the valve be permanently deformed. The duration shall be sufficient time to allow visual examination for leakage. Test duration shall be at least 10 minutes.
 - 2. **Seat Testing:** Valves shall be tested for leaks in the closed position with the pressure differential across the seat equal to the water rated pressure of the valve. The duration of test shall be sufficient time to allow visual examination for leakage. Test duration shall be at least 10 minutes. Leakage past the closed valve shall not exceed 1 fluid

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ounce per hour per inch diameter for metal seated valves and drop-tight for resilient seated valves.

3. **Performance Testing:** All valves shall be shop operated from fully closed to fully open position and reverse under no-flow conditions in order to demonstrate the valve assembly operates properly.
- F. **Certification:** Prior to shipment, the CONTRACTOR shall submit for valves over 12 inches in size, certified, notarized copies of the hydrostatic factory tests, showing compliance with the applicable standards of AWWA, ANSI, or ASTM.
- G. **Valve Marking:** Valve bodies shall be permanently marked in accordance with MSS SP25 - Standard Marking Systems for Valves, Fittings, Flanges, and Unions.

2.2 MATERIALS

- A. **General:** Materials shall be suitable for the intended application. Materials not indicated shall be high-grade standard commercial quality, free from defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended. Unless otherwise indicated, valve and actuator bodies shall conform to the following requirements:
 1. **Cast Iron:** Close-grained gray cast iron, conforming to ASTM A 48 - Gray Iron Castings, Class 30, or to ASTM A 126 - Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
 2. **Ductile Iron:** ASTM A 536 - Ductile Iron Castings, or to ASTM A 395 - Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures.
 3. **Steel:** ASTM A 216 - Steel Castings, Carbon Suitable for Fusion Welding for High-Temperature Service, or to ASTM A 515 - Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service.
 4. **Bronze:** ASTM B 62 - Composition Bronze or Ounce Metal Castings, and valve stems not subject to dezincification shall conform to ASTM B 584 - Copper Alloy Sand Castings for General Applications.
 5. **Stainless Steel:** Stainless steel valve and operator bodies and trim shall conform to ASTM A 351 - Steel Castings, Austenitic, for High-Temperature Service, Grade CF8M, or shall be Type 316 stainless steel.
 6. **PVC:** Poly Vinyl Chloride materials for valve body, flanges, and cover shall conform to Cell Classification 12454.
 7. **CPVC:** Chlorinated Poly Vinyl Chloride materials for valve body, flanges, and cover shall conform to Cell Classification 23447.
 8. **NSF Standard 14:** All materials shall be listed for use in contact with potable water.

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2.3 VALVE CONSTRUCTION

- A. **Bodies:** Valve bodies shall be cast, molded (in the case of plastic valves), forged, or welded of the materials indicated, with smooth interior passages. Wall thicknesses shall be uniform in agreement with the applicable standards for each type of valve, without casting defects, pinholes, or other defects that could weaken the body. Welds on welded bodies shall be done by certified welders and shall be ground smooth. Valve ends shall be as indicated and be rated for the maximum temperature and pressure to which the valve will be subjected.
- B. **Bonnets:** Valve bonnets shall be clamped, screwed, or flanged to the body and shall be of the same material, temperature, and pressure rating as the body. The bonnets shall have provision for the stem seal with the necessary glands, packing nuts, or yokes.
- C. **Stems:** Valve stems shall be of the materials indicated, or, if not indicated, of the best commercial material for the specific service, with adjustable stem packing, O-rings, Chevron V-type packing, or other suitable seal. Where subject to dezincification, bronze valve stems shall conform to ASTM B 62, containing not more than 5 percent of zinc or more than 2 percent of aluminum, with a minimum tensile strength of 30,000 psi, a minimum yield strength of 14,000 psi, and an elongation of at least 10 percent in 2 inches. Where dezincification is not a problem, bronze conforming to ASTM B 584 may be used, except that zinc content shall not exceed 16 percent.
- D. **Stem Guides:** Stem guides shall be provided, spaced 10-feet on centers unless the manufacturer can demonstrate by calculation that a different spacing is acceptable. Submerged stem guides shall be 304 stainless steel.
- E. **Internal Parts:** Internal parts and valve trim shall be as indicated for each individual valve. Where not indicated, valve trim shall be of Type 316 stainless steel or other best suited material.
- F. **Nuts and Bolts:** Nuts and bolts on valve flanges and supports shall be in accordance with Section 05500 - Miscellaneous Metalwork.

2.4 VALVE ACCESSORIES

- A. Valves shall be furnished complete with the accessories required to provide a functional system.

2.5 SPARE PARTS

- A. The CONTRACTOR shall furnish the required spare parts suitably packaged and labeled with the valve name, location, and identification number. The CONTRACTOR shall also furnish the name, address, and telephone number of the nearest distributor for the spare parts of each valve. Spare parts are intended for use by the OWNER, after expiration of the correction of defects period.

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2.6 MANUFACTURERS

- A. **Manufacturer's Qualifications:** Valve manufacturers shall have a successful record of not less than 5 years in the manufacture of the valves indicated.

PART 3 -- EXECUTION

3.1 VALVE INSTALLATION

- A. **General:** Valves, actuating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the Manufacturer's written instructions and as indicated. Gates shall be adequately braced to prevent warpage and bending under the intended use. Valves shall be firmly supported to avoid undue stresses on the pipe.
- B. **Access:** Valves shall be installed with easy access for actuation, removal, and maintenance and to avoid interference between valve actuators and structural members, handrails, or other equipment.
- C. **Valve Accessories:** Where combinations of valves, sensors, switches, and controls are indicated, the CONTRACTOR shall properly assemble and install such items so that systems are compatible and operating properly. The relationship between interrelated items shall be clearly noted on Shop Drawing submittals.

VALVE AND GATE ACTUATORS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide valve and gate actuators and appurtenances, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to all valves and gates, except where otherwise indicated in the Contract Documents.
- C. **Unit Responsibility:** The valve or gate manufacturer shall be made responsible for coordination of design, assembly, testing, and installation of actuators on the valves and gates; however, the CONTRACTOR shall be responsible to the OWNER for compliance of the valves, gates, and actuators with the Contract Documents.
- D. **Single Manufacturer:** Where two or more valve or gate actuators of the same type or size are required, the actuators shall be produced by the same Manufacturer.

1.2 CONTRACTOR SUBMITTALS

- A. **General:** Submittals shall be furnished in accordance with Section 01300 - Contractor

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Submittals and Section 15200 - Valves, General.

- B. **Shop Drawings:** Shop Drawings of all actuators shall be submitted together with the valve and gate submittals as a complete package.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. **General:** Unless otherwise indicated, shut-off and throttling valves and externally-actuated valves and gates shall be provided with manual or power actuators. The CONTRACTOR shall furnish actuators complete and operable with mounting hardware, motors, gears, controls, wiring, solenoids, handwheels, levers, chains, and extensions, as applicable. Actuators shall have the torque ratings equal to or greater than required for valve seating and dynamic torques, whichever is greater and shall be capable of holding the valve in any intermediate position between fully-open and fully-closed without creeping or fluttering. All wires of motor-driven actuators shall be identified by unique numbers.
- B. **Manufacturers:** Where indicated, certain valves and gates may be provided with actuators manufactured by the valve or gate Manufacturer. Where actuators are furnished by different manufacturers, the CONTRACTOR shall coordinate selection to have the fewest number of manufacturers possible.
- C. **Materials:** Actuators shall be current models of the best commercial quality materials and liberally-sized for the required torque. Materials shall be suitable for the environment in which the valve or gate is to be installed.
- D. **Mounting:** Actuators shall be securely mounted by means of brackets or hardware specially designed and sized for this purpose and of ample strength. The word "open" shall be cast on each valve or actuator with an arrow indicating the direction to open in the counter-clockwise direction. Gear and power actuators shall be equipped with position indicators. Where possible, manual actuators shall be located between 48 and 60 inches above the floor or the permanent working platform.
- E. **Standard:** Unless otherwise indicated and where applicable, actuators shall be in accordance with ANSI/AWWA C 540 - AWWA Standard for Power-Actuating Devices for Valves and Sluice Gates.

2.2 MANUAL ACTUATORS

- A. **General:** Unless otherwise indicated, valves and gates shall be furnished with manual actuators. Valves in sizes up to and including 4 inches shall have direct acting lever or handwheel actuators of the Manufacturer's best standard design. Larger valves and gates shall have gear-assisted manual actuators, with an operating pull of maximum 60 pounds on the rim of the handwheel. Buried and submerged gear-assisted valves, gates, gear-assisted valves for pressures higher than 250 psi, valves 30 inches in diameter and larger, and where

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so indicated, shall have worm-gear actuators, hermetically-sealed and grease-packed, where buried or submerged. All other valves 6 inches to 24 inches in diameter may have traveling-nut actuators, worm-gear actuators, spur- or bevel-gear actuators, as appropriate for each valve.

- B. **Buried Valves:** Unless otherwise indicated, buried valves shall have extension stems to grade, with square nuts or floor stands, position indicators, and cast-iron or steel pipe extensions with valve boxes, covers, and operating keys. Where so indicated, buried valves shall be in cast-iron, concrete, or similar valve boxes with covers of ample size to allow operation of the valve actuators. Covers of valve boxes shall be permanently labeled as requested by the local Utility Company or the ENGINEER. Wrench-nuts shall comply with AWWA C 500 -Metal - Seated Gate Valves for Water Supply Service.
 - C. **Chain Actuator:** Manually-activated valves with the stem located more than 7 feet above the floor or operating level shall be provided with chain drives consisting of sprocket-rim chain wheels, chain guides, and operating chains provided by the valve Manufacturer. The wheel and guide shall be of ductile-iron, cast-iron, or steel, and the chain shall be hot-dip galvanized steel or stainless steel, extending to 5 feet 6 inches above the operating floor level. The valve stem of chain-actuated valves shall be extra strong to allow for the extra weight and chain pull. Hooks shall be provided for chain storage where chains interfere with pedestrian traffic.
 - D. **Floor Boxes:** Hot-dip galvanized cast-iron or steel floor boxes and covers to fit the slab thickness shall be provided for operating nuts in or below concrete slabs. For operating nuts in the concrete slab, the cover shall be bronze-bushed.
 - E. **Tee Wrenches:** Buried valves with floor boxes shall be furnished with 2 operating keys or 1 key per 10 valves whichever is greater. Tee wrenches, sized so that the tee handle will be 2 to 4 feet above ground, shall fit the operating nuts.
 - F. **Manual Worm-Gear Actuator:** The actuator shall consist of a single or double reduction gear unit contained in a weather-proof cast-iron or steel body with cover and minimum 12-inch diameter handwheel. The actuator shall be capable of 90-degree rotation and shall be equipped with travel stops capable of limiting the valve opening and closing. The actuator shall consist of spur or helical gears and worm-gearing. The spur or helical gears shall be of hardened alloy steel and the worm-gear shall be alloy bronze. The worm-gear shaft and the handwheel shaft shall be of 17-4 PH or similar stainless steel. All gearing shall be accurately cut with hobbing machines. Ball or roller bearings shall be used throughout. Actuator output gear changes shall be mechanically possible by simply changing the exposed or helical gearset ratio without further disassembly of the actuator. All gearing shall be designed for a 100 percent overload.
- 2.3 NOT USED
- 2.4 NOT USED

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PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

- A. **Field Adjustments:** Field representatives of manufacturers of valves or gates with pneumatic, hydraulic, or electric actuators shall adjust actuator controls and limit-switches in the field for the required function.

3.2 INSTALLATION

- A. Valve and gate actuators and accessories shall be installed in accordance with Section 15200 - Valves, General. Actuators shall be located to be readily accessible for operation and maintenance, without obstructing walkways. Actuators shall not be mounted where shock or vibrations will impair their operation, nor shall the support systems be attached to handrails, process piping, or mechanical equipment.

BUTTERFLY VALVES

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide butterfly valves and appurtenances, complete and operable, in accordance with the Contract Documents.
- B. The requirements of Section 15200 - Valves, General apply to this Section.
- C. The requirements of Section 15201 - Valve and Gate Actuators apply to this Section.

1.2 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR shall furnish submittals in accordance with Section 15200.

PART 2 -- PRODUCTS

2.1 BUTTERFLY VALVES (AWWA)

- A. **General:** Butterfly valves for water working pressures up to 150 psi shall conform to ANSI/AWWA C504 - Rubber Seated Butterfly Valves, subject to the following requirements. Valves shall be of the size and class indicated. Flanged valves shall have ANSI 125-lb flanges. Shaft seals shall be designed for use with standard split-V type packing, or other acceptable seal. The interior passage of butterfly valves shall not have any obstructions or stops. The seats shall be positively clamped or bonded into the disc or body of the valve, but cartridge-type seats which rely on a high coefficient of friction for retention shall not be acceptable.

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- B. **Manual Actuators:** Actuators shall be rated according to ANSI/AWWA C504, including the torque requirements. Actuators shall also conform to Section 15201 and to ANSI/AWWA C540 - Power Actuating Devices for Valves and Sluice Gates, subject to the following requirements. Unless otherwise indicated, all manually-actuated butterfly valves shall be equipped with a handwheel and 2-inch square actuating nut and position indicator. Screw-type (traveling nut) actuators will not be permitted for valves 30 inches in diameter and larger.
- C. **Worm Gear Actuators:** Valves, 30 inches and larger, as well as all submerged and buried valves, shall be equipped with worm-gear actuators, lubricated and sealed to prevent entry of dirt or water into the housing.
- D. **Manufacturers, or Equal:**
 - 1. **De Zurik Corporation**
 - 2. **Kennedy Valve**
 - 3. **K-FLO**
 - 4. **M & H Valve Company**
 - 5. **Mueller Company**
 - 6. **Henry Pratt Company**
 - 7. **Rodney Hunt Company (24" and larger)**

2.2 RECTANGULAR BUTTERFLY VALVES

- A. **General:** Rectangular or square butterfly valves shall be leak-tight at pressures of 25 psi with flow in either direction. Valves shall be satisfactory for applications involving throttling service, frequent actuation, and for applications involving valve actuation after long periods of inactivity. Valve discs shall rotate 90 degrees from the full-open position to the tight-shut position.
- B. **Body:** The valve body shall be of carbon steel fabrication conforming to ASTM A 36 - Specification for Structural Steel, designed for channel mounting with flanged ends, to accommodate a pressure rating of 25 psi.
- C. **Disc:** The valve disc shall be fabricated of carbon steel with a Type 316 stainless steel seating edge. Leakage at corners under specified conditions or tests shall be cause for rejection. The disc shall be streamlined in shape to prevent turbulence in the fully open position, and to minimize head loss across the valve.
- D. **Seat:** The valve seat shall be contained in the body of the valve. The retaining segment and screws shall be of Type 316 stainless steel. The seat shall be of a synthetic rubber compound with a durometer of 50. Seats shall be fully field-adjustable and replaceable without dismantling the actuator, disc, or shaft.
- E. **Shaft:** The shaft shall be securely locked to the disc by means of stainless steel taper pins. Shaft material shall be of Type 304 or 316 stainless steel.

DIVISION 2

- F. **Bearings:** Each valve shall be provided with a 2-way thrust bearing assembly designed to hold the disc centered in the valve seat at all times, and with self-lubricated shaft bearings.
- G. **Actuators:** Actuators shall be rated according to ANSI/AWWA C504, including the torque requirements. Actuators shall also be in accordance with Section 15201, ANSI/AWWA C540, and be designed to hold the valve in any intermediate position between fully-open and fully-closed without creeping or fluttering. Unless otherwise indicated, actuators shall be of the worm-gear type with handwheels. Actuator components shall withstand an input torque of 300 ft-lb at extreme actuator positions without damage.
- H. **Manufacturers, or Equal:**
 - 1. **De Zurik Corporation**
 - 2. **Henry Pratt Company**
 - 3. **Rodney Hunt Company**

2.3 BUTTERFLY VALVES FOR AIR SERVICE

- A. **General:** Butterfly valves for air systems shall be specifically designed for this service and meet or exceed the design, strength, performance, and testing standards of ANSI/AWWA C 504 - Rubber Seated Butterfly Valves. They shall be suitable for pressures from vacuum to 125 psi, and temperatures from minus 40 degrees F to 250 degrees F.
- B. **Body:** The valve body shall be of cast iron conforming to ASTM A 126 - Gray Iron Castings for Valves, Flanges, and Pipe Fittings, Class B, with either wafer, lug, or flanged design as indicated, drilled to ANSI B 16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800, Class 125.
- C. **Disc:** The disc shall be of ductile iron conforming to ASTM A 536 - Ductile Iron Castings, or cast iron conforming to ASTM A 48 - Gray Iron Castings, or ASTM A 126 - Gray Iron Castings for Valves, Flanges, and Pipe Fittings with an edge of monel, Type 316 stainless steel, or nickel. The disc shall be designed with the air-profile or other suitable shape. Sprayed or plated disc edges are not acceptable.
- D. **Seat:** The elastomer seat shall be in the body. It shall be field-replaceable without special tools. Except for use with petroleum-base fluids, the seat material shall be Ethylene-Propylene-Diene Monomer (EPDM), or other suitable material, to provide a tight shut-off at the above-mentioned temperatures.
- E. **Shaft:** The valve shaft shall be of Type 316 or 304 stainless steel, with sufficient strength to allow for the increased torque for air service.
- F. **Bearings:** All shaft bearings shall be of the self lubricating corrosion resistant sleeve type.
- G. **Packing:** The packing shall be of the adjustable or self adjustable (O-ring) type, suitable for the temperature and service conditions.

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H. **Actuators:** Actuators shall be rated according to ANSI/AWWA C504, including the torque requirements. Valve actuators shall also be in accordance with Section 15201 and ANSI/AWWA C540. They shall be sized for air service applications, with the torque condition after 3 years of service. Manual actuators shall allow for positive throttling and locking in any position from open to closed.

I. **Testing:** All valves shall be factory leak tested in accordance with ANSI/AWWA C 504.

J. **Manufacturers, or Equal:**

1. **De Zurik Corporation**
2. **Rodney Hunt Company (24" and larger)**

2.4 HIGH PRESSURE BUTTERFLY VALVES

A. **General:** High pressure butterfly valves shall be of the ANSI class 300 single flange, lugged design, suitable for working pressures up to 740 psi at temperatures ranging from -20 degrees F to 100 degrees F.

B. **Body:** The valve body shall be of carbon steel to mate with ANSI class 300 flanges; conforming to ASTM A 216 - Steel Castings, Carbon Suitable for Fusion Welding for High-Temperature Service, Type WCB, or ASTM A 515 - Pressure Vessel Plates, Carbon Steel, for Intermediate-and Higher-Temperature Service, Grade 70.

C. **Disc:** The disc shall be offset, of Type 316 or 317L Stainless Steel, conforming to ASTM A 351 - Steel Castings, Austenitic, for High-Temperature Service, or ASTM A 743 - Castings, Iron-Chromium, Iron-Chromium-Nickel, and Nickel-Base Corrosion - Resistant for General Application, respectively.

D. **Seat:** The valve shall have a soft seat, retained in the body by an Inconel or Type 316 stainless steel ring. The seat material shall be PTFE, TFE, or filled TFE.

E. **Shaft:** The shaft shall be of one-piece construction, of Type 316 or 17-4 PH stainless steel.

F. **Bearings:** The shaft bearings shall be corrosion-resistant and self-lubricating, made of Type 316 stainless steel backed with TFE, or Type 317 stainless steel.

G. **Packing:** The shaft packing shall be adjustable and field-replaceable of TFE chevron type design or PTFE V-flex style.

H. **Actuator:** Unless otherwise indicated, the valve actuators shall be of the worm gear type, in accordance with Section 15201, designed for the full rating of the valve. Manual actuators shall allow for positive throttling and locking in any position from open to closed.

I. **Testing:** The valves shall be factory-tested in accordance with Section 15200. In addition, all valves shall be gas-tested in accordance with Section 15201.

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UTILITY WORK

- J. Manufacturers, or Equal:
 - 1. **De Zurik Corporation**
 - 2. **Flowseal**
 - 3. **Masoneilan (Dresser Industries)**
 - 4. **Neles-Jamesbury, Inc.**

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. All exposed butterfly valves shall be installed with a means of removing the complete valve assembly without dismantling the valve or operator. The installation shall be in accordance with Section 15200.