

CITY OF SAN CARLOS
SAN MATEO COUNTY, CALIFORNIA

Public Works Department
600 Elm Street
San Carlos, CA 94070

Contract Documents
For the

**ARROYO AVENUE AND CHESTNUT
STREET SAFE ROUTES TO SCHOOL
IMPROVEMENTS**

CITY PROJECT NO: C2201



BID OPENING: Tuesday May 16, 2024 at 10:00 a.m.

BID SET

Arroyo Avenue and Chestnut Street Safe Routes to School Improvements

City Project No. C2201

DESIGN CERTIFICATION

The Plans and Technical Specifications contained herein have been prepared by, or under the responsible charge of, the following registered person(s):

Prepared by:



04/15/24

MANNY ABUCAY, P.E., CIVIL ENGINEER
Bellecci
2290 Diamond Boulevard, Concord, CA 94520
(925) 685-4569

Date

Approved for Construction:

GRACE LE, P.E., CITY ENGINEER
Public Works Department
City of San Carlos
600 Elm Street, San Carlos, CA 94070
(650) 802-4201

Date

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**CITY OF SAN CARLOS
SAN MATEO COUNTY, CALIFORNIA**

NOTICE INVITING SEALED PROPOSALS

NOTICE IS HEREBY GIVEN that sealed proposals or bids will be for the "**Arroyo Avenue and Chestnut Street Safe Routes to School Improvements, City Project No. C2201**" shall be received at the San Carlos City Clerk's Office at City Hall – 600 Elm Street, San Carlos, CA 94070 by **Thursday, May 16, 2024 at 10:00 a.m.** and will immediately then be publicly opened, examined and announced by the San Carlos City Clerk. No Pre-Bid Conference has been scheduled for this Project.

A **Class A, Contractor's License** is required for this work. Work will be done and payments will be made in accordance with provisions more particularly described in the plans and specifications.

The scope of work generally includes mobilization, traffic control, water pollution control, dust prevention and control, site cleanup, asphalt concrete grinding/removal, asphalt concrete installation, concrete bulb-out installation, ADA ramp construction, utility cover lowering & restoring to grade, rectangular rapid flash beacon (RRFB) installation, striping removal, replacement & installation and all other work as shown on the Plans and as called for in the Technical Provisions and as directed by the Engineer.

Bids are required for the entire work described herein in accordance with the instructions to bidders. The Engineer's Estimate is between \$430,000 and \$550,000.

Bids must be accompanied by a Proposal guarantee amounting to ten (10%) percent of the bid as described in the specifications. Said guarantee shall be forfeited to the City in case the bidder depositing the same does not, within fifteen days after written notice that the contract has been awarded to the Contractor (1) enter into a contract with the City and (2) furnish Performance and Payment Bonds as described in the specifications.

The City Council reserves the privilege of rejecting any and all proposals or to waive any irregularities or informalities in any proposals or in the bidding. No bidder may withdraw their proposal for a period of ninety (90) calendar days after the date set for opening of proposals.

As a "Public Works" project and pursuant to Section 1773 of the Labor Code, the general prevailing wage rates for San Mateo County shall apply to this contract, as determined by the Director of the California Department of Industrial Relations.

Plans and specifications, forms of proposals, bonds and contracts may be inspected or obtained from ARC Document Solutions at 829 Cherry Lane, San Carlos, CA 94070, (650) 631-2310; email at sancarlos@e-arc.com; or visit the City of San Carlos Website at www.cityofsancarlos.org. Bidders must register with ARC Document Solutions to obtain further information.

Bidders are directed to the Instructions for Bidders for additional contract requirements.

Dated: _____

/s/ CRYSTAL MUI
City Clerk

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**CITY OF SAN CARLOS
SAN MATEO COUNTY, CALIFORNIA**

INSTRUCTIONS TO BIDDERS

1. Proposal Requirements: Bidder's attention is directed to the General Provisions of these Specifications for the requirements and conditions which must be adhered to in the preparation of the proposal form and submission of this proposal.
2. Receipt of Bids and Bid Opening: Proposals shall be received at the office of the City Clerk, 600 Elm Street, San Carlos, CA 94070, not later than the bid deadline described in the Notice Inviting Sealed Proposals. Proposals shall be submitted in a sealed envelope, plainly marked on the outside **"Arroyo Avenue and Chestnut Street Safe Routes to School Improvements No. C2201"**.
3. Time of Completion and Liquidated Damages: All work shall be diligently prosecuted to completion before the expiration of **Thirty (30) Working Days** from the date of receipt of the "Notice to Proceed". If the Contractor fails to complete the work within the above-specified time limit, the Contractor shall pay liquidated damages to the City, computed at the rate of **Five Thousand Dollars (\$5,000)** for each calendar day beyond the specified time limit until the project is completed.
4. Bid Security: Pursuant to California Public Contract Code Section 20170, each proposal shall be accompanied by a bid security in the form of cash, cashier's or certified check, or bidder's bond made payable to the "City of San Carlos" for an amount equal to at least ten percent (10%) of the Bid Amount and no bid shall be considered unless such security is enclosed therewith.
5. Bid Guarantee: No bid shall be withdrawn except as provided for pursuant to Public Contract Code Section 5103, and the bidder shall guarantee the Total Bid Price for a period of ninety (90) calendar days from the date of the bid opening.
6. Contractor's License: Bidders are to be licensed in accordance with the provisions of the "Contractor's License Law," Chapter 9 of Division 3 of the State Business and Professions Code. In addition, at the time of submitting the bid, bidder must have the following classification of contractor's license: Class A, Contractor's License.
7. Additional Registration and Licensing Requirements: In accordance with Labor Code Section 1725.5, Contractor and all Subcontractors shall be registered with the California Department of Industrial Relations (DIR) as a condition of being listed on the proposal form. All 2nd and lower tier subcontractors working on the project shall be registered with the Department of Industrial Relations prior to the work being performed. Contractor and all Subcontractors shall also obtain a City business license prior to the work being performed.
8. Prevailing Wage: The work contemplated by this contract is a "public work" subject to prevailing wages under California Labor Code Section 1770 *et. seq.* The successful bidder will be required to pay not less than the prevailing rate of per diem wages as determined by the California Department of Industrial Relations or Federal Minimum Wage Rates as determined by the United States Secretary of Labor in effect on the date the work is performed.

9. Bonds and Insurance: All contractors are required to furnish to the City faithful performance, labor and materials, and 2-year warranty bonds and insurance, as required in the specifications.
10. Security Substitution: Pursuant to California Public Contract Code Section 22300, and at the request and expense of the Contractor to whom the Contract is awarded, securities of a value equivalent to the retention amount, in a form approved by the City, shall be permitted in substitution for money withheld by the City to ensure performance under the Contract.
11. Pre-Bid Conference: No pre-bid conference has been scheduled for this project.
12. Requests for Clarification and Project Communication: In the event the bidder has any questions as to the meaning of any part of the plans and specifications, or if the bidder finds any error, inconsistency, or ambiguity in the Contract Documents, the bidder shall make a written request for clarification prior to submitting its bid. All questions and comments regarding the plans and specifications should be directed to the Project Manager indicated below and will only be responded to if received in writing at least five (5) working days before the bid opening. Questions received after this time and date may not be addressed.

City of San Carlos – Public Works Department
600 Elm Street, San Carlos, CA 94070
Attention: Jana Cadiz, Associate Engineer - Traffic
jcadiz@cityofsancarlos.org
Telephone: (650) 802-4108

13. These “Instructions to Bidders” are hereby made a part of the Contract Documents.

**SCHEDULE OF REQUIRED
BID DOCUMENTS AND AGREEMENT FORMS**

Submit with Bid Proposal - The following documents must be completed, signed and submitted as part of the Bid Proposal, prior to the bid opening:

Completed Bid Proposal consisting of:

- A. Bid Schedule
- B. Designation of Subcontractors
- C. Certifications and Affidavits:
 - 1. Non-Collusion Affidavit
 - 2. Bidder's Qualifications
 - 3. Bidder's References
 - 4. Bidder's Personnel
- D. Signature Pages
- E. Bid Guarantee (Bid Bond attached)
- F. Addendum, if any (not attached) – signature page to be signed and submitted by bidder.

Submit Prior to Notice to Proceed -The following documents must be completed, signed and submitted after approval and award of the Contract, prior to the Notice to Proceed:

- A. Agreement
- B. Payment Bond
- C. Performance Bond
- D. Insurance Endorsements
 - 1. General Liability
 - 2. Automobile Liability
 - 3. Worker's Compensation
- E. Certifications
 - 1. Workers Compensation
 - 2. Safety Requirements for Contractors and Vendors
 - 3. Drug-Free Workplace

Submit Prior to Final Acceptance - The following documents must be completed, signed and submitted prior to final acceptance:

- A. Guarantee
- B. Stop Notice Releases, if any (form not included)
- C. Record Drawings

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CITY OF SAN CARLOS

PUBLIC WORKS DEPARTMENT
600 Elm Street
San Carlos, CA 94070

BID PROPOSAL

FOR:

"Arroyo Avenue and Chestnut Street Safe Routes to School Improvements"

City Project No. C2201

IN

**CITY OF SAN CARLOS, COUNTY OF SAN MATEO
STATE OF CALIFORNIA**

NOTE: All portions of all pages included within this section, and acknowledgement of receipt of any issued addenda must be properly completed, signed, and submitted with the bid. Failure to do so may result in the bid being deemed non-responsive by the City.

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BID PROPOSAL

"Arroyo Avenue and Chestnut Street Safe Routes to School Improvements"

CITY PROJECT NO. C2201

Bid To: Honorable Mayor and City Council
City of San Carlos, City Hall
San Carlos, CA 94070

Bid From:

Bidder's Company Name: _____

Contact Person: _____

Business Street Address: _____

City, State, Zip Code: _____

Phone No.: () _____

E-mail: _____

Contractor License No.: _____

Contractor License Expiration Date: _____

Dear Mayor and Members of the City Council:

I, as bidder, declare that I have satisfied myself as to the actual conditions and requirements of the work by careful examination of the location of the proposed work, by examination of the plans and specifications including the Instructions to Bidders, and by other measures, and that after submission of the bid, I will not dispute, complain or assert that there was any misunderstanding in regards to the nature or amount of work to be done.

I hereby certify that only those parties interested in this proposal as principals are named in this proposal and that this bid is genuine, and not sham, collusion, or made in the interest or in behalf of any person not named. I have not directly or indirectly induced or solicited any other bidder, person, firm or corporation to put in a sham bid, or refrain from bidding, and have not in any manner sought by collusion to secure for myself an advantage over any other bidder.

I agree that if this proposal is accepted, I will contract with the City of San Carlos in the form of agreement proposed, will provide all bonds and insurance certificates as required by the agreement and will furnish all equipment and materials and perform all the labor required to

complete the work in accordance with the plans, specifications and other contract documents, for the unit or lump sum prices set forth in the Bid Schedule.

I have carefully checked all of the figures in the Bid Schedule and understand that the City shall not be responsible for any errors or omissions on my part in making up this bid. I agree that this bid may not be withdrawn for a period of ninety (90) calendar days from the date of the bid opening and that the City reserves the right to reject any or all bids, waive any informality in bids received, and may at its option make the award that in the judgment of the City is to the best interest of the City.

BIDDING REQUIREMENTS

The work to be done and referred to here is in the City of San Carlos, County of San Mateo, State of California, and shall be constructed in accordance with all provisions of the project specifications and project plans including: any addenda; the Instructions to Bidders, the Agreement; the Standard Specifications and Standard Plans of the California Department of Transportation, current edition; the Labor Surcharge and Equipment Rental Rates; and payment of not less than the higher of the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations or Federal minimum wage rate as predetermined by the United States Secretary of Labor in effect on the date the work is performed.

For each of the various contract items of work designated on the Bid Schedule, the bidder shall set forth a unit or lump sum price which the bidder shall then use to calculate and designate a total cost for each item of work based upon the designated estimate of the quantities of work to be done, all in clearly legible figures in the respective spaces of the Bid Schedule provided for this purpose.

The bidder shall include in the unit or lump sum prices paid for the various contract items of work full compensation for conforming to the requirements of the Contract Documents and for completing all of the work required. No additional compensation shall be granted for any additional items unless categorized and approved as extra work under the terms of the agreement.

The estimate of construction quantities set forth in the Bid Schedule is approximate only, being given only as a basis for the comparison of bids, and the City does not expressly or by implication agree that the actual amount of work will correspond with those estimated quantities. The City reserves the right to increase the amount of any class or portion of the work or to omit portions of the work as may be deemed necessary or expedient by the Engineer. There shall be no claim for damage or loss of anticipated profit for any bid item omitted in its entirety, and payment will only be made on the basis of actual quantities of work performed.

If the City accepts this proposal and the bidder fails to enter into the contract and/or fails to furnish bonds as required by the specifications with sureties satisfactory to the City within ten (10) calendar days after the bidder has received notice from the City that the contract has been awarded, the City may, at its option, determine that the bidder has breached and abandoned the contract, and thereupon, the bid security accompanying this proposal shall be forfeited and become the property of the City.

The Notice to Proceed will not be issued until after the contract has been fully executed. The contractor shall commence the work under the contract within ten (10) days following the date of the Notice to Proceed, or as otherwise specified in the project specifications or negotiated with the City, and shall diligently prosecute the project to completion within the time specified. The contract completion period is inclusive of the time needed for material delivery.

Bidder shall comply with the requirements of the California Labor Code, including sections 1770 *et seq.*, and pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per diem wages are on file at the office of the City Engineer, which copies shall be made available to any interested party upon request. The Contractor shall post a copy of such determination at the job site.

As required by Section 6705 of the California Labor Code and in addition thereto, for any excavation of any trench or trenches five feet (5') or more in depth, the Contractor shall submit to the Engineer for acceptance, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. Structural calculations prepared, stamped and signed by a Registered Engineer licensed to practice in the State of California shall accompany the plan to verify the structural safety and adequacy of the sheeting, shoring and bracing to be used on the project. No such plan shall allow any shoring, sloping or a protection system less effective than that required by the Construction Safety Orders of the State Division of Occupational Safety and Health.

In accordance with the provisions of Section 1860 of the Labor Code, prior to performing work on the Contract, each Contractor to whom a public works contract is awarded shall sign and file with the City the Worker's Compensation Certification included in the "Agreement and Agreement Forms" section of these specifications.

Bidder's attention is directed to Section 2 of the General Provisions for additional information and requirements pertaining to the submission of a bid, and which is incorporated here by reference.

Bidder's attention is directed to Section 2.13, "Required Contractor and Subcontractor Registration," of the General Provision. All contractors shall register with the Department of Industrial Relations according to Labor Code Section 1725.5.

Any protest of the proposed contract award must be submitted in writing to the City no later than 5:00 p.m. on the fifth business day following the date of the bid opening. Bidder is directed to the "Bid Protest Procedure" Section of the General Provisions for additional information.

BID SCHEDULE

Bids are to be submitted for the entire work. All applicable sales taxes, state and/or federal, and any other special taxes, patent rights or royalties are included in the prices quoted in the bid.

In the case of a discrepancy between the product of the "Estimated Quantity" and the "Unit Price" with the "Item Total", the product of the "Estimated Quantity" and the "Unit Price" shall prevail and the figure shown as the "Item Total" shall be adjusted accordingly, except as provided in cases involving (a) or (b) below:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount entered in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the item total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage-wise the unit price or item total in the Engineer's Estimate.

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

In the case of a discrepancy between the sum of the figures in the item total column (adjusted per the previous paragraphs, if necessary) and the amount set forth as the total base bid amount, the sum of the figures in the item total column shall prevail and the amount shown as the total base bid amount shall be adjusted accordingly.

BID ITEMS ARE AS FOLLOWS:

"Arroyo Avenue and Chestnut Street Safe Routes to School Improvements"

PROJECT NO. C2201

Base Bid					
Item No.	Description of Items	Estimated Qty	Unit	Unit Price	Item Total Amount
1	Mobilization	1	LS	\$	\$
2	Traffic control	1	LS	\$	\$
3	Storm Water Pollution Control	1	LS	\$	\$
4	Remove AC (for Concrete Improvements)	875	SF	\$	\$
5	Remove AC (for Road Improvements)	5,020	SF	\$	\$
6	Remove Seeded Concrete	4,418	SF	\$	\$
7	Remove PCC Curb and Gutter	145	LF	\$	\$
8	Remove PCC Curb	10	LF	\$	\$
9	Remove PCC Sidewalk and Curb Ramp	620	SF	\$	\$
10	Remove Landscape	315	SF	\$	\$
11	Remove 17" Tree	1	EA	\$	\$
12	Remove 24" Tree	1	EA	\$	\$
13	2" AC Grind	460	SF	\$	\$
14	Install PCC Curb and Gutter	142	LF	\$	\$
15	Install PCC Curb	10	LF	\$	\$
16	Install PCC Curb Ramp	460	SF	\$	\$
17	Install PCC Sidewalk	4900	SF	\$	\$
18	Install PCC Valley Gutter	815	SF	\$	\$
19	Install Landscape Match Adjacent Landscape In-Kind	390	SF	\$	\$
20	Asphalt Concrete	265	TN	\$	\$
21	Lower & Restore to Grade Manhole Frame & Cover	1	EA	\$	\$
22	Lower & Restore to Grade Water Valve	1	EA	\$	\$
23	Rectangular Rapid Flashing Beacon & PPB	1	LS	\$	\$

Base Bid					
Item No.	Description of Items	Estimated Qty	Unit	Unit Price	Item Total Amount
24	Relocate R1-1 Sign on New Post	1	EA	\$	\$
25	Detail 22	70	LF	\$	\$
26	Yellow Ladder Crosswalk	3	EA	\$	\$
27	White Yield Line	2	EA	\$	\$
28	"STOP" Marking	1	EA	\$	\$
29	"SHARROW" Marking	2	EA	\$	\$
30	Blue Hydrant Marker	1	EA	\$	\$
31	Red Curb with "SC★PD" Stenciled In White	90	LF	\$	\$
BASE BID COST					\$

Alternative A (Improvements within Arroyo School & 1722 Arroyo Avenue)					
Item No.	Description of Items	Estimated Qty	Unit	Unit Price	Item Total Amount
A1	Mobilization	1	LS	\$	\$
A2	Traffic control	1	LS	\$	\$
A3	Storm Water Pollution Control	1	LS	\$	\$
A4	Remove AC (for Road Improvements)	1,060	SF	\$	\$
A5	Remove PCC Curb and Gutter	22	LF	\$	\$
A6	Remove PCC Sidewalk	175	SF	\$	\$
A7	Remove PCC Curb	46	LF	\$	\$
A8	Install PCC Curb and Gutter	22	LF	\$	\$
A9	Install PCC Curb	46	LF	\$	\$
A10	Install PCC Sidewalk	175	SF	\$	\$
A11	Asphalt Concrete	40	TN	\$	\$
A12	Lower & Restore to Grade Water Valve	1	EA	\$	\$
A13	Lower & Restore to Grade Water Meter	1	EA	\$	\$
ALTERNATIVE A COST					\$

TOTAL BID:

(BASE BID AND ALTERNATIVE A):

TOTAL BID AMOUNT: \$ _____

Notes:

1. The Contract will be compared and awarded on the basis of the Total Bid Amount.
2. All items on the Bid must be bid. Partial bids will not be accepted.
3. The City reserves the right to reject all bids for any reason whatsoever.
4. Issuance of the "Notice to Proceed" will constitute the beginning of the Contract.

DESIGNATION OF SUBCONTRACTORS

The Contractor shall perform work equaling at least 30 percent of the value of the original total bid with the Contractor's own employees and equipment, owned or rented, with or without operators.

In accordance with the Subletting and Subcontracting Fair Practices Act, Public Contract Code sections 4100 *et seq.* (the "Subcontracting Act"), the Bidder hereby certifies and submits, as required by law, the following concerning subcontractors:

1. The portion of the work, which will be done by each such subcontractor; and
2. The name and location of the place of business of each subcontractor who will perform work or labor, fabricate a portion of the work or improvement according to detailed drawings in the project plans, or render service to the Contractor in or about the construction of the work in an amount in excess of one-half of one percent (0.5%) of the Contractor's total bid.

<u>Portion of Work to be Performed by Subcontractor</u>		<u>Subcontractor Name, Address and License Number</u> (License No. Required under AB 44)	<u>Registered with DIR?</u> ✓ check if yes
1.			
2.			
3.			
4.			
5.			
6.			
7.			

(For additional Subcontractors, attach copies of this sheet as necessary)

NOTE: THIS CERTIFICATE MUST BE COMPLETED AND RETURNED ALONG WITH THE CONTRACTOR'S BID PROPOSAL.

✓ DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION REQUIREMENT

In accordance with Labor Code Section 1725.5, all contractors and subcontractors listed on a public works bid proposal must be registered with the DIR.

NON-COLLUSION AFFIDAVIT

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

State of California)
) ss.
County of _____)

_____ (name of person signing affidavit), being first duly sworn, deposes and says under penalty of perjury under the laws of the State of California, that he or she has the right, power, legal capacity, and authority to execute this Affidavit as _____

_____ (sole owner, partner, president, secretary, etc) of _____

_____ (legal name of Bidder), the Bidder, 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 any false or sham Bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or that anyone shall refrain from Bidding; that the Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid price, or of that of any other Bidder, or to secure any advantage against the public body awarding the Contract or 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 Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, Bid depository, or to any member or agent thereof to effectuate a collusive or sham Bid.

IN WITNESS WHEREOF, the undersigned, as bidder, represent and warrant that they have the right, power, legal capacity, and authority to enter into and execute this document on behalf of the Bidder, and have executed this document by setting hereto their names, titles and signature.

(Signature of Representative of Bidder)

Subscribed and sworn to before me, a Notary Public in and for the State of California,

County of _____, this _____ day of _____, 20_____.

Signature of Notary Public: _____

My Commission expires _____, 20_____

(Seal)

NOTE: THIS AFFIDAVIT MUST BE COMPLETED AND RETURNED AS PART OF THE CONTRACTOR'S BID PROPOSAL.

BIDDER'S QUALIFICATIONS

The following statements as to the financial qualifications and experience of the Bidder are submitted as a part of this Bid and the Bidder guarantees the truthfulness and accuracy of the information. Pursuant to Public Contract Code 10165, financial statements and experience questionnaires are not public records and are not open to public inspection.

Financial Data

Reference is hereby made to the following bank or banks as to the financial responsibility of the bidder.

NAME OF BANK

ADDRESS

Experience Data

The Bidder has been engaged in the contracting business, under the present business name for _____ years. Experience in work of a nature similar to that covered in this Bid extends over a period of _____ years.

The Bidder as a Contractor has never failed to satisfactorily complete a contract awarded to him, except as follows: (Name all exceptions and reasons therefore):

Bidder's Personnel

The following is a list of key personnel including an listing of the person's knowledge, ability or trade along with a brief description of their experience. If Bidder is awarded the Contract, it is understood that the work will be directed and actively supervised by one of these persons.

List of Personnel

Knowledge/Skills

Experience

BIDDER'S REFERENCE

List three (3) major projects which the Bidder has performed comparable work within the last three (3) years.

Provide a contact person and description of the project, or other such information that will demonstrate the ability to vigorously prosecute the work.

1.

PROJECT NAME	LOCATION	YEAR COMPLETED
AGENCY CONTACT PERSON	TELEPHONE NO.	FINAL CONSTRUCTION COST
BRIEF DESCRIPTION OF THE WORK AND/OR MANNER OF EXECUTION		

2.

PROJECT NAME	LOCATION	YEAR COMPLETED
AGENCY CONTACT PERSON	TELEPHONE NO.	FINAL CONSTRUCTION COST
BRIEF DESCRIPTION OF THE WORK AND/OR MANNER OF EXECUTION		

3.

PROJECT NAME	LOCATION	YEAR COMPLETED
AGENCY CONTACT PERSON	TELEPHONE NO.	FINAL CONSTRUCTION COST
BRIEF DESCRIPTION OF THE WORK AND/OR MANNER OF EXECUTION		

SIGNATURE PAGES

The terms and conditions of the final contract when executed shall control and supersede anything herein to the contrary or inconsistent with such contract.

The bidder states that he has inspected the site of the propose work in order to satisfy himself, by personal examination, or by such other means as he prefers, of the location of the proposed work and as to the actual conditions of and at the work site. The bidder hereby offers to furnish all labor, materials, equipment, transportation, and services necessary to complete the work on this project in accordance with the Contract Documents and to complete all requirements of the Contract Documents for the sums quoted in this Bid.

Addenda:

(if any) bidder has received and examined all addenda issued during the bid period and agrees that all addenda shall be made a part of the Contract Documents. The bidder acknowledges receipt and incorporation of all impacts resulting from all addenda issued by inserting the number of each addendum below OR by signing and submitting with the bid proposal the signature page from each addendum.

Addendum Nos. _____, _____, _____, _____, _____, _____, _____, _____

Bidder's Guarantee:

In accordance with Public Contract Code Section 20170, accompanying this Bid is _____ (insert the word "Cash", "Cashier's Check", "Certified Check" or "Bidder's Bond" as the case may be) made payable to the City of San Carlos in the amount of _____ (\$ _____) equal to at least ten percent (10%) of the total amount of this bid. This amount is given as a guarantee that, in case the undersigned defaults in executing a contract and/or furnishing the necessary bonds after contract award, the said guarantee and the money payable thereon shall become and remain the property of the City as liquidated damages.

Company Profile:

The names of all persons interested in the foregoing bid as principals are as follows:
(Note: If bidder or other interested person is a corporation, state the legal name of corporation, also names of the president, secretary, treasurer and manager thereof; if partnership, state true name of firm, also names of all individual partners composing firm; if bidder or other interested person is an individual, state first and last name in full).

Firm Name: _____

Business Address: _____

Names and Titles of Company Officers:

- | | | |
|----|-------|-------|
| 1. | _____ | _____ |
| 2. | _____ | _____ |
| 3. | _____ | _____ |
| 4. | _____ | _____ |

Proposal Execution:

IN WITNESS WHEREOF, the undersigned, as bidder, represent and warrant that they have the right, power, legal capacity and authority to enter into and execute this document on behalf of the Bidder, and have executed this document by setting hereto their names, titles, and signatures. The representations made herein, including but not limited to the above contractor's license, expiration date and name of bidder, are true and correct, shall be complied with and are made under penalty of perjury.

IF SOLE OWNER, sign here:

I sign as sole owner of the business named above. _____

Social Security Number: _____

Employer Identification Number: _____

IF PARTNERSHIP, sign here:

The undersigned certify that we are partners in the business named above and that we sign this contract proposal with full authority to do so. (one or more partners sign)

Federal Tax Identification No. (EIN): _____

State Tax Identification No.: _____

IF CORPORATION, execute here:

The undersigned certify that they sign this contract proposal with full and proper authorization to do so.

Corporate name _____

By _____ (Title) _____

By _____ (Title) _____

Incorporated under the laws of the State of _____

Federal Tax Identification No. (EIN): _____

State Tax Identification No.: _____

Subscribed and sworn to before me, a Notary Public in and for the State of California,

County of _____, this _____ day of _____, 20____.

Signature of Notary Public: _____

My Commission expires _____, 20_____

(Seal)

BIDDER'S BOND

To Accompany Contract Proposal

KNOW ALL PERSONS BY THESE PRESENTS:

That we, the undersigned _____, as principal and

_____, as surety, are held and firmly bound unto the City of San Carlos as OWNER in the penal sum of TEN PERCENT (10%) of the total amount of the bid of the principal, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to OWNER a certain BID attached hereto and hereby made a part hereof to enter into a contract in writing, for the **Arroyo Avenue and Chestnut Street Safe Routes to School Improvements, No. C2201.**

NOW, THEREFORE

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BIDS including all required bonds for faithful performance and labor and material, as well as all required evidence of insurance) then this obligation shall be void, otherwise the same shall remain in force and effect.

In the event the City brings suit upon this Bond, surety shall pay reasonable attorney's fees and costs incurred by the City in such suit.

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

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, this day and year first set forth.

By: _____ (L.S.)
(Principal)

(Seal)

By: _____
(Surety) (Seal)

Subscribed and sworn to before me, a Notary Public in and for the State of California, County of

_____, this _____ day of _____, 20_____.

Signature of Notary Public: _____ (Seal)

My Commission expires _____, 20_____

IMPORTANT: Surety companies executing BONDS must be authorized to transact Surety insurance in the State of California. If Contractor is Partnership, all partners should execute BOND.

AGREEMENT AND AGREEMENT FORMS

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AGREEMENT FOR PUBLIC PROJECTS

This Agreement is made and entered into as of _____ by and between the City of San Carlos hereinafter called "CITY" and _____ hereinafter called "CONTRACTOR."

RECITALS

This Agreement is entered into with reference to the following facts and circumstances:

- A. That CITY desires to engage CONTRACTOR to provide a product and/or services to the CITY;
- B. That CONTRACTOR is qualified to provide the product and/or services to the CITY and;

THEREFORE, the CITY has elected to engage CONTRACTOR upon the terms and conditions as hereinafter set forth.

1. Services. The services to be performed by CONTRACTOR under this Agreement are described in Exhibit A, the CONTRACTOR'S bid proposal which is, by this reference, incorporated herein and made a part hereof as though it were fully set forth herein.

Performance of the services specified in said Exhibit is hereby made an obligation of CONTRACTOR under this Agreement, subject to any changes that may be made subsequently hereto upon the mutual written agreement of the said parties.

Where in conflict, the terms of this Agreement supersede and prevail over any terms set forth in Exhibit A.

2. Term; Termination. (a) The term of this Agreement shall commence upon the date hereinabove written and shall expire upon the date enumerated in Exhibit A, delivery of the product or completion of performance of services hereunder by CONTRACTOR, whichever date shall first occur. (b) Notwithstanding the provisions of (a) above, CITY may terminate this Agreement without cause by giving written notice not less than thirty (30) days prior to the effective date of termination, which date shall be included in said notice. CITY shall compensate CONTRACTOR for any product delivered and/or for services rendered, and reimburse CONTRACTOR for costs and expenses incurred, to the date of termination, calculated in accordance with the provisions of paragraph 3. In ascertaining the services actually rendered to the date of termination, consideration shall be given both to completed work and work in process of completion. Nothing herein contained shall be deemed a limitation upon the right of CITY to terminate this Agreement for cause, or otherwise to exercise such rights or pursue such remedies as may accrue to CITY hereunder.

3. Compensation; Expenses; Payment. CITY shall compensate CONTRACTOR for all products supplied or services performed by CONTRACTOR hereunder as shown in Exhibit A attached hereto and by this reference incorporated herein.

Notwithstanding the foregoing, the combined total of compensation and reimbursement of costs payable hereunder shall not exceed the sum of _____\$, as provided in the approved bid documents or in this Agreement unless additional amounts have been authorized in the acceptance of the bid and approved in advance of supplying the product, performing the services or incurring the costs and expenses by CITY's City Manager (for contracts less than \$175,000 or

authorized by City Council action for contracts \$175,000 or more by motion duly made and carried).

Compensation and reimbursement of costs and expenses hereunder shall be payable upon CONTRACTOR meeting contract milestones as defined in Exhibit A. Billing shall include an itemized statement, briefly describing by task and labor category or cost/expense items billed.

4. Contractor affirms that its employees and contractors comply with California Prevailing Wage Law.
5. Additional Services. In the event the public project requires the delivery of additional products or performance of additional services not otherwise included within Exhibit A, such products or services must be authorized in advance by CITY's City Manager (for contracts less than \$175,000 or authorized by City Council action for contracts \$175,000 or more. Such amendment to this Agreement shall include a description of the project or services to be performed thereunder, the maximum compensation and reimbursement of costs and expenses payable therefore, the time of performance thereof, and such other matters as the parties deem appropriate. Any additional services causing the total contract price to exceed \$175,000, shall require approval by the City Council. Except to the extent modified by written amendment, all other terms and conditions of this Agreement shall be deemed incorporated in each such amendment.
6. Records. CONTRACTOR shall keep and maintain accurate records of products delivered or of all time expended in performing services and costs and expenses incurred relating thereto. Said records shall be available to CITY for review and copying during regular business hours at CONTRACTOR's place of business or as otherwise agreed upon by the parties.
7. Authorization. This Agreement becomes effective when endorsed by both parties in the space provided below.
8. Reliance on Specialized Professional Skill of CONTRACTOR. CONTRACTOR represents that it has the necessary professional skills to perform the services required and the CITY shall rely on such specialized skills of the CONTRACTOR to do and perform the work. In performing services hereunder CONTRACTOR shall adhere to the standards generally prevailing for the performance of services similar to those to be performed by CONTRACTOR hereunder.
9. Documents. All documents, plans, drawings, renderings, and other papers, or copies thereof, as finally rendered, prepared by CONTRACTOR pursuant to the terms of this Agreement, shall, upon preparation and delivery to CITY, become the property of CITY
10. Relationship of Parties. It is understood that the relationship of CONTRACTOR to the CITY is that of an independent contractor and all persons working for or under the direction of CONTRACTOR are its agents or employees and not agents or employees of the CITY.
11. Schedule. CONTRACTOR shall adhere to the schedule set forth in Exhibit A; provided, that CITY shall grant reasonable extensions of time for the delivery of products or performance of services occasioned by governmental reviews of CONTRACTOR's work product or other unavoidable delays; provided, further, that such unavoidable delay shall not include strikes, lockouts, work stoppages, or other labor disturbances conducted by, or on behalf of, CONTRACTOR's officers or employees.

CONTRACTOR acknowledges the importance to CITY of timely delivery of products or services and agrees to put forth its best professional efforts to perform in a manner consistent with that schedule.

12. Indemnity. CONTRACTOR shall indemnify, defend, and hold harmless City, its officers, employees, agents and volunteers from and against all liability, loss, damage, expense, and cost (including, without limitation, reasonable legal counsel fees, expert fees and all other costs and fees of litigation) of every nature arising out of or in connection with CONTRACTOR's negligence, recklessness, or willful misconduct in the performance of work hereunder, or its failure to comply with any of its obligations contained in this Agreement, except such loss or damage caused by the active negligence or willful misconduct of the City. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this Agreement.

Nothing herein contained shall be construed to require CONTRACTOR to indemnify CITY, its officers, employees, agents and volunteers against any responsibility or liability in contravention of Section 2782 of the California Civil Code.

13. Insurance. CONTRACTOR shall acquire and maintain Workers' Compensation, employer's liability, commercial general liability, owned and non-owned and hired automobile liability insurance coverage relating to CONTRACTOR's services to be performed hereunder covering CITY's risks in form subject to the approval of the City Attorney and/or CITY's Risk Manager. The minimum amounts of coverage corresponding to the aforesaid categories of insurance per insurable event shall be as follows:

<u>Insurance Category</u>	<u>Minimum Limits</u>
Workers' Compensation	Statutory minimum.
Employer's Liability	\$1,000,000 per accident for bodily injury or disease. Contractor shall submit to City a Waiver of Subrogation endorsement in favor of City, its officers, agents, employees, and volunteers.
Commercial General Liability	\$2,000,000 per occurrence for Liability bodily injury, personal injury, and property damage, including without limitation, blanket contractual liability and coverage for explosion, collapse and underground property damage hazards. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. Coverage must be at least as broad as Insurance Services Office form CG 00 01.
Automobile Liability	\$2,000,000 per accident for bodily injury and property damage (coverage required to the extent applicable to CONTRACTOR's vehicle usage in performing services hereunder).

Concurrently with the execution of this Agreement, CONTRACTOR shall furnish CITY with certificates and copies of information or declaration pages of the insurance required hereunder and, with respect to evidence of commercial general liability and automobile liability insurance coverage, original endorsements:

- (a) Precluding cancellation or reduction in per occurrence limits before the expiration of thirty (30) days (10 days for nonpayment) after CITY shall have received written notification of cancellation in coverage or reduction in per occurrence limits by first class mail;
- (b) Contractor's general liability policies shall be primary and non-contributory, and be endorsed using Insurance Services Office form CG 20 10 to provide that City and its officers, officials, employees, and agents shall be additional insureds under such policies. An endorsement providing completed operations coverage for the additional insured, ISO form CG 20 37, is also required.

Claims Made Policies

If any of the required policies provide claims-made coverage:

1. The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the CONTRACTOR must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

Verification of Coverage

CONTRACTOR shall furnish the CITY with original certificates and amendatory endorsements effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the CITY before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CITY reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

Waiver of Subrogation

CONTRACTOR hereby grants to CITY a waiver of any right to subrogation which any insurer of said CONTRACTOR may acquire against the CITY by virtue of the payment of any loss under such insurance. This provision applies regardless of whether or not the CITY has requested or received a waiver of subrogation endorsement from the insurer.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the City.

Special Risks or Circumstances

CITY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Coverage

It is a requirement under this agreement that any available insurance proceeds broader than or in excess of the specified minimum insurance coverage requirements and/or limits shall be made available to the Additional Insured and shall be (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policy, whichever is greater.

CONTRACTOR shall maintain insurance as required by this contract to the fullest amount allowed by law and shall maintain insurance for a minimum of **five years** following completion of the project. In the event contractor fails to obtain or maintain completed operations coverage as required by this agreement, the city at its sole discretion may purchase the coverage required and the cost shall be paid by CONTRACTOR.

Primary and Non-Contributory Coverage

The Additional Insured coverage under the CONTRACTOR's policy shall be "primary and non-contributory" as will not seek contribution from the CITY insurance or self-insurance and shall be at least as broad as CG 20 01 04 12.

Excess Insurance

The limits of insurance required in this agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of CITY before the CITY insurance or self-insurance shall be called upon to protect it as a named insured.

14. SUBCONTRACTORS. CONTRACTOR agrees to include with all subcontractors in their subcontracts the same requirements and provisions of this agreement including the indemnity and Insurance requirements to the extent they apply to the scope of the Subcontractors' work. Subcontractors hired by CONTRACTOR agree to be bound to CONTRACTOR and CITY in the same manner and to the same extent as CONTRACTOR is bound to CITY under the Contract documents. Subcontract shall agree to include these same provisions in any agreement with a sub-subcontractor. CONTRACTOR shall require all subcontractors to provide a valid certificate of insurance and the required endorsements included in the agreement prior to commencement of any work and will provide proof of compliance to the CITY.

Subcontractor shall agree to be bound to CONTRACTOR and CITY in the same manner and to the same extent as CONTRACTOR is bound to CITY under the Contract Documents. Subcontractor shall further agree to include the same requirements and provisions of this agreement, including the indemnity and Insurance requirements, with a Sub-subcontractor to the extent they apply to the scope of the Sub-subcontractors' work. A copy of the CITY Contract Document Indemnity and Insurance provisions shall be furnished to the subcontractor upon request.

15. WORKERS' COMPENSATION. CONTRACTOR certifies that he/she/it is aware of the provisions of the Labor Code of the State of California which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and CONTRACTOR certifies that he will comply with such provisions before commencing the performance of the work of this agreement.

16. NON-DISCRIMINATION. The CONTRACTOR hereby assures that it will comply with Subchapter VI of the Civil Rights Act of 1964, 42 USC Section 2000 (e)(17), to the end that CONTRACTOR will not exclude any person from participation in, be denied the benefits of, or be otherwise subject to discrimination from any project, program, or activity supported by this Agreement, based on the grounds of race, color, national origin, sex, disability, age, or religion,. CONTRACTOR shall comply with its EEO Certification (Form PW-7). In addition, CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The CONTRACTOR will take affirmative action to insure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, advancement, demotion, transfer, recruitment, or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The CONTRACTOR shall at all times be in compliance with the requirements of the Federal Americans With Disabilities Act (Public Law 101-336) which prohibits discrimination on the basis of disability by public entities. The CONTRACTOR agrees to post in conspicuous places available to employees and applicants for employment any notices provided by the CITY setting forth the provisions of this non-discrimination clause.
17. Notice. All notices required by this Agreement shall be given to the CITY and CONTRACTOR in writing, by first class mail, postage prepaid, addressed as follows:
- CITY: City of San Carlos
 600 Elm Street
 San Carlos, CA 94070
 Attention: City Manager
- CONTRACTOR: _____
 Address _____
 Phone _____
 Attention: _____
18. Non-Assignment. This Agreement is not assignable either in whole or in part.
19. Amendments. This Agreement may be amended or modified only by written agreement signed by both parties.
20. Business Registration. CONTRACTOR agrees to comply with Chapter 5.04 of the Municipal Code and pay all fees required to be paid.
21. Validity. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.
22. Governing Law. This Agreement shall be governed by the laws of the State of California and any suit or action initiated by either party shall be brought in the County of San Mateo, California. In the event of litigation between the parties hereto to enforce any provision of the Agreement, the unsuccessful party will pay the reasonable attorney's fees and expenses of litigation of the successful party.
23. Mediation. Should any dispute arise out of this Agreement, the parties shall meet in mediation and attempt to reach a resolution with the assistance of a mutually acceptable mediator. Neither party shall be permitted to file legal action without first meeting in mediation and making a good faith attempt to reach a mediated resolution. The costs of the mediator, if any, shall be paid equally by the parties. If a mediated settlement is reached neither party shall be deemed the prevailing party for purposes of the settlement

and each party shall bear its own legal costs. If a party refuses or fails to participate in mediation in good faith prior to filing a lawsuit, then that party shall be barred from recovery of attorneys fees and costs of suit.

24. Conflict of Interest. CONTRACTOR may serve other clients, but none who are active within the City of San Carlos or who conduct business that would place CONTRACTOR in a "conflict of interest" as that term is defined in State law.
25. Entire Agreement. Each party acknowledges that this agreement, the exhibits hereto, and the documents incorporated by reference herein constitute the complete agreement and exclusive statement of the terms and conditions between the parties, which supercedes and merges all prior proposals, understandings and all other agreements, verbal and written, between the parties relating to the subject matter of this agreement. This agreement may not be modified or altered except by written instrument duly executed by both parties.

[SIGNATURE PAGE TO FOLLOW]

SIGNATURE PAGE

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed on the date first above written by their respective officers duly authorized in that behalf.

CITY OF SAN CARLOS:

Dated: _____

Jeff Maltbie, City Manager

ATTEST:

Dated: _____

Crystal Mui, City Clerk

APPROVED AS TO FORM:

Dated: _____

Gregory J. Rubens, City Attorney

CONSULTANT/CONTRACTOR/VENDOR:

I acknowledge that I have full authority to execute this agreement on behalf of the Consultant/Contractor/Vendor, and have read, understand, and agree to comply with the provisions of this Agreement, including the Insurance and indemnity requirements set forth herein.

Dated: _____

EXHIBIT A

CONTRACTOR'S BID PROPOSAL

[To be attached]

EXHIBIT B

This **INSURANCE COVERAGE FORM** modifies or documents insurance provided under the following:

Named Insured: _____ **Effective Work Date(s):** _____

Description of Work/Locations/Vehicles: _____

ADDITIONAL INSURED: City of San Carlos
600 Elm Street, San Carlos, CA 94070
Attention: _____

Contract Administrator

Endorsement and Certificates of Insurance Required		
The Additional Insured, its elected or appointed officers, officials, employees and volunteers are included as insureds with regard to damages and defense of claims arising from: (Check all that apply)		
<input type="checkbox"/> General Liability: (a) activities performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, (c) premises owned, leased occupied or used by the Named Insured, and/or (d) permits issued for operations performed by the Named Insured. {Note: MEETS OR EXCEEDS ISO Form # CG 20 10 11 85}		
<input type="checkbox"/> Auto Liability: the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the Additional Insured, its elected or appointed officers, officials, employees or volunteers.		
<input type="checkbox"/> Other:		
Certificates of Insurance Required (no endorsement needed) (Check all that apply)		
<input type="checkbox"/> Workers Compensation: work performed by employees of the Named Insured while those employees are engaged in work under the simultaneous directions and control of the Named Insured and the Additional Insured.		
<input type="checkbox"/> Professional Liability:		

PRIMARY/NON-CONTRIBUTORY: This insurance is primary and is not additional to or contributing with any other insurance carried by or for the benefit of Additional Insureds.

SEVERABILITY OF INTEREST: The insurance afforded by this policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the insurer's limit of liability.

PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS: Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the Additional Insured, its elected or appointed officers, officials, employees, or volunteers.

CANCELLATION NOTICE: The insurance afforded by this policy shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days' prior written notice (ten (10) days if canceled due to non-payment) by regular mail return receipt requested has been given to the Additional Insured. Such notice shall be addressed as shown above.

WAIVER OF SUBROGATION: The insurer(s) named above agree to waive all rights of subrogation against the CITY/Public Works Department, its elected or appointed officers, officials, agents, volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the CITY/Public Works Department.

Nothing herein contained shall vary, alter or extend any provision or condition of the Policy other than as above stated.

SIGNATURE OF INSURER OR AUTHORIZED REPRESENTATIVE OF THE INSURER

I, _____ (print/type name), warrant that I have authority to bind the above-named insurance company and by my signature hereon do so bind this company.

SIGNATURE OF AUTHORIZED REPRESENTATIVE (original signature required)

DATE ISSUED

ORGANIZATION: _____ **TITLE:** _____

ADDRESS: _____ **TELEPHONE:** () _____

RESOLUTION OF CONSTRUCTION CLAIMS

Any public works claims arising under this contract which the Contractor wishes to assert against the Governing Agency shall be governed by California Public Contract Code Section 9204. Claims which do not exceed three hundred seventy-five thousand dollars (**\$375,000**) are also subject to the provisions of Article 1.5 of the California Public Contract Code (commencing with Section 20104). Pursuant to California Public Contracts Code Section 9204, claims shall be resolved as follows:

(d) (1) (A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.

(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2) (A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that

WHEREAS, The City of San Carlos (hereinafter referred to as "Owner") and _____
_____ (hereinafter referred to as "Principal") have entered into a
contract for the construction of the **Arroyo Avenue and Chestnut Street Safe Routes to
School Improvements, Project No. C2201** and

WHEREAS, under the terms of said contract Principal is required to furnish a bond
securing payment of the claims to which reference is made in Section 3248 of the Civil Code;

NOW, THEREFORE, we, the Principal, and _____
_____, as Surety, are held and firmly bound unto the
"Owner" in the penal sum of _____
_____/100 Dollars (\$ _____)

lawful money of the United States, being not less than one hundred percent (100%) of the
amount payable by the terms of the contract, for the payment of which sum well and truly to be
made we bind ourselves, our heirs, executors, administrators and successors, jointly and
severally, firmly by these presents.

The condition of this obligation is such that if said Principal or any of its subcontractors
fails to pay any of the persons named in Section 3181 of the Civil Code, or amounts due under
the Unemployment Insurance Code with respect to work or labor performed under the contract,
or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board
from the wages of employees of the Principal or its subcontractors pursuant to Section 18806 of
the Revenue and Taxation Code, with respect to such work and labor that the Surety will pay for
the same, in an amount not exceeding the amount hereinabove set forth and also will pay, in
case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the court. We
hereby state and confirm that we are a "California admitted insurer" as defined by the California
Department of Insurance.

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

This bond is given to comply with Sections 3247 and 3248 of the Civil Code. The liability
of the Principal and Surety hereunder is governed by the provisions of said Code, all acts
amendatory thereof, and all other statutes referred to therein, including Section 3225 of the Civil
Code.

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 there under or the
specifications accompanying the same shall in any ways affect its obligation 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, the above bounded parties have executed this instrument under their seals this _____ day of _____, 20__, the name and corporate seal of each corporate body being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

NOTE:

To be signed by
Principal and Surety
and acknowledgment
and nortarial seal

(Principal)

By _____

By _____

(Surety)

By _____

By _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

WHEREAS, The City of San Carlos (hereinafter referred to as "Owner") has entered into a contract with _____ (hereinafter referred to as "Principal") for the construction of the Arroyo Avenue and Chestnut Street Safe Routes to School Improvements, Project No. C2201, and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond of faithful performance of said Contract;

NOW, THEREFORE, we, the Principal, and _____
_____, as Surety, are held and firmly bound unto the
"Owner" in the penal sum of _____
_____/100 Dollars(\$ _____)

lawful money of the United States, being a sum equal to the total amount payable under the contract, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounded Principal shall in all things stand to and abide by and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, on his 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, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

As a condition precedent to satisfactory completion of the said contract, the above obligations to the amount of _____ and-00/100 Dollars (\$ _____) being not less than ten percent (10%) of the total amount payable under the contract, shall hold good for a period of two (2) years after the completion and acceptance of said work, during which time if the above Principal shall fail to make full, complete and satisfactory repair and replacement or totally protect the "Owner" from loss or damage made evident during said period of two (2) years from the date of acceptance of said work, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligations in the said sum of _____ and-00/100 Dollars (\$ _____) shall remain in full force and virtue; otherwise the above obligation shall be void.

And the said Surety, for value received, 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 there under of the Specifications accompanying the same shall in any ways 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. We hereby state and confirm that we are a "California admitted insurer" as defined by the California Department of Insurance.

In the event that the "Owner" or its successors or assigns, shall be the prevailing party in an action brought upon this bond, then, in addition to the penal sum hereinabove specified, we

agree to pay to the "Owner" for its successors or assigns, a reasonable sum on account of attorney's fees in such action, which sum shall be fixed by the court.

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

NOTE:

To be signed by
Principal and Surety
and acknowledgment
and nortarial seal

(Principal)

By _____

By _____

(Surety)

By _____

By _____

WORKERS' COMPENSATION CERTIFICATION

Labor Code Section 1861

The Bidder hereby certifies as follows:

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

Name of Contractor

Signature of Contractor Representative

Dated: _____

NOTE: THIS CERTIFICATION MUST BE COMPLETED AND RETURNED BY THE SUCCESSFUL BIDDER PRIOR TO THE START OF CONSTRUCTION.

CERTIFICATION OF SAFETY REQUIREMENTS FOR
CONTRACTORS AND VENDORS

California Code of Regulations, Title 8, Section 1509

To work as a contractor or vendor with the City of San Carlos, your organization is required to certify that it has an active on-the-job written Injury and Illness Prevention Program. This program is essential to make the job as accident-free as possible and to comply with Federal and State Safety Standards.

The undersigned hereby certifies that his/her organization has an active written Injury and Illness Prevention Program, as required by Cal-OSHA under California Code of Regulations, Title 8, General Industry Safety Orders, Section 3203 and/or Construction Safety Orders, Section 1509, that ensures compliance with, and enforcement of, current minimum Cal-OSHA Safety Standards, and that his/her organization has knowledge of these standards that are applicable to the job operations. This includes a program for ensuring employees have been trained to recognize hazards of their job.

The undersigned also hereby certifies that his/her organization has an active written Hazard Communication Program with evidence that all employees have been trained in safe use and handling of chemicals on the job site, and a file will be made available for review by the City of San Carlos of each Material Safety Data Sheet (MSDS) on those chemicals kept on the site.

Name of Contractor

Signature of Contractor Representative

Dated: _____

**NOTE: THIS CERTIFICATION MUST BE COMPLETED AND RETURNED BY THE SUCCESSFUL BIDDER
PRIOR TO THE START OF CONSTRUCTION.**

DRUG-FREE WORKPLACE CERTIFICATION

The bidder _____, hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The contractor will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:
 - (a) The dangers of drug abuse in the workplace,
 - (b) The person's or organization's policy of maintaining a drug-free workplace,
 - (c) Any available counseling, rehabilitation and employee assistance programs, and
 - (d) Penalties that may be imposed upon employees for drug abuse violations.
3. Provide as required by Government Code Section 8355(c), that every employee who works on the proposed contract or loan:
 - (a) Will receive a copy of the company's drug-free policy statement, and
 - (b) Will agree to abide by the terms of the company's statement as a condition of employment on the contract or loan.

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor to the above described certification. I am fully aware that this certification, executed on the date below, is made under penalty of perjury under the laws of the State of California.

Dated: _____, 20____.

Contractor's Signature

NOTE: THIS CERTIFICATION MUST BE COMPLETED AND RETURNED BY THE SUCCESSFUL BIDDER PRIOR TO THE START OF CONSTRUCTION.

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION (Optional)

Public Contract Code Section 22300

This Escrow Agreement is made and entered into by and between _____

whose address is _____ hereinafter called

"Owner," _____ whose address is

_____ hereinafter called "Contractor" and _____

whose address is _____ hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and Contractor for _____ in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of _____, and shall designate the Contractor as the beneficial owner.

(2) The Owner shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time that the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days written notice to the Escrow Agent from the owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

(8) Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this agreement and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:

On behalf of Contractor:

On behalf of Escrow Agent:

Title

Title

Title

Name

Name

Name

Signature

Signature

Signature

Address

Address

Address

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

Owner:

Contractor:

Title

Title

Name

Name

Signature

Signature

GUARANTEE

(To Be Submitted Prior to Project Acceptance)

FOR THE
City of San Carlos
San Carlos, CA 94070

**Arroyo Avenue and Chestnut Street Safe Routes to School Improvements, Project No.
C2201**

We hereby guarantee that the work we have installed for the above named project has been done in accordance with the Plans and Specifications and that the work installed will fulfill the requirements of the guarantee.

We agree to repair or replace any or all of our work, together with any other adjacent work which may be displayed in so doing that may prove to be defective in its workmanship or material within a period of two (2) years from the date of acceptance of the above-named work by the City of San Carlos, without any expense whatsoever to the City of San Carlos, ordinary wear and tear and unusual abuse or neglect excepted.

Within fifteen (15) days after being notified in writing by the City of San Carlos of any defects in the work, we agree to commence and prosecute with due diligence all work necessary to fulfill the terms of this guarantee, and to complete the work within a reasonable period of time, and in the event of our failure to so comply, we collectively and separately, do hereby authorize said City of San Carlos to proceed to have such work done at our expense and we will honor and pay the cost and changes therefore upon demand.

Dated: _____

By: _____

**NOTE: THIS CERTIFICATION MUST BE COMPLETED AND RETURNED BY THE SUCCESSFUL BIDDER
PRIOR TO PROJECT ACCEPTANCE.**

GENERAL PROVISIONS

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GENERAL PROVISIONS

SECTION 1 – TERMS AND DEFINITIONS

1.01 Terms – Unless otherwise stated, the words “directed, required, permitted, ordered, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory,” or words of like meaning, refer to actions, expressions, and prerogatives of the Engineer.

1.02 Definitions – Except as amended or supplemented, whenever in the Contract Documents the following terms are used, the intent and meaning shall be interpreted as follows:

Agreement - The written contract documents between the City and the Contractor covering the performance of the work.

As Shown, As Indicated, As Detailed - Where these words or words of similar import, are used, it shall be understood that reference to the drawings accompanying these specifications is made unless stated otherwise. Where "As Directed", "As Permitted", "Approved", or words of similar import, are used, it shall be understood that the direction, requirements, permission, approval, or acceptance of the Engineer is intended unless stated otherwise. As used herein, "Provide" shall be understood to mean "Provide Complete in Place" that is, "Furnish and Install", and "Install" shall mean the installation complete in place of an item of equipment furnished by the City.

ASTM - American Society for Testing and Materials specifications.

AWWA - American Water Works Association and its Standard Specifications.

Addenda - Written or graphic instruments issued prior to the opening of bids which clarify, correct or change the bidding documents or the Contract Documents.

Bid - The offer or proposal of the bidder submitted on the prescribed forms setting forth the prices for the work to be performed.

Bid Forms - Includes the Bid Schedule, Designation of Subcontractors, Bidders Statement of Responsibility, Bidder's Non-Collusion Affidavit, Bid Security, and all other information requested by the Bid Proposal Documents.

Bidder – Any individual, firm, partnership, corporation, or combination thereof submitting a bid for the work, acting directly or through a duly authorized representative. After the City awards the Contract, the term “Bidder” shall be equivalent to the term “Contractor” for the purpose of identifying the Contractor's rights and obligations under the Contract Documents.

Bidding Documents - The Notice Inviting Sealed Proposals, Instruction to Bidders, Bid Proposal forms and Bidders Bond.

Bonds - Bid, performance, labor and material, and warranty bonds and other instruments of security.

Change Orders – A written order by the Engineer to the contractor making changes in the plans or specifications which is signed by the Contractor and City authorizing an addition, deletion or revision in the work, with possible adjustment in the contract price or the contract time, issued on or after the effective date of the Agreement. If the change involves items for which there is no contract unit price, the order shall so state and stipulate that the changes shall be performed as extra work or work omitted.

City - The City of San Carlos acting through the City Council or any other board, body, official(s) to which or to whom the power belonging to the City Council has been properly delegated.

City Regulations - All written laws, rules, and policies established by the City, including those set forth in the General Plan, San Carlos Municipal Code, ordinances, resolutions, policies, procedures, and City design documents (including the Standard Specifications, design standards, and relevant Public Facility Master Plans).

Code – The terms Government Code, Labor Code, etc., refer to codes of the State of California.

Contract – See definition for “Agreement”.

Contract Documents - See Agreement, Section 2.1, “List of Contract Documents and Precedence”.

Contract Drawings or Plans - All drawings which may have been prepared by or in behalf of the City, as a basis for proposals, when duly signed and made a part of this contract by incorporation or reference, all drawings submitted in pursuance of the terms of this contract by the successful bidder with their proposal and by the contractor to the City and reviewed by the Engineer; and all drawings submitted by the Engineer to the contractor during the progress of the work as provided for herein.

Contract Price - The total amount of money for which contract is awarded and as amended.

Contract Time - The number of days or the date stated in the contract as the duration for completing work.

Contract Unit Price - The Contractor’s original bid for a single unit of an item of work in the proposal.

Contractor - An individual, partnership, corporation, developer, joint venture, subdivider or other legal entity entering into a contract or agreement with the City to perform the work covered by this contract, and their authorized agents or legal representatives. After the City awards the Contract, the term “Contractor” shall be equivalent to the term “Bidder” for the purpose of identifying the Contractor’s rights and obligations under the Contract Documents.

Day or Days - Unless herein otherwise expressly defined, shall mean a calendar day of twenty-four hours each.

Defective Work - Work that is unsatisfactory, faulty, omitted, incomplete, deficient, or does not conform to the requirements of the Contract Documents, directives of the Engineer, or requirements of any inspection, reference standard, test, or approval specified in the Contract Documents, or has been damaged prior to the Engineer’s recommendation of final acceptance. See General Provisions Section 6.01, “Materials and Workmanship”.

Directive – Any document, signed by the City, with instruction to the Contractor pertaining to the completion of a project objective; including, but not limited to responses to requests for information, clarifications, letters of instruction, the notice of award and the notice to proceed.

Engineer - The Engineer duly and officially appointed by the City to represent the City and to observe the work of construction under this contract, acting personally or through agents or assistants duly authorized by the Engineer, such agents or assistants acting within the scope of the particular duties entrusted to them.

Extra Work - Performance or furnishing of work or material found necessary for the proper completion of the improvements, the payment of which is not covered by any item of the bid schedule and for which no means of payment, direct or indirect, has been provided in the contract.

Final Completion - The point at which work has been completed in accordance with the contract documents, plans and specifications to the satisfaction of the Engineer and there are no items of work remaining to be completed. See General Provisions, Section 8.22, “Final Completion”.

Force Account Work – Force account work is a method of compensation utilized to pay for extra work typically needed to overcome unanticipated work, resulting from the project work scope, necessary to complete the project work scope that cannot be well defined prior to the start of extra work. General Provision, Section 5.08 “Change Orders” establishes the specific methods of compensation for labor, materials and equipment used to perform the force account work.

Greenbook - The Standard Specifications and Plans written and promulgated by Public Works Standards, Inc., entitled “Standard Specifications for Public Works Construction”, and “Standard Plans for Public Works Construction”, current editions.

Hold Harmless - Agreement by one party to bring no claim for negligence, breach of contract, indemnity or otherwise against another party. See Agreement Section 17, “Indemnification”.

Inspector - The engineering or technical inspector(s) duly authorized or appointed by the Engineer or City, limited to the particular duties entrusted to them.

Liquidated Damages - The amount of dollars assessed for each and every calendar day required to complete the contract in excess of the contract time. See General Provisions, Section 8.18, “Liquidated Damages”.

Losses - Any and all losses, costs, liabilities, claims, damages, and expenses, including, without limitation, reasonable attorneys’ fees and expenses.

Manual of Uniform Traffic Control Devices (MUTCD) or California Manual of Uniform Traffic Control Devices (CAMUTCD) – The latest edition of the California Manual of Uniform Traffic Control Devices.

Modification – Modifications to the Agreement are executed by change orders, and may only be issued after the effective date of the contract.

Notice - Any notice allowed or required to be given by the City may be given by the Engineer.

Notice of Award – The written notice by the City to the successful Bidder stating that upon completion of required conditions the City will execute the contract.

Notice to Proceed – A written notice by the City to the Contractor authorizing the Contractor to proceed with the work and fixing the date on which the contract time will start.

Plans - The contract plans and/or supplemental drawings approved by the Engineer which show the location, character, dimensions and details of the work.

Project - The total construction of which the work performed under the Contract Documents may be the whole or a part and which may include construction by the City or by separate Contractors.

Proposal - The offer of a bidder when submitted on the proposal form, properly signed and guaranteed.

Reference Specifications - Those standards, rules, method of tests or analysis, codes, and specifications of other agencies, engineering societies, or industrial associations referred to in the Contract Documents. These refer to the current edition or amendments in effect at the time of advertising the project unless specifically referred to by edition, volume or date. Unless otherwise stated in the plans or specifications, the reference specification in effect shall be that edition which was in effect on the date of the Notice Inviting Bids.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the Contractor to illustrate some portion of the work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information

prepared by a supplier and submitted by the Contractor to illustrate material or equipment for some portion of the work. See General Provisions, Section 4.19, "Submittals".

Special Provisions - Any provisions which supplement or modify these standard specifications.

Specifications – The information, directions, provisions and requirements pertaining to the work, and contained herein including Special Provisions, Technical Specification, General Provisions, those administrative subsections of Caltrans' Standard Specification that are specifically referenced in this Contract and the non-administrative sections (Section 10 through 95) of the Caltrans' Standard Specification dated 2010.

Standard Plans - The Standard Details of the City of San Carlos, current edition, including the Parks and Streetscape Standard Plans, current edition, identifying construction standards for the various items of work indicated and/or referred to on the plans, specifications or special provisions.

Standard Specifications - The Standard Specifications of the City of San Carlos.

Standard Specifications for Public Works Construction - The Standard Specifications for Public Works Construction, "Greenbook", current edition.

State - State of California.

State Standard Plans - The Standard Plans of the Department of Transportation of the State of California, (Caltrans') Standard Plans dated 2010.

State Standard Specifications - The Standard Specifications of the Department of Transportation of the State of California Caltrans' Standard Specification dated 2010.

Subcontractor - Any 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. Unless otherwise specifically provided, the term Subcontractor includes Subcontractor of any tier, suppliers, manufacturers and distributors. See Section 3.07 of the General Provisions.

Substantial Completion – When the work (or a specified part thereof) has progressed to the point where it is sufficiently complete and in accordance with the Contract Documents. See General Provisions, Section 8.20, "Substantial Completion".

Superintendent – The executive representative of the contractor responsible for the site supervision of the work at all times during progress, authorized to receive and fulfill instructions from the Engineer and to accept orders for changed and extra work.

Surety - Any individual, firm or corporation, bound with and for the Contractor for the acceptable performance and completion of the work, and the satisfaction of all obligations incurred.

Surveyor - A land surveyor licensed in the State of California.

Unbalanced Bid - See Materially Unbalanced Bid and Mathematically Unbalanced Bid.

Work - The construction and services required by the Contract Documents as amended by contract modifications, whether completed or partially completed, including all labor, materials, equipment, tools, and services provided or to be provided, by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project

Working Day – Any day except Saturday, Sunday, Holidays observed by the City, or days in which the Contractor is entitled to an excusable delay. Holidays observed by the City are: Thanksgiving, day after Thanksgiving, Christmas Day, New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, and Veteran's Day. See General Provisions, Section 8.19, "Delays and Extension of Time". In addition, at the option of the Engineer, the contractor may be required

to suspend all work and activities during the City's annual Holiday Closure in late December and early January of each year. No work shall be done during this suspension except such work as is necessary for the proper care and protection of work already performed, or except in case of an emergency, and in any case, only with prior written permission of the Engineer. This suspension of work will be at no cost to the City. Working days will not be assessed during this suspension of work.

SECTION 2 – PROPOSAL REQUIREMENTS AND CONDITIONS

2.01 General - Bidders may obtain complete sets of the Contract Documents, including the proposal forms to be used for bidding, at the location designated in the Notice to Bidders. Bidders shall use complete sets of Contract Documents in the preparation of bids. The City makes copies of the Contract Documents available, on the above terms, for the sole purpose of obtaining Bids for the work and does not confer a license or grant permission for any other use of the Contract Documents.

2.02 Proposal Forms – The portion of the Contract Documents entitled “Bid Proposal” focuses the Bidders attention on the requirements for submitting a proposal, including the Notice to Bidders, and the Bid Proposal Forms.

Bids are required for the entire work described herein and shall be submitted on the blank forms prepared by the City and provided herein. The Bid Proposal submitted to the City shall consist of the completed Bid Schedule, Designation of Subcontractors, Bidders Statement of Responsibility, Bidder's Non-Collusion Affidavit, Bidder's Qualifications, Bidders References, Signature of Bidder, Bid Guaranty, and all other information requested by the Bid Proposal documents.

All proposals shall type or print legibly in ink the proposed prices both in writing and in figures and shall be signed, with address included, by the bidder or the bidder's authorized representative. Corrections must all be individually initialed by the Bidder. Bidder shall not modify or qualify the Bid Forms in any manner.

The Bid Forms shall be signed by a person or persons legally authorized to bind the Bidder to the Contract. The individuals signing each document shall warrant that they are authorized to bind the legal entity of the Bidder. Proposals made by individuals must show the individual's signature and post office address; if made by a firm or partnership and the signature of one or all of the partners must be shown. Proposals submitted by corporations must show the name and post office address of the corporation, the name of the state, under whose laws the corporation is chartered, and the signature and title of the person signing on behalf of the corporation.

2.03 Qualifications of Bidders - Each bidder shall be licensed as specified in the Notice to Bidders and in accordance with the provisions of Chapter 9, Division 3, of the Business and Professions Code, State of California, and shall be skilled and regularly engaged in the general class or type of work called for under this contract.

It is the intention of the City to award a contract only to a bidder who is able to furnish satisfactory evidence that they have the requisite experience and ability and that the bidder has sufficient capital, facilities and plant to enable them to prosecute the work successfully and promptly, and to complete it within the time set forth in the contract.

In determining the degree of responsibility to be credited to a bidder, the City will weigh any evidence indicating the bidder, or personnel guaranteed to be employed in responsible charge of the work, has satisfactorily performed other contracts of like nature and magnitude.

2.04 Rejection of Proposals Containing Alterations, Erasures, or Irregularities - Proposals may be rejected if they show any alterations of form, additions not called for, conditional or alternative bids, incomplete bids, irregularities of any kind, or corrections and erasures without initials by the Bidder.

2.05 Submission of Bids - All Bid Forms, including all documents required to be submitted with the Bid, shall be enclosed in a sealed opaque envelope. The envelope shall be clearly marked on its face with the Bidder's name and address, and the notation “SEALED BID ENCLOSED, CITY OF SAN CARLOS”, with an identification of the project name and number as identified in the Notice to Bidders. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope. Oral, telephonic, facsimile, telegraphic, or electronically transmitted Bids are invalid and will not be accepted.

Bids may be mailed or delivered by messenger. It is the Bidder's responsibility alone to ensure that the Bid is received prior to the bid opening deadline at the place specified in the Notice to Bidders. Whether or not bids are opened exactly at the time fixed in the public notice inviting bids, any bid received after that time shall be returned unopened.

2.06 Approximate Estimate - The quantities listed in the bid schedule are approximate only, supplied as a general indication of the scope of work and to be used as a basis for comparing bids. The City does not expressly or by implication agree that the actual amount of work will correspond therewith, and reserves the right to increase or decrease the amount of any class or portion of the work, or to delete any portions of the work in their entirety, from the quantities listed on the bid schedule, as may be deemed necessary or advisable by the Engineer.

2.07 Examination of Plans, Specifications and Work Site - Bidder shall examine carefully the plans, specifications, proposal and contract forms, and the physical site of the work contemplated, regardless of if a site walk or pre-bid meeting has been scheduled by the City or not. It will be assumed that the bidder has investigated and is aware of the conditions to be encountered in carrying out the proposed work, and is fully satisfied as to the scope, character, quality, quantity and requirements of the proposed work, and the submission of a bid will be an acknowledgement of that assumption.

The bidder shall receive no additional compensation for obstacles or difficulties due to surface or subsurface conditions actually encountered. Where investigations of surface or subsurface conditions have been made by the City in respect to foundation or other structural design, and that information is shown in the plans, said information is included only for the convenience of bidders. The City assumes no responsibility whatsoever as to the sufficiency or accuracy of borings, or of the log of test borings or other investigations or tests, or of the interpretation thereof; there is no guaranty, warranty or representation, express or implied, that the conditions indicated thereby in fact exist or are representative of those existing throughout the work. Such information shall be used as a basis for bids at the bidder's own and sole risk; making such information available to bidders is not to be construed in any way as a waiver of the other provisions of this paragraph, and bidders must satisfy themselves through their own investigation as to the surface and subsurface conditions to be encountered at the site. By submitting a Proposal, the Bidder has certified that they have examined all items indicated in Section 2.07, "Examination of Plans, Specifications, and Site of the Work."

Each proposal shall be enclosed in a sealed envelope and endorsed as specified in the Notice Invited Sealed Proposals. Bidders are warned the proposals containing irregularities of any kind, including erasures, omissions, conditions, alterations, or additional proposals may be rejected.

2.08 Withdrawals of Proposals - Any proposal may be withdrawn at any time prior to the time fixed in the Notice Inviting Sealed Proposals for the opening of bids, provided that a request in writing, executed by the bidder or their duly authorized representative, for the withdrawal of such bid, is filed with the City. The withdrawal will not prejudice the right of a bidder to file a new proposal.

2.09 Proposal Guaranty - Each proposal shall be accompanied by either a certified check, cashier's check, or bidder's bond of a surety company acceptable to the City in an amount not less than ten percent (10%) of the bid amount, and shall be made payable to the City.

2.10 Disqualification of Bidders - More than one proposal from an individual, firm or partnership, a corporation, or an association under the same or different names will not be considered. Reasonable grounds for believing that any bidder is interested in more than one proposal for the work will be the cause of the rejection of all proposals in which such bidder is interested. If there is a reason to believe that collusion exists among the bidders, none of the participants in such collusion will be considered. Proposals in which the prices obviously are unbalanced may be rejected.

2.11 Bid Protest Procedures - Any protest of the proposed contract award shall be submitted in writing to the City Clerk no later than 5:00 p.m. on the fifth (5th) business day following the date of the bid opening. If the fifth day falls on a weekend or holiday, the last day of the protest period shall be the first working day following the fifth day.

The protest must include the name, address, and telephone number of the person representing the protesting party. In addition,

- (a) The party filing the protest must have submitted a bid for the Project. A Subcontractor of a party filing a bid for the project may not submit a bid protest.
- (b) The protest must contain a complete statement of the basis for the protest, and refer to the specific portion of the Contract Documents or the specific statute that forms the basis for the protest.
- (c) The party filing the protest must concurrently transmit a copy of the protest to the proposed awardee.

Any bidder's failure to fully comply with these procedures shall constitute a waiver of any right to further pursue a bid protest, including filing of a challenge of the award pursuant to the California Public Contract Code, filing of a claim pursuant to the California Government Code, or filing of any other legal proceedings.

The City shall review all timely protests prior to the award of contract. The City shall not be required to hold an administrative hearing to consider any protests, but may do so at its option. The City Council or the City Manager as designee if the authority to award the contract has already been granted by the City Council, may either reject the protest and award the project to the lowest responsible bidder or accept the protest and award the project to the next lowest responsible bidder. Nothing in this section shall be construed as a waiver of the City Council's right to reject all bids.

2.12 List of Subcontractors - In accordance with the provisions of Section 4104 of the Public Contract Code, each proposal shall list the name, address and license number of each subcontractor to whom the bidder proposes to sublet portions of the work. A subcontractor is defined as one who contracts with the contractor to furnish materials and labor, or labor only, for performance of work. Subcontractors shall be listed on the form provided in the Bid Proposal.

2.13 Required Contractor and Subcontractor Registration - In accordance with Labor Code Section 1725.5 and 1771.1, the contractor and all subcontractors shall be registered with the California Department of Industrial Relations (DIR) prior to the bid opening. All 2nd and lower tier subcontractors working on the project shall be registered with the Department of Industrial Relations prior to the work being performed. An inadvertent error in listing a subcontractor who is not registered may not be grounds for considering the bid non-responsive providing that any of the provision in Labor Code Section 1771.1(c) are satisfied.

SECTION 3: REVIEW OF BIDS, CONTRACT AWARD AND EXECUTION

3.01 Public Bid Opening and Initial Review - Bids which have been submitted in accordance with the requirements of the Bidding Documents, and which are received on or before the bid deadline will be opened publicly, and the dollar amounts of each bid shall be read aloud.

The City shall have the right to reject all bids. The City shall have the right to reject any bid not accompanied by the required bid security or any other item required by the Bidding Documents, or a bid which is in any other way incomplete or irregular. The City shall have the right to waive irregularities in a bid, and to award the Contract to the Lowest Responsible Bidder (as determined by the City), only if the irregularities are non-material and inconsequential.

3.02 Determination of Lowest Responsible Bidder - Criteria for determining low bid in all contracts with the City involving an expenditure of \$5,000.00 or more shall be determined as the "Lowest Monetary Bidder" on the basis of the Engineer's approximate estimate of the quantities of work to be done as set forth in the Bid Schedule, in accordance with the calculation criteria set forth on the bid.

After the Lowest Monetary Bidder has been determined, the Engineer shall review that Bidder's bid in order to determine whether or not that Bidder is the "Lowest Responsible Bidder." The term Lowest Responsible Bidder shall mean the Lowest Monetary Bidder whose bid is responsive, and who is responsible to perform the work, as required by the Contract Documents.

The term "responsive" is defined by California law, but generally means that the bid has been prepared and submitted in accordance with the Bidding Requirements. The term "responsible" is defined by California law, but generally means that the Bidder is able to demonstrate that it possesses: (1) the capacity to perform the work required by the Contract Documents with respect to financial strength, resources available, and experience; and (2) the integrity and trustworthiness to complete performance of the work in accordance with the Contract Documents.

The City will make its determination of responsibility based upon information submitted by Bidders contained in the Bidders Qualifications and Bidders References included in the Bid Forms and, if necessary, through interviews with previous cities, clients, design professionals, or subcontractors with whom the Bidder has worked. In determining whether or not a Bidder is responsible, the City may consider the following factors in relation to the work to be performed for this Project:

- (a) Demonstrated financial strength including, but not limited to, resources available, bonding capacity, and available insurance.
- (b) Demonstrated safety record including, but not limited to, Experience Modification Rate.
- (c) Successful completion of projects of similar scope and size. In reviewing this factor, the City may consider elements including, but not limited to, contract amount of completed projects, experience on public works projects, experience implementing prevailing wage certified payroll requirements, timeliness of performance and, if necessary, evaluation of the Bidder's work by previous cities, clients, design professionals, or subcontractors.
- (d) Sufficiency of contract administration and construction management systems including, but not limited to, proposed scheduling tools, proposed subcontract forms, proposed progress payment applications, and proposed certification of payroll documents.
- (e) History of claims, litigation, termination or disqualification from projects.

If the Engineer finds that the Lowest Monetary Bidder submitted a responsive Bid and that the Bidder is responsible, then that Bidder shall be deemed the apparent "Lowest Responsible Bidder," and the Engineer shall report the findings to the City Council.

If the Engineer finds that the Lowest Monetary Bidder's bid is not responsive, or that the Lowest Monetary Bidder is not responsible, then the Engineer may review the responsiveness and responsibility

of the next Lowest Monetary Bidder. If the Engineer finds that the next Lowest Monetary Bidder is responsive and responsible, then that next lowest Bidder shall be deemed the apparent "Lowest Responsible Bidder," and Engineer shall report its findings as recommendations to the City Council. This process may continue until the Engineer finds the Lowest Monetary Bidder which is also responsive and responsible.

In the event that one or more Low Monetary Bidders are found by the Engineer to be non-responsive or non-responsible, those Bidders will be given notice and a reasonable opportunity to present additional relevant evidence to the Engineer for consideration, within five (5) working days after the Bidder receives the notice.

All findings by the Engineer shall be reported as recommendations to the City Council. The City Council reserves the right to reject any or all Bids, and to waive any irregularity. No Bid shall be binding upon the City until after the Agreement is signed by both the Contractor and the City. If the City Council determines that it is in the City's best interest to award the Agreement, a Notice of Award shall be sent to the Lowest Responsible Bidder as determined by the City Council. The City Council's decision shall be final.

The City may investigate the responsibility and qualifications of all Bidders to whom the award is contemplated for a period not to exceed ninety (90) calendar days after the Bid opening, during which time no bid shall be withdrawn by the Bidders. The ninety (90) day review period may be extended upon the written request by the Engineer and written approval by the affected Bidder.

3.03 Notice of Award – Should the City decide to proceed with the award of contract the City shall issue a Notice of Award to the lowest responsible bidder.

3.04 Contract Execution - Within fifteen (15) calendar days after receipt of the Notice of Award, the bidder shall submit to the City two (2) originals of the signed agreement, the required contract bonds and certificates of insurance. If the bidder fails or refuses to enter into a contract to do the work, then the proposal guaranty accompanying the bid shall be forfeited to the City. After the Bidder has properly submitted these documents, the City will execute the Agreement and issue a Notice to Proceed.

3.05 Status of Contractor - The right of general supervision by the City shall not make the contractor an agent of the City, and the liability of the contractor for all damages to persons or to public or private property arising from the contractor's execution of the work shall not be lessened because of such general supervision.

3.06 Assignment - No agreement or portion thereof maybe assigned without consent of the Council, except that the Contractor may assign money due which will accrue to them under the Agreement. If given written notice, such assignment will be recognized by the City to the extent permitted by law, but any assignment of money shall be subject to all proper setoffs and withholdings in favor of the City and to all deductions provided for in the Agreement. All money withheld, whether assigned or not, shall be subject to being used by the City for completion of the work, should the Contractor be in default.

Any attempt to assign or delegate the Agreement without the written consent of the City shall be void and of no force and effect. Consent by the City to one assignment shall not be deemed to be consent to any subsequent assignment.

3.07 Recognition of Subcontractors - No subcontractors will be recognized as such, and all persons engaged in the work of construction will be considered as employees of the contractor and their work shall be subject to the provisions of the contract, including specifically these general stipulations, the specifications and the contract drawings.

3.08 Return of Bid Security - Within ten (10) working days after the execution of the Agreement, the City will return the proposal guarantees accompanying the proposals that are not to be considered in making the award. All other proposal guarantees will be held until the Agreement has been

fully executed, after which, they will be returned to the respective bidders whose proposals they accompanied.

3.09 Forfeiture of Proposal Guaranty - If Bidder does not properly execute the contract and submit the acceptable bonds, insurance and certifications within the specified time; this shall be just cause for the annulment of the award and the forfeiture of the proposal guaranty to the City. The City may then award the contract to next Lowest Responsible Bidder. The forfeited proposal guaranty may be utilized by the City in accordance with Public Contract Code, Sections 20170 through 20174.

3.10 Contract Bonds - Before execution of the contract by the City, the Contractor shall file with the City surety bonds satisfactory to the City in the amounts, and for the purposes, noted below. Said bond shall be on the form furnished by the City herein.

- (a) *Performance Bond* - The contractor shall furnish and bear the cost of a bond of a surety company acceptable to the City, which bond is conditioned upon the faithful performance of all covenants and stipulations under this contract within the time prescribed, in a manner satisfactory to the City, and that all materials and workmanship will be free from original or developed defects. The amount of the bond shall be one hundred percent (100%) of the total contract price; as such sum is set forth in the agreement.

Said bond shall be on the form furnished by the City herein.

As a condition precedent to satisfactory completion of this contract, an amount equal to ten percent (10%) of the estimated contract cost shall hold good for the period specified in said bond after completion and acceptance of the work by the City.

- (b) *Labor and Material Bond* – The contractor shall furnish and bear the cost of a bond of a surety company acceptable to the City in the sum not less than one hundred percent (100%) of the total contract price, as such sum is set forth in the agreement, for the payment in full of all persons, companies, or corporations who perform labor upon or furnish materials to be used in the work under this contract, in accordance with the provisions of Section 4200 to 4208, inclusive (Chapter 3, Division 5), of the Government Code of the State of California, and any acts amendatory thereof. The bond shall be maintained by the Contractor in full force and effect until the work is accepted by the City and until all claims for materials and labor are paid.

Said bond shall be on the form furnished by the City herein.

- (c) *Warranty Bond* - The Contractor shall furnish a warranty bond in the amount of ten percent (10%) of the final contract price (total cost including change orders) to guaranty his work for two (2) years after acceptance of the work by the City Council.

Bonds shall be duly executed by a responsible corporate Surety, licensed and authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California. Each bond shall be signed by both the Contractor and Surety and the signature of the authorized agent of the Surety shall be notarized.

The Contractor shall pay all bond premiums, costs and incidentals. Should any bond become insufficient due to an increase in the contract amount, the Contractor shall obtain supplemental bonding within ten (10) days.

Should any Surety at any time be unsatisfactory to the City, notice will be given the Contractor to that effect. No further payments shall be deemed due or will be made under the Agreement until a new Surety shall qualify and be accepted by the City.

Changes in the work, or extensions of time, made pursuant to the Agreement, shall in no way release the Contractor or Surety from their obligations. The requirement for notifying the Surety of such changes or extensions shall be waived by the Surety.

3.11 Notification of Surety Companies - The surety companies shall familiarize themselves with all conditions and provisions of this contract and they waive the right of special notification of any change or modification of this contract or of extension of time, or of decreased or increased work, or of the cancellation of the contract, or of any other act(s) by the City or City's authorized agents, under the terms of this contract, and failure to so notify the aforesaid surety companies of changes shall in no wise relieve the surety companies of their obligation under this contract.

3.12 Power of Attorney - Attorneys-in-fact who sign bid bonds or contract bonds must file a certified and effectively dated copy of their Power of Attorney with each bond.

3.13 Insurance Requirements - Contractor shall provide at their own cost and expense from contract award date to acceptance of the work covered by the contract:

- (a) Workmen's Compensation and Employer's Liability Insurance of not less than the amount shown in the Special Provisions for all of their employees to be engaged in the work under this contract. Should any such work be sublet, the contractor shall require each of their subcontractors at any tier similarly to provide Workmen's Compensation and Employer's Liability Insurance, all in strict compliance with Federal and State laws.
- (b) Personal Injury, Bodily Injury and Property Damage Liability Insurance (including automobiles, products and/or completed operations coverage) and Aircraft and Watercraft Bodily Injury Liability and Property Damage Liability Insurance if contractor uses owned or non-owned water aircraft in their operation, with Personal Injury and Bodily Injury (including death resulting therefrom) of not less than a combined Personal Injury and Property Damage Liability limit of not less than the amount shown in the Special Provisions. Should any work covered by the contract be sublet contractor shall require each of their subcontractors of any tier similarly to provide the aforesaid coverages.
- (c) All Risk (excluding Earthquake and Flood) Builder's Risk Insurance in an amount not less than the value of any work under this contract, except for buried pipelines and appurtenances which need not be included in the insurance value. Under the policies of insurance described above, each policy shall contain the provision for thirty (30) days written notice submitted by registered mail from the insurance carrier(s) to the City prior to cancellation or reduction in coverage.

3.14 Special Requirements - Under the policy of insurance described in Section 13.13-b, the policy shall contain the following provisions:

- (a) The City and the City's officers, representatives, agents and employees shall be named as additional insureds.
- (b) Endorsement providing that such insurance is primary insurance and no insurance of the additional insureds shall be called on to contribute to a loss.
- (c) Endorsement providing that such insurance shall not contain any exclusion regarding loss or damage to property caused by explosion or resulting from collapse of buildings or structures or damage to property underground, commonly referred to as "XCU" hazards.
- (d) Standard cross-liability clause covering personal injury, bodily injury (including death resulting therefrom), and property damage.

3.15 Builders Risk Insurance - Under the policy of insurance, the policy shall contain the following provisions:

- (a) The City shall be included as insured.
- (b) Losses shall be payable to the contractor and City as their interest may appear.
- (c) Deductible amounts of all losses covered by insurance shall be borne by the contractor.

3.16 Certificates - Prior to beginning work, contractor shall furnish certificates satisfactory to the City as to contents and carriers of such insurance.

3.17 Legal Address of Contractor - Contractor's address as shown in the proposal, as well as such office or headquarters the contractor establishes at the site of work, hereby are designated as addresses to which drawings, samples, notices, letters, articles, or other communications to the contractor may be mailed or delivered. The delivery at either of these places of any item or communication from the City or agents thereof to the contractor shall be deemed sufficient service of such delivery. Contractor's address as shown in the proposal may be changed at any time by notice in writing from the contractor to the City. Nothing herein contained shall be deemed to preclude or render inoperative the service of any drawing, sample, notice, letter, or other article of communication to or upon the contractor personally.

3.18 Office of Contractor at Site - During the performance of the contract, Contractor shall maintain a suitable office at the site of work which shall be the headquarters of a representative authorized to receive drawings, instructions or other communications or articles from the City or City's agents; any such thing given to said representative or delivered at the contractor's office at the site of work in when absent shall be deemed to have been given to the contractor. Contractor shall maintain a complete set of plans and specifications at the site office whenever work is in progress.

SECTION 4 - SCOPE AND CONTROL OF WORK

4.01 Work to be Done – The work to be done consists of furnishing all labor, materials, tools, equipment and services necessary to complete the project, as further described in the Notice to Bidders of these Specifications, and as necessary to leave the site in a neat and finished condition with all equipment properly installed and working to the satisfaction of the Engineer.

While the City has endeavored to accurately represent in the plans and specifications the physical conditions which may affect the cost of the proposed work, the City does not warrant the completeness or accuracy of such information. It is the Contractor's responsibility to ascertain the existence of any such conditions affecting the cost of the work, which would have been disclosed by reasonable examination of the site.

Conclusions pertaining to any test, investigation, statement or estimate of fact incorporated in the plans and specifications shall be considered by the Contractor to be a recommendation only. The Contractor may request equal access to the underlying or background information to arrive at an independent opinion thereon, including the determination of how reliable might be any conclusion appearing in (or inferred from) the information. The Contractor may not rely upon "record drawings" or similar final or accepted drawings or maps constructed on public or private property. Such information may be used for reference only. Actual locations and depths shall be determined by field investigations by the Contractor.

No oral or telephonic agreement or conversation with any officer, agent, or employee of the City or the Engineer, either before or after execution of the contract, shall affect or modify any of the terms or obligations contained in any of the contract documents.

4.02 Plans and Specifications - It is the intent of the Plans and Specifications to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. For convenience, the Specifications are arranged in several sections, but such separation shall not be considered as the limits of the work required by any separate trade. The terms and conditions of such limitations are wholly between the Contractor and the project subcontractors. In general, the Special Provisions, General Provisions, and other sections of the specifications indicate the responsibilities of the Contractor and the quality of material and methods of workmanship. The plans indicate dimensions, quantities, positions, and various other details of construction.

Any work, materials or equipment that may be reasonably inferred from the Contract 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 the work, materials or equipment, such words shall be interpreted in accordance with that meaning. See General Provisions, Section 6.03, "Trade Names or Equals".

Subheadings and titles printed on the drawings in these General Provisions, in the specifications, and elsewhere in the contract documents, are inserted for the convenience of reference only, and shall not be taken or considered as having any bearing on the interpretation thereof.

4.03 References to Standards and Codes - 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 the opening of bids (or, on the Effective Date of the Agreement if there were no bids), except as may be otherwise specifically stated. However, no provisions of any referenced standard specifications, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of City, Contractor or Engineer, or any of their consultants, agents or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to the Engineer, or any of the Engineer'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 for the Contractor.

4.04 Authority of the Engineer – The City has the final authority in all matters affecting the work. Within the scope of the Agreement, the Engineer has the authority to enforce compliance with the Plans and Specifications and the Contractor shall promptly comply with instructions from the Engineer. The decision of the Engineer is final and binding on all questions relating to: quantities; acceptability of materials furnished and work performed; equipment; work execution, rate of progress or sequence of work; and interpretation of the Plans, Specifications, or other drawings. This shall be precedent to any payment under the Agreement, unless otherwise ordered by the City.

4.05 Contract Documents and Precedence - The Contract Documents consist of the documents listed below, in order of precedence. If there is a conflict between component parts of the Contract Documents, the document highest in precedence controls.

- (a) Change Orders.
- (b) Project Directives.
- (c) Permits issued by other agencies.
- (d) Permits issued by the City.
- (e) Agreement and required agreement forms – Bid Bond, Faithful Performance and Labor and Materials Bonds, Warranty Bond, Insurance Endorsements, Worker's Compensation Certification.
- (f) Project Specifications, in the following order - Addenda, Bid Proposal including all Bid Proposal Forms, Notice Inviting Sealed Proposals, Special Provisions, Technical Provisions, Exhibits to the Proposal, and General Provisions.
- (g) Project Plans and Drawings.
- (h) City Standard Specifications.
- (i) City Standard Plans.
- (j) Reference Specifications, in the following order – State of California Department of Transportation (Caltrans) State Standard Specifications (current edition), Standard Specifications for Public Works Construction "Greenbook".
- (k) Reference Plans, in the following order – State of California Department of Transportation (Caltrans) State Standard Plans (2010 edition), Standard Plans for Public Works Construction (2010 edition).

All of the individual components of the Contract Documents are intended to be complementary and what is required by one shall be binding as if required by all. Interpretation of a disputed meaning or intent of the plans and specifications shall be made initially by the Engineer in accordance with the application of the order of precedence. Any final decision required regarding precedence and the clarification of discrepancies in the Contract Documents shall be made by the Engineer.

4.06 Interpretation of Specifications and Drawings - The specifications and the contract drawings are intended to be explanatory of each other. Any work indicated in the contract drawings and not in the specifications, or vice versa, is to be executed as if indicated in both. Should it appear that the work to be done, or any of the matters relative thereto are not sufficiently detailed or explained in these contract documents, including the contract drawings, the contractor shall apply in writing to the Engineer for such further explanations as may be necessary and shall conform thereto as part of this contract so far as may be consist with the terms of the contract. Should any doubt or question arise respecting the true meaning of the specification, the Engineer shall make the final decision.

4.07 Figured Dimensions - Figured dimensions on the contract drawings shall in all cases be given precedence over scaled dimensions. If figured dimensions do not correspond to scaled dimensions, contractor shall request Engineer to verify the accuracy of the figured dimensions. It shall be the responsibility of the contractor to ascertain the correct scale of all contract drawings that are in possession, including those which may have been reduced for reproduction.

4.08 Errors or Discrepancies - If the contractor, in the course of the work, discovers any discrepancies between the drawings and the conditions of the ground, or any errors or omissions in the drawings or in the layout given by stakes, points or instructions, shall have the duty to inform the Engineer immediately in writing, and the Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the contractor's risk.

4.09 Drawings to be Furnished by Contractor - As soon as practical after the execution of this contract, the contractor shall supply drawings of devices to be furnished hereunder as are called for herein or as are required by the Engineer to make clear the details of construction and to demonstrate fully that all materials and equipment comply with the intent and provisions of this contract. Unless otherwise herein specified, such drawings shall be submitted to the Engineer for review. Should the Engineer take exception with any drawings furnished by the contractor, the contractor shall make the revisions required, and resubmit them to the Engineer for review. After a satisfactory review by the Engineer, these drawings shall become a part of this contract and the work shall be done in conformity therewith. No such work shall be begun or devices purchased until the review of the drawings detailing such items have been completed. The review of the drawings shall not relieve the contractor of responsibility, or waive or modify any of the provisions or requirements of this contract.

The Engineer's review of drawings submitted by the contractor will be for, and will cover, only generally conformity to the plans and specifications and will not constitute a blanket approval of all dimensions, quantities and details of the material or equipment shown by (nor shall review relieve the contractor of responsibility for errors contained in) such drawings.

All shop drawings submitted by the various subcontractors which require review of the City's representative shall first be sent to the contractor who shall keep a record of the drawing numbers and the date of their receipt.. Contractor shall submit the drawings to City's representative for review in time to prevent delays in delivery of materials.

Contractor shall thoroughly check all such shop drawings for measurements, size of member, materials and details to make sure they conform to the intent of the plans and specifications. Drawings found to be inaccurate or otherwise in error shall be returned by the contractor to the subcontractor for correction before they are submitted by the contractor to the City's representative for review.

4.10 Additional Drawings by City - Contract drawings are intended to be comprehensive and to indicate in detail the scope of the work. However, the Engineer may furnish the contractor additional drawings during the progress of the work in order to clarify and define in greater detail the intent of the contract drawings or specifications. Contractor may request such detailed drawings by submitting a request in writing to the Engineer at least two (2) weeks in advance of the time they are required.

4.11 Lines and Grades - All work under this contract shall be constructed to the lines, grades and elevations shown on the contract drawings. Contractor shall establish the lines, grades and elevations unless it is otherwise specified in the Special Provisions.

4.12 Record Documents – The Contractor shall keep at the worksite a record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directives, Field Orders and written interpretations and clarifications. These record documents together with all approved submittals, samples and shop drawings will be available to the Engineer as a reference at all times. Upon completion of the work, these record documents will be delivered to Engineer.

4.13 Record Drawings –The Contractor shall prepare and update a master “as-built” set of red ink-lined plans, to be reviewed and approved by the Engineer at the end of every month. Drawings shall contain information showing where actual installation differs from that shown on the original drawings, where underground or concealed features are found noting alignment (to 0.25') and elevation (to 0.1'), field changes or deletions of work, and any additional work by change order. Upon the project's completion, and prior to the project's acceptance, the Contractor shall submit to the City the completed as-built record Drawings on one (1) set of full size prints prepared on 22" x 34" paper.

Record Drawings are full size drawings (Plans) which marked up during construction to delineate the actual in-place constructed conditions. Record Drawings shall be provided by the Contractor for this Project. Requirements for Record Drawings as specified elsewhere shall supplement the requirements specified herein.

4.14 Reuse of Documents - Neither the Contractor nor any Subcontractor or supplier or other person or organization performing or furnishing any of the work under a direct or indirect agreement with the City shall have any title or rights to any of the Drawings, Specifications or other documents (or copies thereof) which bear the seal of the design engineer. Such documents shall not be reused on extensions of the project or for any other project without written consent of the City and the design engineer.

4.15 Subsurface Data – If completed, all soil and soil test data, water table elevations, and soil analyses included or referred to in the Contract Documents apply only at the location of the test holes and to the depths indicated. If completed, soil test reports for test holes which have been drilled are available for inspection at the office of the Engineer. Any additional subsurface exploration shall be done by Bidders or the Contractor at their own expense.

The elevation of the water table indicated by soil test reports is that which existed on the date the test hole was drilled. It is the Contractor's responsibility to determine and allow for the possibility of differing ground water elevations on the date of the project's construction. A difference in elevation between ground water shown in soil boring logs and ground water actually encountered during construction will not be considered as a basis for extra work.

4.16 Right-of-Way – Acquisition of right-of-way or permanent easements necessary for the improvements as shown on the plans will be provided by the City. Unless otherwise provided, the Contractor shall make any required arrangements, pay for, and assume all responsibility for acquiring, using, and disposing of additional work areas, easements, and temporary facilities required. Contractor shall identify and hold the City harmless from all claims for damages resulting from such actions.

4.17 Removal of Defective and Unauthorized Work - Should the Contractor deliberately proceed with any portion or phase of construction which is obviously incorrectly indicated in the contract plans or documents, he shall be responsible for any corrective measures required to make adequate repairs or adjustment. This shall include any work done beyond the lines and grades shown on the plans or established by the Engineer, or any extra work done without written authority.

All work that has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed for such removal or replacement. If the Contractor fails to remedy rejected work within ten (10) working days after written demand, the City may, without prejudice to other remedies, sell such materials at auction or at private sale, or otherwise dispose of such material. The Contractor shall be entitled to the proceeds of such sale, if any, in excess of the costs and damages for which the Contractor is liable to the City, including reasonable attorneys' fees and expenses and compensation for the City's services and expenses.

4.18 Acceptance of Defective Work - The City shall have the option, at its sole discretion and by written notice to the Contractor, to accept defective work instead of requiring its removal or correction, in which case the contract sum shall be reduced by an amount equal to the difference between the value to the City such work would have were it complete, correct, and in conformity with the Contract Documents and the value to the City of such defective work. Such option shall be exercised solely by written notice to the Contractor and shall not be implied from any act or omission by the City or the Engineer. If the remaining payments and retention are insufficient to cover the amount of the reduction of the contract sum, the Contractor shall promptly pay to the City the amount of any such deficiency.

4.19 Submittals - Within ten (10) working days following the Notice to Proceed, the Contractor shall provide a detailed list for review and approval of all individual submittals required to be submitted under the contract. The list shall reference the specification section and paragraph that requires the submittal along with the date the Contractor plans to transmit the submittal to the City for review.

Unless otherwise requested by the Engineer, submittals shall be provided electronically in .pdf

format at least twenty-eight (28) calendar days prior to the approval being necessary for the work. Submittals shall be transmitted with a Submittal Cover Letter form as approved by the Engineer. Large submittals consisting of reports, oversized or colored pages, full sized shop drawings, manuals contained in binders, or submittals in other forms not easily reproduced shall be provided in hard copy format with six (6) copies.

For items requiring shop drawings, no materials shall be furnished, and no work shall be performed, until the drawings have been favorably reviewed. Shop drawings shall be of a size and scale to clearly show all necessary details.

After review by the City of each of the Contractor's submittals, the material will be returned to the Contractor marked with actions defined as follows:

- (a) NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the work not covered in this submission. Does not constitute acceptance of deletion of specified or required items not shown in a partial submission.
- (b) MAKE CORRECTIONS NOTED - The same as item (a), except that minor corrections as noted by the City shall be made by the Contractor. No resubmission is required.
- (c) REVISE AND RESUBMIT - Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the City.
- (d) REJECTED - Submitted material does not conform to plans and Specifications in major respects. This material is not expected to be resubmitted.
- (e) SUBMIT SPECIFIED ITEM - Submittals not reviewed by the City but received for record purposes.

Favorable review of the shop drawings by the Engineer is interpreted to mean that there is substantial and acceptable conformance with the contract plans, but details of design may not necessarily be checked for adequacy or accuracy. Such acceptance shall not relieve the Contractor from the responsibility for errors or omissions in the shop drawings or from deviations from the contract documents unless such errors, omissions, or deviations were specifically called to the attention of the Engineer in writing. The Contractor shall be responsible for the correctness of the shop drawings, for shop fits and field corrections, and for the results obtained by the use of such plans.

4.20 Substitutions – Proposed requests by the Contractor for changes in products, materials, equipment, and methods of construction required under the Contract Documents after the award of contract are considered "requests for substitutions." For proposed "or equal" substitutions, attention is directed to General Provision Section 6.03, "Trade Names or Equals."

Each request for substitution shall be prepared and presented to the City in accordance with the procedures for submittals, except that the following additional information shall be provided.

- (a) An explanation of the advantages to the City for accepting the substitution.
- (b) A comparison of significant qualities of the proposed substitution with those specified.
- (c) A list of changes or modifications needed to other parts of the work and to construction performed by the City and separate Contractors, that will be necessary to accommodate the proposed substitution.
- (d) A statement indicating the substitution's effect on the Construction Schedule compared to the Baseline Construction Schedule without acceptance of the substitution. Indicate the effect of the proposed substitution on overall contract time.
- (e) Cost information, including a proposal of the net change, if any, in the Contract Sum.
- (f) Certification that the substitution is equal to or better in every respect to that required by Contract Documents, and that it will perform adequately in application indicated. Include

Contractor's waiver of rights to additional payment or time extensions, that may be necessary because of the substitution's failure to perform adequately.

No extension of time will be allowed through failure of the Contractor to either transmit requests for substitution sufficiently in advance of the work, or on account of processing time outside the time limits noted.

4.21 Construction Staking Lines and Grades - Unless otherwise stated in the Special Provisions, the Contractor shall provide, preserve, and replace if necessary, all of the necessary construction stakes required for the construction of the project. Grades for underground conduits will be set on the ground surface and shall then be transferred to the bottom of the trench by the Contractor.

Stakes or marks will be set by a California Licensed Surveyor or a California Registered Civil Engineer to establish the lines and grades required for the completion of the work as specified in the Contract Documents. It shall be the Contractor's responsibility to notify the Engineer of any discrepancies found between field grades and notes shown within the Contract Documents.

Contractor shall furnish horizontal control and cut sheets to the Engineer immediately upon the setting of construction or boundary markers. Upon completion, all work shall conform to the lines, elevations, and grades shown on the plans.

4.22 Inspection of the Work - All work is subject to inspection and approval of the Engineer. Unless otherwise stated in the specifications, the City shall perform all required inspections. The Contractor shall notify the Engineer before noon of the working day before inspection is required. Unless otherwise authorized, work shall be done only in the presence of the Engineer. Any work done without proper inspection will be subject to rejection. The Engineer shall at all times have access to the work during its construction at shops and yards as well as the project site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with the Contract Documents. Inspection of the work shall not relieve the Contractor of the obligation to fulfill all conditions of the contract.

If a portion of the work is covered contrary to the Engineer's request or direction, or contrary to the requirements of the Contract Documents, it must, if required in writing by the Engineer, be uncovered for the Engineer's observation and be replaced at Contractor's expense without adjustment of the contract time or the contract sum.

If a portion of the work has been covered, which is not required by the Contract Documents to be observed or inspected prior to it's being covered and which the Engineer has not specifically requested to observe prior to it's being covered, the Engineer may request to see such work and it shall be uncovered and replaced by Contractor. If such work is in accordance with the Contract Documents, the costs of uncovering and replacing the work shall be added to the contract sum by change order; and if the uncovering and replacing of the work extends the contract time, an appropriate adjustment of the contract time shall be made by change order. If such work is not in accordance with the Contract Documents, the Contractor shall pay such costs and shall not be entitled to an adjustment of the contract time or the contract sum.

Regular working hours for City Construction Inspectors are between 7:30 a.m. and 4:00 p.m., Monday through Friday, excluding City holidays. If the Contractor works outside these times, the Contractor may be charged for additional inspection. Inspection by the Engineer or by a City inspector, or any order measurement, approved modifications, certificate or payment of money, or acceptance of any part of whole of the work, or any extension of time, or any possession by the City or its agents, shall not operate as a waiver for any provision of this contract or of any power reserved therein to the City, or any right to damage thereunder; no breach of this contract shall be held to a waiver of any or subsequent breach. All remedies shall be taken and construed as cumulative.

4.23 Testing - Unless otherwise stated in the Contract Documents, all required testing will either be performed directly by an independent laboratory coordinated and paid for by the Contractor. The Contractor shall submit the resulting certified test results and Certificates of Compliance for all materials

requiring such as specified in the Technical Provision. Contractor shall cooperate with the City in coordinating the necessary testing. The coordination of testing, including the number and location of tests, shall be under the direction of the Engineer. All compaction test sites deeper than five (5') feet below grade shall be properly shored by the Contractor to protect testing personnel.

The cost for performing re-tests due to failures, or additional call-outs if work is not ready to test, will be charged to the Contractor. The City shall require retesting until all required tests are successfully passed.

SECTION 5 – CHANGES IN WORK

5.01 Limited City Authority to Approve Change Orders - The Contractor recognizes that the City is a public agency and that it can only act through its duly authorized agents. In this regard, the Contractor agrees that only written change orders, executed by the governing body of the City, shall be valid. The Engineer shall have no authority to issue a change order unless so specifically authorized, and no person shall have authority to issue any oral change order.

5.02 Contractor Liability for Unapproved Change Orders - Unless a valid change order is issued, all changes in the work performed by the Contractor shall be at the Contractor's own risk, and shall not be entitled to any additional compensation. Furthermore, the Contractor may be required to make the work conform to the plans and specifications. No act or series of acts by the City during the course of the contract shall be deemed to constitute a waiver of the City's right to rely upon the provisions of this Section 5, "Changes in Work".

5.03 Non-Material Change Requests by the Contractor - Changes in the plans and specifications requested in writing by the Contractor, which do not materially affect the work and which are not detrimental to the work or to the interests of the City, may be granted to facilitate the work, when approved in writing by the Engineer. If such changes are granted, they shall be made at a reduction in cost or at no additional cost to the City. Nothing herein shall be construed as granting a right to the Contractor to demand acceptance of such changes or to increase the contract sum or contract time as a result of the proposed change.

5.04 Effect of Extension of Time - The granting of any extension of time due to delays which, in the judgment of the City, are unavoidable delays shall in no way operate as a waiver on the part of the City of its rights under this contract.

5.05 Letters of Instruction - The Engineer may issue letters of instruction in the form of Field Orders, Clarifications, responses to Requests for Information, or any other document which makes interpretations or clarifications to the Contract Documents that do not modify the scope of work or involve an adjustment in the contract sum or contract time. Letters of Instruction shall be binding upon the Contractor, and the Contractor shall promptly carry out the requirements of such Letters of Instruction.

5.06 Requests for Information, Inconsistencies and Changed Conditions - Before undertaking each part of the work, the Contractor shall carefully study all pertinent figures shown in the Contract Documents and verify that all applicable field measurements are free of conflicts, errors, discrepancies, inconsistencies and omissions. If such conditions are discovered, the Contractor shall notify the Engineer by writing a Request for Information, and await direction from the Engineer before proceeding.

If the Contractor encounters a changed condition, as defined by one or more of the conditions below, the Contractor shall notify the Engineer by writing a Request for Information before disturbing the condition further.

- (a) Material differing from that represented in the Contract which the Contractor believes may be hazardous waste, as defined by Health and Safety Code, Section 25117 that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provision of existing law; and
- (b) Subsurface or latent physical conditions at the site differing materially from those represented in the Contract Documents; and
- (c) Unknown physical conditions at the site of any unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in the work and of the character provided for in the Contract Documents.

No extension of Contract time shall be made by the City due to the Contractor's failure to provide a timely written notice of any inconsistency or changed condition requiring direction. The Engineer will respond to the Contractor's Request for Information within three working days, providing an interpretation, clarification or change order for an appropriate adjustment in contract time and cost pursuant to General Provisions, Section 5.07, and "Change Orders". Contractor shall wait for the Engineer's written response to a Request for Information before proceeding with any work.

The Contractor shall not be liable to the City for failure to report any conflict, error, or discrepancy in the Contract Documents, unless the Contractor had actual knowledge or could foresee such conditions as may be discovered by a reasonable examination of the work site or materials. If the Contractor performs any construction activity in which he knows or should know involves an error, inconsistency, ambiguity, or omission referred to in this Section, without notifying and obtaining the written consent of the Engineer, Contractor shall be responsible for the resultant costs, including, without limitation, the costs of correcting defective work. However, in an emergency affecting the safety of persons or property, the Contractor shall take all reasonably necessary precautions to prevent or minimize damage, injury, or loss.

5.07 Extra and Omitted Work - Whenever corrections, alterations or modifications of the work under this contract are ordered and approved by the Engineer and increase the amount of work to be done, such added work shall be known as Extra Work. When such corrections, alterations or modifications decrease the amount of work to be done, such deleted work shall be known as Omitted Work. The General and Special Provisions shall apply with equal force to all extra and omitted work.

When the Contractor considers that any changes ordered involve extra or omitted work, Contractor shall immediately notify the Engineer in writing and subsequently keep them informed as to when and where the alleged extra work is to be performed.

When extra work reports are agreed upon and signed by both parties, they shall become the basis of payment. When extra work is still under negotiation or has not been agreed upon, the Contractor shall keep daily detailed and accurate records itemizing each element of cost and shall provide certified payroll, invoices, and other substantiating records and documentation with records and/or claims for compensation to be provided no later than 30 days following the time in which the work claiming to be extra was performed.

Unless notification of extra work is documented, and unless a complete statement of materials used and expenses incurred is furnished by the Contractor, the Contractor shall not be entitled to payment of such alleged extra work, and any future claims for compensation will be invalid.

Payment for extra work shall be in accordance with General Provisions, Section 5.08 - "Change Orders". Omitted work shall not constitute a claim for damages on account of anticipated profits on the work that may be omitted.

5.08 Change Orders – At any time during the progress of the work, and without in any way rendering void the Agreement, the City may order alterations, additions or deductions from the work by change order, without notice to sureties. When so ordered in writing, the Contractor shall proceed with work as directed by the change order.

The change order shall describe the change in the work, the adjustment of the contract sum (if any), and the adjustment of the contract time (if any). The Contractor shall not be entitled to any extension of time for the completion of the work by virtue of any change order unless the change order specifically provides for this. If, after receiving a change order, the Contractor requests an extension of time, within five (5) working days the Contractor must file a written claim to that effect for consideration by the Engineer.

The process of submitting a proposed change, a cost proposal, or negotiating an agreed upon change order, or any failure to reach an agreement as to an adjustment in the contract sum or the contract time, shall not relieve the Contractor of the obligation to perform in accordance with the Contract Documents.

A change order may be in the form of a City directed change order or an agreed upon change order. Upon the receipt of either form of change order, the Contractor shall proceed promptly and diligently with the extra work.

- (a) *City Directed Change Orders* - A City directed change order may be issued by the City without the Contractor's signature where the City determines that it is in the City's best interest to proceed with the work, and the change does not materially alter the character of the work. The Contractor shall be deemed to have accepted the terms of any City directed change order unless the Contractor asserts a claim with respect to the change order, no later than ten (10) working days following the Contractor's receipt of the change order. See General Provisions, Section 5.09, "Disputed Work".
- (b) *Agreed Upon Change Orders* - Within five (5) working days after receiving a request from the City for a written proposal for an agreed upon Change Order, the Contractor shall provide the Engineer with a cost proposal in a form satisfactory to the Engineer, setting forth the Contractor's proposed adjustments to the contract sum and contract time for performing the extra work.

Compensation for agreed upon change orders shall be calculated based upon the unit prices stated in the Bid Schedule and no additional markup for overhead or profit will be provided unless stated otherwise as follows. If there are no unit prices for the extra work, the Contractor and the City may agree upon unit prices or lump sum costs, which shall be used to increase or decrease the contract sum. In the absence of any such agreement, the contract sum shall be adjusted by Force Account.

1. *Quantity Adjustments* - Unit prices shall govern not only for alterations to work covered by written specifications and drawings, but also for other work incidental or necessary to completing the work for which written specifications and drawings may be later prepared. Whenever an item of work or materials is specified in the contract by unit price and is increased or decreased by more than 25 percent (25%), Section 9-1.06 of the Standard Specifications shall govern payment. This Section allows for a renegotiation of the unit price based upon consideration of the total pay item cost. If, however, a renegotiated price cannot be reached by the Contractor and the City, then the payment for this item shall be adjusted by Force Account.
2. *Agreed Upon Price* - If there are no unit prices for proposed extra work, the Contractor and the City may agree upon unit prices or lump sum costs, by written change order, prior to commencing work. In the absence of any such agreement, the contract sum shall be adjusted by Force Account.
3. *Force Account* - When extra work is to be paid on a force account basis, the labor, materials and equipment used in the performance of that work shall be paid in accordance with the 2010 State Standard Specification, Section 9-1.04 "Force Account." To the total of the direct costs computed, there can be an added markup of up to thirty-five percent (35%) to the cost of labor, up to fifteen-percent (15%) to the cost of materials and up to fifteen-percent (15%) to the cost of equipment. These markups shall constitute full compensation for any and all overhead costs, profit, or other costs not specifically designated as a cost of labor, material or equipment. When subcontractors perform force account work, an additional ten-percent (10%) markup shall be added to the total cost of the extra work to reimburse the Contractor for additional administrative costs. No markup for any Subcontractor beyond the first tier shall be paid.

During the performance of extra work by Force Account, and as a condition to the Contractor's right to an adjustment of the contract sum, the Contractor shall prepare daily reports itemizing all costs for labor, materials, and equipment rental and provide certified payrolls. For labor costs, the reports shall include names, job classifications, hours worked and rates of pay. For equipment costs, the reports shall include size, type, identification number and hours of operation. All

records and reports shall be submitted to the Engineer for approval on a daily basis. Reports shall be made on the State of California, Daily Extra Work Report Form or on a similar form approved by the Engineer.

- i. *Labor* - Labor costs shall be based on the prevailing wage scale for each craft or type of workman, and no compensation shall be allowed for payment in excess of the prevailing wage. Employer payments for payroll taxes and insurance, health and welfare, pension, vacation, and other direct labor costs shall be included and will be calculated as the Labor Surcharge stipulated in the *State of California, Labor Surcharge and Equipment Rental Rates* book.
- ii. *Materials* - Materials cost shall be the cost of all materials purchased by the Contractor and used in the extra work and shall be the actual cost of such materials, including sales taxes, freight and delivery charges. The City reserves the right to reject materials to be furnished by the Contractor, sources of supply or, if necessary, to furnish the materials to the Contractor. No compensation will be paid to the Contractor for any material furnished by the City or for materials not used.
- iii. *Equipment Rental* - The Contractor will be allowed the actual rental rate of equipment, prorated over the time the machinery or equipment is required. For Contractor owned equipment, this rate shall be as stipulated in the *State of California, Labor Surcharge and Equipment Rental Rates* book. In addition, the Contractor will be allowed reasonable move-in and move-out charges, if applicable. All equipment shall, in the opinion of the Engineer, be in good working order, good condition, and suitable for its purpose. Equipment or tools having a replacement value of \$200.00 or less, whether or not consumed by use, shall be considered small tools and no payment will be made therefore.
- iv. *Other Services or Expenditures* - The City may authorize and approve payment for work performed by special forces or necessary services and expenditures other than labor, materials, and equipment rental.

5.09 Disputed Work - When the Engineer and Contractor fail to agree as to whether an alteration ordered by the Engineer constitutes a material change or difference in the character of the work, or fail to agree upon the compensation to be allowed for such altered work, the Contractor shall proceed with the altered work and file with the Engineer, within ten (10) working days after receiving direction from the Engineer, a written protest detailing the particulars of the dispute and the amount of additional compensation or time required for the alteration. Failure of the Engineer to recognize a change in the character of work when ordering alterations shall in no way be construed as relieving the Contractor of the Contractor's duty and responsibility for filing a protest as prescribed above. The City will not consider additional compensation for altered work unless the Contractor files a written protest within ten (10) working days after receiving direction from the Engineer.

If the Contractor has complied with the notification requirements of this sub-section, consideration of payment due shall be made as later determined through claim resolution procedures as set forth in General Provisions, Section 10, "Measurement and Payment".

Although not to be considered as approval for proceeding under extra work provisions, the Contractor shall keep and furnish records of disputed work in accordance with General Provisions, Section 5.07, "Extra Work".

SECTION 6 - CONTROL OF MATERIALS

6.01 Materials and Workmanship - All materials, parts and equipment furnished by the Contractor in the work shall be new, high grade, and free from defects. Workmanship shall be in accordance with generally accepted standards. Materials and workmanship shall be subject to the Engineer's approval.

Materials and workmanship not conforming to the requirements of these specifications shall be considered defective and will be subject to rejection. Defective work or material, whether in place or not, shall be removed immediately from the site at the Contractor's expense, when so directed by the Engineer.

If the Contractor fails to replace any defective or damaged work or material after notice from the Engineer, the Engineer may cause such work or materials to be replaced. The replacement expense shall be deducted from the amount to be paid to the Contractor.

Used or secondhand materials, parts and equipment are permissible only if permitted by the Special Provisions.

Specialized material or equipment to be used in the work that is not readily available from material suppliers (such as electroliers, luminaries, signal poles, heads, cable, controllers, pumps, etc.) shall be ordered within five (5) days after award of the contract. Time extensions will not be granted for project delays due to the unavailability of such specialized material and equipment unless the Contractor furnishes the Engineer with documentation of purchase order dates, acceptable reason for delay of delivery, or proof of diligent efforts to obtain said items from alternate sources.

The Contractor shall provide the Engineer with periodic reports to inform the Engineer of any changes in the projected material or equipment delivery dates.

6.02 Protection of Work and Materials - The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality and fitness of materials to be used in the work. Stored materials shall be reasonably accessible for inspection. The Contractor shall also adequately protect new and existing work and equipment for the duration of the contract.

The Contractor shall not, without the City's consent, assign, sell, mortgage, hypothecate, or remove equipment or materials which have been installed or delivered and which may be necessary for the completion of the contract.

6.03 Trade Names or Equals - In accordance with Public Contract Code Section 3400, whenever any particular material, process, or equipment is indicated by patent, proprietary or brand name, or by the name of a manufacturer or supplier, such wording is used for the purpose of facilitating its description and shall be deemed to be followed by the words "or equal".

Because products specified may have a uniqueness that can't be matched, the Contractor must "bid" the work based upon the products specified. If, during the submittal process, an equivalent product is proposed by the contractor, the contractor shall provide data to show that the product is considered equal. Contractor shall also identify any price differences, which shall be considered as part of the substitution and if accepted, shall result in an appropriate credit or cost to the City by change order should the substitution be made.

Unless otherwise authorized by the Engineer, the proposed substitution must be submitted in sufficient time, before the normal use or installation of the material, process or equipment, for the Engineer to determine the equivalency and for the Contractor to make any required purchases (including delivery).

The Engineer shall be responsible for solely determining whether the material proposed for substitution is equivalent to that specified, and the Engineer's findings shall be final. If a substitute offered by the Contractor is found to be not equal to the specified material, the Contractor shall furnish and install the specified material.

The specified contract completion time shall not be affected by any circumstances developing from the provisions of this Section.

6.04 Inspection of Materials by City - Unless otherwise specified, inspection may be required at the source for such typical materials and fabricated items as bituminous paving mixtures, structural concrete, metal fabrication, metal casting, welding, concrete pipe manufacture, protective coating application, and similar shop or plant operations.

Standard items of equipment such as electric motors, conveyers, elevators, plumbing fixtures, etc., are subject to inspection at the job site. Special items of equipment such as designed electrical panel boards, large pumps, sewage plant equipment, etc., are subject to inspection at the source, normally only for performance testing. The Special Provisions may specify additional inspection requirements.

6.05 Inspection of Materials by Others - When the City does not elect to make its own inspection at the source, the City may, at its expense, engage an inspector or accredited testing laboratory to inspect the materials, equipment or process. The inspector or representative of the testing laboratory shall judge the materials by the requirements of the plans and specifications. No materials or equipment shall be shipped nor any processing, fabrication or treatment of such materials shall be done without a favorable inspection by the engaged agent. These materials shall be subject to re-inspection at the job-site.

6.06 Tests of Materials - Before incorporation into the work, the Contractor shall submit samples of materials, as the Engineer may require, at no cost to the City. The materials for testing shall be delivered to the place by Contractor, and at the time designated, by the Engineer. Unless otherwise provided by the Special Provisions, all testing shall be performed under the direction of the Engineer, and at no expense to the Contractor.

The Contractor shall notify the City in writing at least fifteen (15) days in advance of any intention to use materials for which tests are specified, to allow sufficient time for the City to perform the tests. The notice shall name the proposed supplier and source of material.

6.07 Certification – The Engineer may waive material testing requirements of the Specifications and accept the manufacturer's written Certificate of Compliance or test data demonstrating that the materials to be supplied meet the requirements of the specifications. A Certificate of Compliance is acceptable for authorizing the use of steel pipe in sizes less than eighteen (18) inches and vitrified clay, cast iron or ductile iron pipe in all sizes. All materials used on the basis of a Certificate of Compliance may be sampled or tested by the City at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of the responsibility for incorporating materials in the work which conforms to the requirements of the Contract Documents.

6.08 Weighing and Metering Equipment – All scales and metering equipment used for proportioning materials shall be inspected for accuracy and certified within the past twelve (12) months by the State of California Bureau of Weights and Measures, by the County Director or Sealer of Weights and Measures, or by a scale mechanic registered with or licensed by the County,

The accuracy of the work by a scale service agency, except as stated herein, shall meet the standards of the California Business and Professions Code and the California Code of Regulations pertaining to weighing devices. A certificate of compliance shall be presented to the Engineer for approval prior to operation, and shall be renewed whenever required by the Engineer at no cost to the City.

All scales shall be arranged so they may be read easily from the operator's platform or area. They shall indicate the true net weight without the application of any factor. The figures of the scales shall be clearly legible. Scales shall be accurate to within one-percent (1%) when tested with the plant shut down. Weighing equipment shall be so insulated against vibration or moving of other operating equipment in the plant area such that the error in weighing with the entire plant running will not exceed two-percent (2%) for any setting nor one and one half percent (1.5%) for any batch.

6.09 Calibration of Testing Equipment – Testing equipment, such as but not limited to, pressure gages, metering devices, hydraulic systems, force (load) measuring instruments, and strain-measuring devices shall be calibrated by a testing agency acceptable to the Engineer at intervals not to exceed twelve (12) months, and following repairs, modification, or relocation of the equipment. Calibration certificates shall be provided when requested by the Engineer.

SECTION 7 – UTILITIES

7.01 City's Statutory Obligation - Pursuant to Government Code, Section 4215: "in any contract to which a public agency as defined in Section 4401 is a party, the public agency shall assume the responsibility, between the parties to the contract, for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the site of any construction project that is the subject of the contract, if such utilities are not identified by the public agency in the plans and specifications made a part of the invitation for bids. The contract documents shall include provisions to compensate the Contractor for the costs of location, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy and for equipment on the project necessarily idled during such work. The Contract documents shall include provisions that the Contractor shall not be assessed liquidated damages for delay in completion of the project, when such delay was caused by the failure of the public agency or the owner of the utility to provide for removal or relocation of such utility facilities."

7.02 Contractor's Obligation to Identify and Protect Subsurface Infrastructure - The Contractor shall locate and protect service laterals, conduits, and appurtenances of any underground facility, the presence of which could be reasonably inferred from the Contract Documents or from the presence of visible facilities such as buildings, meters, and junction boxes, prior to doing any work that may damage any such facilities, or interfere with their service. Where underground main distribution conduits, such as water, gas, sewer, electric power, telephone, or cable television are shown on the plans, the Contractor shall assume that every parcel will be served by a service connection for each type of utility. The Contractor shall comply with all requirements for the protection of underground infrastructure as set forth in Government Code, Sections 4215 through 4216.9.

It shall be the Contractor's responsibility to complete all work in a manner that satisfies utility company standards, providing if requested, detailed plans prepared by a California Registered Civil Engineer showing necessary temporary support of utilities during coordinated construction work. The Contractor is directed to contact these agencies before submitting bids and to be familiar with their requirements and shall include all costs of this coordination within the proposals bid prices.

The Contractor agrees to assume liability and to hold the City of San Carlos, its officers, and employees harmless from any damages resulting from the existence of underground utilities and structures not reported to the Engineer, not indicated on the public records examined, or located at variance with that reported or shown on records examined.

7.03 Location - The City will search known records and indicate on the plans those utilities, except service connections, which may affect the work. All available information regarding removal, relocation, or disconnection of utilities, or installation of new utilities, will be furnished to prospective bidders before the receipt of bids. The Contractor shall immediately report to the Engineer those utilities omitted from the plans or found substantially at variance with the location shown.

Existing and proposed utilities and improvements are shown in their approximate locations. Locations may not have been field verified and no guarantee is made as to the accuracy and completeness of the information shown. The fact that any facility is not shown on the plans shall not relieve the Contractor of any responsibility under this Section. It shall be the Contractor's responsibility to determine the existence and location of utilities shown on the plans, indicated by field locating services, or evidenced by facilities visible in the field. No additional compensation will be allowed for delays incurred as a result of the Contractor's failure to field verify and/or pothole existing utilities prior to beginning construction. Potholing shall be considered as part of the various contract bid items and no additional compensation will be allowed.

At least three (3) working days prior to commencing work, the Contractor shall request that utility and agencies mark or otherwise indicate the location of their substructures. Contractor shall contact Underground Service Alert (USA) at (800) 642-2444 and the Engineer at least forty-eight (48) hours prior to excavation. The location of utilities as shown on the plans are approximate and are not to be construed as certainty. It shall be the Contractor's responsibility to determine the true location and depth of all utilities and service connections affecting or conflicting with the work, prior to the performance of the

work. As necessary, the Contractor shall pothole these utilities prior to working in the area to avoid damage to them. Potholing shall be considered as part of the contract bid items, and no separate payment will be made. Contractor shall be familiar with the type, material, age and condition of any utility which may be affected by the work.

7.04 Protection - As necessary or as directed by the Engineer, the Contractor shall field adjust proposed improvements to avoid conflicts with existing improvements. The Contractor shall not interrupt the service function or disturb the supporting base of any utility, without authority from the utility Owner or order from the City.

Where protection is required to ensure support of existing underground, overhead and at-grade utilities (including their associated structures and service connections) as shown on the plans, at the Contractor's expense such protective measures shall be furnished and placed.. In case of damage, the Contractor, without additional compensation, shall restore utilities to as good of a condition as they were found.

Upon learning of the existence and location of any utility omitted from or shown incorrectly on the plans, the Contractor shall notify the City and be fully responsible for protecting such utility. When authorized by the Engineer, additional protection may be paid by change order, for utilities other than a service connection.

The Contractor shall immediately notify the Engineer and the utility owner when Contractor disturbs, disconnects or damages any utility. If the utility is located substantially as indicated on the plans, the Contractor shall bear the costs of repair or replacement.

When placing concrete around or contiguous to any utility, at the Contractor's expense, a cushion of expansion joint material, clear opening, sleeve, or other suitable material approved by the Engineer so as to prevent embedment or bonding of the utility with the concrete shall be furnished and installed.

7.05 Shut Down Notification – The City is in-charge of the sewer and storm water collection systems, traffic signals and street lighting system and as such the Contractor shall coordinate shut downs of these utilities and facilities with the City's Engineer and Public Works Maintenance Department. The Contractor shall also coordinate the shutdown of all other utilities, including, but not limited to water, electricity, gas, communications, or CATV with the corresponding utility owner.

Shut downs of any utility or other facility, when allowed, shall be done only after:

- A. The Contractor has coordinated with and notify the Engineer/Utility Owners in writing, at least seventy-two (72) hours in advance of the shut down, and,
- B. Has properly notified customers (residents, businesses/agencies) emergency response staff, and,
- C. Has all materials required for the work at the job site prior to requesting a shut off.

Except for scheduled shutdowns and in cases of emergency, the Contractor shall notify all customers and effected parties of a shutdown at least forty-eight (48) hours in advance by writing and four (4) hours in advance by person to allow adequate draw time. Once shut down, the Contractor shall proceed with the work in an expedient manner until the water lines or sewer lines are back in service.

7.06 Removal - Unless otherwise specified, the Contractor shall remove all portions of interfering utilities shown on the plans as 'abandoned' or "to be abandoned in place". Before starting removal operations, the Contractor shall ascertain from the utility Owner whether abandonment is complete. The costs involved in the removal and disposal of utilities to be abandoned shall be considered as part of the contract bid items, and no separate payment will be made.

7.07 Relocation - When feasible, the utilities within the area affected by the work will complete their necessary installations, relocations, repairs, or replacements before commencement of work by the Contractor. When the Contract Documents or plans indicate that a utility is to be relocated, altered or constructed by others, the City will conduct all negotiations with the utilities and the work will be done at no cost to the Contractor.

Utilities interfering with the permanent project work, discovered after the award of the contract, shall either be relocated, altered, or reconstructed by the utility, or the Engineer may order changes in the work to avoid interference. Such changes will be paid for in accordance with General Provisions, Section 5, "Changes in Work".

When the plans or specifications provide for the Contractor to alter, relocate, or reconstruct a utility, all costs for such work shall be absorbed in the contract bid items. Temporary or permanent relocation or alteration of utilities by the Contractor for convenience shall be the responsibility of Contractor. Contractor shall make all arrangements, obtain all approvals, and bear all costs. The Contractor may, for convenience or to expedite the work, agree with the owner of any utility to disconnect and reconnect interfering service connections. The City shall not be involved in any such agreement.

7.08 Delays - The Contractor is responsible for notifying utility companies in time to prevent delays attributable to utility relocations or alterations as called for in the Contract Documents. The Contractor shall not be entitled to damages or additional payment if such delay does occur. The Engineer will determine the extent of the delay based on the Baseline Construction Schedule (Section 8.05) and on the project as a whole, and any commensurate extension of time.

7.09 Cooperation - When necessary, the Contractor shall conduct operations so as to permit access to the worksite and provide time for utility work to be accomplished during the progress of the contract work.

SECTION 8 – PROSECUTION AND PROGRESS

8.01 Notice to Proceed - Within twenty-one (21) calendar days following receipt of the signed agreement, bonds and insurance, the City shall issue the Contractor a Notice to Proceed provided that the documents are acceptable to the City. Unless stated otherwise, the contract time shall commence upon the receipt date on the Notice to Proceed.

8.02 Commencement of Work - Work shall commence within fifteen (15) calendar days following the receipt date on the Notice to Proceed, and shall be diligently prosecuted to completion within the time provided in the Notice to Bidders.

8.03 Subcontracting - Unless otherwise indicated by the Special Provisions, the Contractor shall perform the majority of the project work.

8.04 Administrative Duties - The Contractor shall coordinate the scheduling and timing of administrative duties with other activities to avoid conflicts and to ensure orderly project progress. Such activities include, but shall not be limited to, the preparation of construction schedules, preparation and processing of submittals, requests for information and responding to requests for quotations, attending and preparing for progress meetings and coordinating project closeout activities.

8.05 Baseline Construction Schedule – Within ten (10) calendar days of the Notice to Proceed, the Contractor shall submit to the Engineer an acceptable Critical Path Method (CPM) progress schedule showing the critical path for completing the various items of work within the number of contract days specified. The schedule shall show the order in which the Contractor proposes to carry out the major items of work and the dates on which he will start and finish the various items (including procurement of materials and equipment). If requested, the schedule shall be resource loaded to reflect person/crew hours and equipment loading for various construction activities in order for the City to better evaluate the proposed schedule.

- (a) *City Review of Schedule* – The City may review and note exceptions to the Contractor's schedule, if it is not sufficiently detailed to clearly show the work to be completed during each month to assure the completion of the work within the project duration. The Contractor will be solely and exclusively responsible for resolving any exceptions, and the City's review will not create any scheduling obligations of the City. Any noted corrections to the schedule shall be addressed within five (5) working days.
- (b) *Update of Schedule* – After submission of a schedule to which the City has taken no exceptions, the Contractor shall submit an updated schedule on a monthly basis or as otherwise specified by the City until completion of the work. The updated schedule must show the "As Constructed" progress up to the date for which the schedule has been prepared and reflect any proposed changes in the method of operations, to achieve the project milestones within the required project duration.
- (c) *Float* – The schedule must show early and late completion dates for each task. The number of days between these dates will be designated as "float". The float will be assigned to the project and available for the City, at the Engineer's discretion, to allocate the "float" to the Contractor as needed to complete the work in accordance with the agreement.
- (d) *Failure to Submit Schedule* – If the Contractor fails to submit a schedule within the time periods specified in this sub-section, or submits a schedule to which the City has taken uncorrected exceptions, the City may withhold payments to the Contractor until such schedule is submitted and/or corrected in accordance with the Contract Documents.

8.06 Three-Week Look Ahead Schedule - The Contractor is required to furnish to the Engineer, on a weekly basis at the project's progress meetings, a three-week look ahead schedule. The schedule must show planned activities in sufficient detail to allow proper monitoring of the planned construction activities.

8.07 Construction Sequence - The Contractor shall prepare and submit at the pre-construction meeting a staging or phasing plan identifying the sequence of construction work and traffic control needed to complete the project. The staging plan shall be subject to review and approval by the Engineer, prior to the start of construction. The goal of the phasing plan will be to minimize impacts to surrounding businesses and residents in the project areas. When required by the Special Provisions or plans, the Contractor shall follow the sequence of operations as set forth therein.

8.08 Recording Existing Conditions - Existing conditions throughout the project site shall be photographed and/or videotaped by the Contractor before starting construction. Recording shall include and show every detail of existing improvements, including the current condition of the curb, gutter, sidewalk, signs, landscaping, streetlights, structures near the project including face of buildings, canopies, shades, fences and any other features within the limits of work. Photos and/or videotape shall be delivered to the Engineer at the pre-construction meeting.

8.09 Preconstruction Conference - The City shall designate a date and time for the pre-construction conference once the contract has been fully executed. At the pre-construction conference, the City shall discuss various administrative procedures and project coordination issues. At a minimum, the Contractor should be prepared to furnish and discuss the following:

- (a) Letter designating the Superintendent.
- (b) A list of key personnel and emergency contact information including telephone numbers to be used in case of emergency
- (c) Sequence or phasing plans identifying the phasing of construction work and any alternative sequences for consideration.
- (d) Traffic control plans associated with the staging plans (to be signed and stamped by a Licensed Traffic Engineer).
- (e) A draft of the master Baseline Construction Schedule, in Critical Path Method (CPM) format (to be finalized no later than ten (10) days after the Notice to Proceed).
- (f) A breakdown of lump sum bid items to be used as a basis for determining the value of work completed on future progress payments.
- (g) A submittal schedule listing all project submittals that will need to be reviewed and a listing of proposed material suppliers.
- (h) Utility company coordination and/or permit issues.
- (i) Videotape and/or photography of the project's existing condition (to be completed prior to starting construction).
- (j) Anticipated cash flow projections, if requested by the engineer.

8.10 Progress Meeting - The Contractor, Job Superintendent and Subcontractors, if requested by the City, shall attend weekly progress meetings to be scheduled by the Engineer at a time agreeable to both the Engineer and the Contractor. Contractor shall also attend special meetings in addition to regular progress meetings if necessary and directed by the Engineer.

8.11 Hours of Construction - Construction activities shall be limited to the hours of 8:00 a.m. to 6:00 p.m., unless otherwise noted or further restricted in the Contract Documents, or as directed by the Engineer. No work shall be done on weekends, holidays or outside these specified hours, unless otherwise approved by the Engineer. The Contractor shall take into consideration and coordinate time constraints for special events or activities organized by the City or other agencies. No mechanical equipment, including hauling or deliveries by trucks, shall start before 8:00 a.m. and all equipment must shut down before 6:00 p.m. unless approved by the Engineer.

8.12 Prosecution of Work - To minimize public inconvenience and possible hazards and to restore the streets and other work areas to their original condition and former state of usefulness as soon as practicable, the Contractor shall diligently prosecute the work to completion. If, in the Engineer's

opinion the Contractor fails to prosecute the work to the extent that the above purposes are not being accomplished, the Contractor shall, upon orders from the Engineer, immediately take the steps necessary to fully accomplish said purposes. All costs for prosecuting the work as described herein shall be absorbed in the Contractor's bid. Should the Contractor fail to take the necessary steps to fully accomplish said purposes, after orders of the Engineer to do so, the Engineer may suspend the work in whole or in part, until the Contractor takes said steps. With or without such suspension, the Engineer may cause such steps to be taken by force account or by other means at the Contractor's expense.

8.13 Suspension of Work - Work may be stopped or suspended in whole or in part for up to ninety (90) days when, in the Engineer's opinion, the suspension is necessary and in the interest of the City. The Contractor shall immediately comply with any written order of the Engineer suspending work. Such City directed suspension shall be without liability to the Contractor on the part of the City. Suspended work shall be resumed upon written order of the Engineer. An extension of contract time equal to the period of suspension shall be issued to the Contractor by change order. Any claim by the Contractor for an adjustment of the contract sum or the contract time shall be made within ten (10) working days after the end of the work suspension.

If work is suspended through any fault of the Contractor, all expenses and losses incurred by the Contractor during such suspensions shall be borne by the Contractor. If the Contractor fails to properly provide for public safety, traffic, and protection of the work during periods of suspension, the City may elect to do so, and shall deduct the cost thereof from monies due the Contractor. Such action will not relieve the Contractor from any liability.

8.14 Default by the Contractor and Termination of Control - As a result of any of the following events, the Contractor shall be deemed to be in default:

- (a) If the Contractor is in bankruptcy or makes a general assignment for the benefit of creditors, or
- (b) If the Contractor fails to make prompt payment to subcontractors for labor or materials, or
- (c) If a receiver is appointed on account of the Contractor's insolvency, or
- (d) If the Contractor fails to provide enough properly skilled workmen or enough materials to insure compliance with the construction time schedule, or
- (e) If the Contractor fails to perform any portion of the work within the timing requirements of the Contract Documents, or abandons the project site, or
- (f) If the Contractor disregards instructions from the Engineer or violates any provision of the contract, or
- (g) If the Contractor fails to replace or repair any damage caused by the Contractor or its agents, representatives, contractors, subcontractors, or employees in connection with the performance of the work, or
- (h) If the Contractor violates any legal requirement related to the work.

In case of default, the City may give written notice to the Contractor and the Contractor's bonding agent that if the default is not remedied within ten (10) calendar days or the Contractor does not provide adequate written assurance to the satisfaction of the Engineer that the cure will be forthcoming, the Contractor's control over the work may be terminated as of the date specified in the written notice.

Upon such termination of control the City may enter upon and take possession of the entire work and may also take possession, for the purpose of completing the work, of all of the Contractor's tools, equipment and appliances upon the work, and all materials on the site or stored off-site for incorporation into the work. The City may, at its sole option and without further notice to anyone, complete the work by day labor, by contract entered into by negotiations, by competitive bidding, by calling upon the performance of the performance bond surety, or by other means as the City, in its discretion, shall elect.

After termination of the Contractor's control over the work as herein provided, the Contractor shall not be entitled to any further payments under the contract until the entire work thereunder has been fully

completed and finally accepted by the City. After such completion and acceptance, if the “unpaid balance of the contract price” (as defined in the next paragraph) exceeds the sum of the amounts expended by the City in taking over and completing the work, including all managerial and administrative expense incurred by the City on account thereof and the amount of all damages incurred by the City by reason of the Contractor’s default, such excess shall be paid to the Contractor. If the said amount expended exceeds the unpaid balance, the Contractor and the surety shall be liable to the City for the difference. At the Contractor’s request, the expense incurred by the City in taking over and completing the work, and the amount of any damage incurred by the City by reason of the Contractor’s default shall be audited and certified by an independent third party, whose certificate thereof shall be binding and conclusive upon the parties.

For the purposes of the computations required by the paragraph above, the “unpaid balance of the contract price” shall be the original contract price as adjusted by any change orders issued prior to termination of the Contractor’s control, less all payments made on account thereof prior to such termination, and less any and all amounts withheld or paid pursuant to stop notices filed with the City upon claims of subcontractors or others from equipment, labor or materials furnished to the work on behalf of the Contractor.

Upon completion and acceptance of the work, the Contractor shall be entitled to the return of all materials not used in the work, but without claim against the City for loss or damage with respect thereto, and shall be entitled to the return of all the equipment, tools and appliances taken possession of by the City, but without claim against the City for any charge for the use thereof or for usual and ordinary depreciation and wear and tear.

The exercise of remedies provided for in this sub-section, for default by the Contractor, shall be in addition to, and shall not be deemed a waiver by the City of any other rights or remedies due the City under the contract provisions, for default by the Contractor.

8.15 Contractor’s Right to Stop Work or Terminate Contract – The Contractor may give written notice to the Engineer of intention to stop work or terminate the Agreement, or both if the work should be stopped by order of any court or other public authority, through no act, omission or fault of the Contractor or any Subcontractor, agent or employee of the Contractor, and such work stoppage under such order shall continue for thirty (30) consecutive days from the effective date of such order

If, after the Contractor provides notice to the City of any of the above defaults, the City does not remedy the default within ten (10) calendar days, the Contractor may stop work and may give the City written notice of contract termination. The Contractor may then recover from the City payment for all work executed to date and any loss sustained upon any equipment or materials procured for the work prior to the work stoppage. No compensation for loss of anticipated profits will be provided, however, on work not completed. The Contractor’s right to recovery shall be subject, however, to the duty of the Contractor to mitigate all loss or damage so far as reasonably possible.

8.16 City’s Right to Terminate Contract – The City may, at its option, terminate the Agreement, in whole or from time to time in part, at any time by giving notice to the Contractor. Upon such termination, the Contractor agrees to waive any claims for damages, including loss of anticipated profits, on account thereof; and, as the sole right and remedy of the Contractor, the City shall pay the Contractor in accordance with this sub-section. Upon termination, the obligations of the Contractor for portions of the work already performed shall continue.

- (a) Upon receipt of a Notice of Termination, the Contractor shall, unless the notice directs otherwise, do the following:
 - 1. Immediately discontinue the work to the extent specified in the notice.
 - 2. Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary to complete such portion of the work that are not to be discontinued.

3. Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent that they relate to the performance of the discontinued portion of the work.
 4. Thereafter do only such work as may be necessary to preserve and protect the work already in progress and to protect materials, plants, and equipment on the project site or in transit thereto.
- (b) Upon such termination, the City shall pay to the Contractor as a sole and exclusive remedy for the termination, the sum of the following, and the Contractor will be entitled to no other compensation or damages, and expressly waives same:
1. The amount of the contract amount allocated to the portion of the work properly performed by the Contractor as of the date of termination, less sums previously paid to the Contractor, plus
 2. Previously unpaid costs of any items delivered to the project site which were fabricated for subsequent incorporation in the work, plus
 3. Any proven losses with respect to materials and equipment directly resulting from such termination, plus
 4. Reasonable demobilization costs in excess of what would have been incurred if work were not terminated, plus
 5. Reasonable costs for preparing a statement of the aforesaid costs, expenses, and losses in connection with such termination.

The City may terminate the Agreement at its own discretion or when conditions encountered during the work make it impossible or impracticable to proceed, or when the City is prevented from proceeding with the Agreement by act of God, by law, or by official action of a public authority.

8.17 Time of Completion and Days Charged - The Contractor shall diligently prosecute and fully complete the work within the number of calendar or working days set forth in the Notice inviting Sealed Proposals or shall be subject to liquidated damages. Time is of the essence in the performance of all obligations under the Contract Documents, and all timing requirements shall be strictly adhered to unless otherwise modified by the City. See General Provisions, Sections 8.12, "Prosecution of Work", and 8.18, "Liquidated Damages".

Under a calendar day contract, City observed holidays and inclement weather delays are to be anticipated and unless there is a deviation from what is customary for the time of year the project is under construction, no additional days will be granted. Every day, including holidays, Saturdays and Sundays shall be counted as a day charged under a calendar day contract.

Under a working day contract, the Contractor will be given credit for City observed holidays and inclement weather delays, in accordance with the State Standard Specifications. Should the Contractor prepare to begin work at the regular starting time in the morning of any day on which inclement weather, or the conditions resulting from the weather prevents the work from beginning at the usual starting time and the crew is dismissed as a result thereof and the Contractor does not proceed with at least seventy-five percent (75%) of the normal labor and equipment force engaged in the current controlling operations for at least sixty percent (60%) of the total daily time being currently spent on the controlling operations, the Contractor will not be charged for a working day whether or not conditions should change thereafter.

8.18 Liquidated Damages - The City and the Contractor, by execution of the agreement, each agree that time is of the essence in the performance of the work, and that actual damages for inconvenience and loss from any delay in completion of the contract beyond the date provided in the Notice to Bidders is extremely difficult or impossible to determine.

The City and the Contractor further agree, as specified in the Notice to Bidders, that liquidated damages shall be assessed for each and every calendar day required to complete the contract in excess of the contract time established for the project, and that the amount stated therein is a reasonable

estimate of the amount of such damages. The Engineer may deduct any liquidated damages owed to the City, as determined by the Engineer from any payments otherwise payable to the Contractor under this agreement.

In addition, the City shall have the right to charge to the Contractor and to deduct from the final payment for the work the actual cost to the City of engineering, inspection, administration and other overhead expenses which are directly chargeable to the contract and which accrue during the period of such delay, except that the cost of final surveys and preparation of the final estimate shall not be included in such charges.

Separate from the above-mentioned liquidated damages, the Contractor shall be responsible for paying all damages incurred by private businesses (residential, commercial or industrial), schools and hospitals due to non-completion of the project by the date specified.

Nothing contained herein shall limit the City's rights or remedies against Contractor for any default other than failure to complete the work within the contract time. This provision for liquidated damages shall not be applicable nor act as a limitation upon the City if the Contractor abandons the work. In such event, the Contractor shall be liable to the City for all losses incurred.

The date of the Engineer's Certificate of Substantial Completion shall be the termination date, if applicable, of liquidated damages.

8.19 Delays and Extensions of Time

- (a) *Excusable Delays* - shall mean delays in the prosecution or completion of the work which result from causes beyond the control of the Contractor and City and which could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor, suppliers, or any tier of the Contractor's subcontractors. Excusable Delays fall into the following categories:
1. Abnormal Delays – Excusable Delays caused by acts of god, fire, unusual storms, floods, tidal waves, earthquakes, strikes, labor disputes, freight embargoes, and shortages of materials insofar as they prevent the Contractor from proceeding with at least seventy-five percent (75%) of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical path activity.
 2. Weather Delays – Excusable Delays due to inclement weather conditions or the conditions resulting from weather prevent the Contractor from proceeding with seventy-five percent (75%) of the normal labor and equipment force engaged in the current critical activity item for a period of at least five (5) hours per day toward completion of the current critical path activity.
 3. Material Shortage Delays – Excusable Delays due to shortages of material, provided that the Contractor submits satisfactory proof to the Engineer. For the proof to be satisfactory, the Contractor must demonstrate that every effort to obtain the materials from all known sources within reasonable reach of the proposed work has been made. Only the physical shortage of material, caused by unusual circumstances, will be considered under these provisions as an excusable delay, and no consideration will be given to any claim that material could not be obtained at a reasonable, practical, or economical price, unless it is shown to the satisfaction of the Engineer that such material was only available at exorbitant prices. A material shortage delay will not be considered for material ordered or delivered late or for material whose availability is affected by virtue of mishandled procurement. The above provisions shall apply equally to equipment to be installed in the work.
- (b) *Compensable Delays* - shall include delays that occur in the prosecution or completion of the work, through no fault of the Contractor which prevent the Contractor from proceeding with at least seventy-five percent (75%) of the normal labor and equipment force for at

least five (5) hours per day toward completion of the current critical activity item(s) on the latest favorably reviewed progress schedule due to the following causes:

1. Delays due solely to the actions and/or inactions of the City.
 2. Delays due to changed conditions as defined in General Provisions, Section 5.05, "Requests for Information, Inconsistencies and Changed Conditions".
 3. Delays due to other Contractors employed by the City who interfere with the Contractor's prosecution of the work as defined above.
- (c) *Inexcusable Delay* - means any delay in the completion of the work beyond the expiration of the contract time resulting from causes other than Excusable Delays or Compensable Delays. An Inexcusable Delay shall not entitle the Contractor to an extension of the contract time or an adjustment of the contract sum. In addition to liquidated damages for inexcusable delays, the Contractor agrees to pay the City's actual costs, including charges for engineering, inspection and administration incurred during the delay.
- (d) *Concurrent Delays* - those periods of delay when the prosecution of the work is delayed during the same period of time due to causes from a combination of the delays defined as Excusable, Compensable or Inexcusable.

If the Contractor desires an extension of time, he shall file a written request based upon the delays reported. The Engineer will ascertain the facts, the extent of the delays, and the effect upon the entire project, and the City will grant an extension of time equivalent to verified time lost. The request for an extension of time must be made no later than ten (10) working days after the start of the condition that purportedly caused the delay, and no later than fifteen (15) working days after the date on which performance on the condition purportedly causing the delay has ended.

Contractor may make a delay claim for an extension of the contract time for an Excusable Delay or a Compensable Delay. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the contract time shall be the number of calendar days from the commencement of the first delay to the cessation of the delay which ends last. If an Inexcusable Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the contract time shall be the number of calendar days, if any, by which the Excusable Delay or the Compensable Delay exceeds the Inexcusable Delay.

For a Compensable Delay, the Contractor may make a delay claim for an adjustment in the contract sum in an amount equal to the sum of the actual and unavoidable additional costs of labor, material, and equipment furnished at the site by the Contractor or subcontractors, including wages, salaries, fringe benefits and payroll taxes.

Extensions of time, when granted, will be based upon the effect of delays to the project as a whole and will not be granted for non-controlling delays to minor portions of the work unless it can be shown that such delays did, in fact, delay the progress of the project as a whole. For purposes of determining delays, all float associated with the project schedule shall belong to the project. See General Provisions, Section 8.05, "Baseline Construction Schedule".

If delays are caused by unforeseen events beyond the control of either the Contractor or the City, such delays will entitle the Contractor to an extension of time as provided herein, but the Contractor shall not be entitled to damages or additional payment due to these delays. War, governmental regulations, labor disputes, strikes, fires, floods, adverse weather necessitating cessation of work, other similar action of the elements, inability to obtain materials, equipment, or labor because of Federal Government restrictions arising out of National Defense, required extra work, action or inaction by the City, or other specific reasons as may be further described in the specifications may constitute such a delay. If delays beyond the Contractor's control are caused by reasons other than those mentioned above, but are substantially equal in gravity to those enumerated, an extension of time may be granted, if deemed by the Engineer to be in the best interests of the City.

The Contractor shall be entitled to an extension of time if delayed due to a failure of the City to furnish necessary right-of-way or materials which the City agreed to furnish, or by the City's failure to supply necessary plans or instructions concerning the work, after written request by the Contractor.

For Compensable Delay periods resulting in indirect overhead expenses, the Contractor shall be reimbursed as provided for in General Provisions, Section 5, "Changes in Work".

8.20 Substantial Completion – When work in accordance with the Contract Documents has progressed to a stage of one-hundred percent (100%) complete, as determined by the Engineer, except for the completion of minor punch list items of deficiencies or omissions in the work which require correction in order to satisfy the agreement, yet do not impair the City's ability to occupy and fully utilize the work for its intended purpose, the project shall be deemed "Substantially Complete". Portions of the work may also be designated by the City as substantially complete if the Contract Documents require separate delivery.

When the Engineer determines that the work or such designated portions of the work are substantially complete, the Engineer will prepare and sign a Certificate of Substantial Completion. The date of substantial completion shall establish the date at which days charged against the project duration shall terminate. The date of substantial completion shall also establish the date of occupancy by the City and the transfer of responsibility from the Contractor to the City for such items as security, maintenance, heat, utilities, insurance, and damage to the work from causes other than that of the Contractor. Unless otherwise indicated in the Certificate of Substantial Completion, the Contractor's guarantee for the work shall commence upon the date of substantial completion. See General Provisions, Section 11.01, "Contractor's Guarantee".

8.21 Project Closeout - After the Contractor has received the Certificate of Substantial Completion and has only minor work remaining, project closeout may begin. The following items and procedures are required as part of the project close out process.

- (a) Following the completion of punch list items, the Contractor shall make a written request to the city to conduct a final inspection. The written request shall be accompanied by a Certification that the work has been performed in accordance with the Contract Documents.
- (b) Within fourteen (14) days of receipt of the Contractor's Certificate of Completion, a final inspection will be scheduled and conducted by the City. As a result of the inspection, the City will advise the Contractor of any work that must be completed or corrected before Acceptance, in the form of a punch list.
- (c) The City will conduct a re-inspection of the punch list items within when requested by the Contractor, in writing, with assurances that the punch list requirements have been met. Any charges by a Consulting Engineer/Architect hired by the City to do repeat re-inspection of the punch list may be recovered from the Contractor.
- (d) The contractor shall provide a final payment request with lien releases (if applicable) in a format acceptable to the City.
- (e) The as-built drawings and all record documents and shall be provided to the City by the Contractor including but not limited to, equipment operation and maintenance manuals, copies of warranties, shop drawings, product data, etc. Record documents shall be properly identified and organized into binders.

8.22 Final Completion - After the Contractor has received the Certificate of Substantial Completion along with the punch list, and has completed the items identified as necessary for project closeout, the Engineer will make a determination as to if the work is fully completed and in accordance with the Contract Documents. If so, the Engineer will recommend final acceptance to the City Council.

Should it become necessary, due to developed conditions, for the City to occupy any portion of the work, or any part of any structure or equipment, before the contract is completed or accepted, such

occupancy shall not constitute an acceptance of any part of the work, unless so stated in writing by the City.

8.23 Final Acceptance – Final acceptance by the Engineer will be considered after the work has been fully completed. A Notice of Completion will be filed with the County Recorder once Final Acceptance has been made.

8.24 Risk of Loss - The Contractor shall be responsible for the charge, care and protection of the project and shall bear all risks of injury or damage to the work, materials or equipment delivered to the site, by any means including fire, earthquake, wind, storm or other action of the elements, vandalism, or loss by theft, from the date of Notice to Proceed to the date of the filing of the Notice of Completion by the Engineer. The Contractor shall rebuild, repair, restore and make good all injuries or damage to any portion of the work, and shall bear the entire expense thereof, except such injuries or damages that are caused by riot, insurrection, acts of the Federal or State Government, or a public enemy in time of war.

8.25 Use of Improvements During Construction - The City reserves the right to take over and utilize all or part of any completed facility or appurtenance. Such action by the City will not relieve the Contractor of responsibility for injury or damage to said completed portions of the improvement resulting from use by public traffic, from the action of the elements or from any other cause attributable to the Contractor's operations or negligence. The Contractor will be required to restore such portions of the improvement before final acceptance. Nothing in this Section shall be construed as relieving the Contractor from full responsibility for correcting defective work or materials.

SECTION 9 —RESPONSIBILITIES OF THE CONTRACTOR

9.01 Contractor's Responsibility for the Work - The Contractor shall supervise, coordinate, and direct the work using Contractor's best skill and attention. Contractor shall have control over and be solely responsible for construction means, methods, techniques, sequences, procedures, and the coordination of all portions of the work in accordance with the terms of the Contract Documents until the completion and final acceptance of the work by the City. The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.

The Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections and repairs occasioned or rendered necessary by causes of any nature whatsoever, excepting only acts of God and none other, to all or any portions of the work, excepting as otherwise stipulated.

9.02 Contractor's Responsibility for Subcontracted Work - The City will deal directly with, and make all payments to the Contractor only. The Contractor shall be responsible for the coordination of all trades, subcontractors, and suppliers engaged upon the work. Neither the City nor the Engineer will undertake to settle any differences between the Contractor and the subcontractors.

All persons engaged in the work, including subcontractors, will be considered as employees of the Contractor. The Contractor will be held responsible for their work and shall be responsible to the City for acts and omissions including those by their respective agents and employees.

When subcontracted work is not prosecuted in a manner satisfactory to the Engineer, the Contractor shall be notified to take corrective action within a specified time. If timely correction is not made, then upon receipt by the Contractor of written instructions from the Engineer, the Subcontractor shall be removed immediately from the work and shall not be reemployed.

9.03 Superintendent - The Contractor shall employ, and provide a written letter designating a superintendent and/or representative and all their contact information. The superintendent and/or representative shall be present on the job site whenever work is in progress to coordinate all work with the City and neighboring property owners, and who shall be available by phone twenty-four (24) hours per day, seven (7) days a week up to the Final Acceptance of the work by the City. A backup representative may also be provided. A joint venture shall designate only one Superintendent.

City approval of the Superintendent is required prior to starting work. The City reserves the right to request an appropriately qualified replacement of the Superintendent any time during construction of the project. Contractor shall provide the Engineer with the Superintendent's telephone number, along with an after-hours emergency contact number of a responsible person who shall correct hazardous situations, should they occur, during times other than the normal working hours.

Directions and information given to the Superintendent shall be considered as having the same effect as if delivered to the Contractor and the Superintendent shall have full authority to execute the same and to supply materials, tools and labor without delay, and who shall be the legally appointed representative of the contractor. Contractor shall be liable for the faithful observation of any instructions delivered to Contractor's duly appointed representatives.

9.04 Character of Workers - Contractor shall provide competent, fully qualified personnel to perform the work and shall at all times maintain good discipline and order among its employees and Subcontractors. Any employed person or Subcontractor who is found to be incompetent, intemperate, troublesome, disorderly or otherwise objectionable or who fails or refuses to perform the work properly and acceptably, shall be immediately removed from the work by the Contractor and shall not be reemployed. Such discharge shall not be the basis of any claim for compensation or damages against the City of San Carlos or any of its officers, employees or agents.

9.05 Laws to be Observed - The Contractor shall be fully informed of, and at all times observe and comply with all Federal, State and County laws, including those of CAL-OSHA; all municipal

ordinances and regulations of the City of San Carlos; and all orders and decrees of bodies having jurisdiction over the work. The Contractor shall also cause all agents and employees engaged on the project to observe and comply with all such laws, and shall protect and indemnify the City of San Carlos and all officers, employees, and agents thereof connected with the work against any claim or liability arising from or based on the violation of any such law

- (a) *Non-Discrimination* – Attention is directed to Labor Code, Section 1735 which reads as follows: “No discrimination shall be made in the employment of persons upon public work because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status or sex of such persons, except as provided in Government Code, Section 12940 and every Contractor for public works violating this Section is subject to all the penalties imposed for a violation of this chapter.”
- (b) *Alien Labor* - The Contractor shall forfeit as penalty to the City of San Carlos fifty dollars (\$50.00) for each alien with no permit to work in the United States of America (USA) knowingly employed in the contract, by Contractor or by any hired Subcontractor upon any of the work herein mentioned, for each calendar day, or portion thereof, during which such alien is permitted or required to labor in violation of the provisions of the Labor Code and in particular Sections 1850 to 1854 thereof, inclusive.
- (a) *Hours of Labor* – Hours of labor shall be pursuant to Labor Code, Sections 1810. Pursuant to Labor Code, Sections 1813, Contractor shall forfeit to the City, as a penalty, twenty-five dollars (\$25.00) for each worker employed in the execution of this Agreement by Contractor, or any Subcontractor in violation of the terms of this Section or in violation of the provision of any law of the State of California. Such forfeiture amounts may be deducted from the contract sum. Contractor and each Subcontractor shall keep, or cause to be kept, an accurate record showing the actual hours worked each calendar day and each calendar week by each worker employed on the project, which record shall be kept open at all reasonable hours to the inspection of the City, its officers and agents, and to the inspection of the appropriate enforcement agency of the State of California.
- (d) *Prevailing Wage* – As identified in the Notice to Bidders, the work contemplated by this agreement is a public work subject to prevailing wages under California Labor Code, Sections 1720 et. seq. The State of California Department of Industrial Relations has ascertained the general prevailing per diem wage rates in the locality in which the work is to be performed for each craft, classification, or type of worker required to perform the work. A schedule of the most recent general prevailing per diem wage rates made available to the City will be on file at the City’s principal facility office and will be made available to any interested party upon request. This prevailing wage rate schedule is provided by the City for Bidder’s information only and is not guaranteed by the City to be current. Contractor is obligated to verify all appropriate prevailing wage rates and pay those rates as required. By this reference the verified current schedule of prevailing wage rates is made part of the Contract Documents. Contractor shall pay not less than the prevailing per diem wage rates, as specified in the schedule and any amendments thereto, to all workers employed by Contractor in the execution of the work. Contractor shall cause all subcontracts to include the provision that all Subcontractors shall pay not less than the specified prevailing per diem wage rates to all workers employed by such Subcontractors in the execution of the work.

Contractor shall forfeit to the City, as a penalty, no more than fifty-dollars (\$50.00) for each calendar day or portion thereof for each worker that is paid less than the specified prevailing per diem wage rates for the work or craft in which the worker is employed for any portion of the work done by Contractor or any Subcontractor in violation of the provisions of the Labor Code, and in particular Sections 1770 to 1781 thereof, inclusive. Such forfeiture amounts may be deducted from the contract sum. Contractor shall also pay to any worker who was paid less than the specified prevailing per diem wage rate for the work or craft for which the worker was employed for any portion of the work, for each calendar day, or portion thereof, for which the worker was paid less than the specified prevailing per diem wage rate, an amount equal to the difference between the specified prevailing per diem wage rate and the amount which was paid to the worker.

The City will not recognize any claim for additional compensation because of the payment by the Contractor for any wage rate in excess of prevailing wage rates set forth in the Agreement, including payment in excess of the prevailing wage for extra work paid by force account. The possibility of wage increases is one of the elements to be considered by the Contractor in determining the Contractor's bid and will not, under any circumstances be considered as the basis of a claim against the City under the Agreement.

- (e) *Payroll Records* - Pursuant to Labor Code, Sections 1776, Contractor and all Subcontractors shall keep an accurate payroll record, showing the name, address, social security number, job 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 in connection with the work. All payroll records shall be certified as being true and correct by Contractor or Subcontractors keeping such records; and the payroll records shall be provided to the City no later than three weeks after closing of payroll. The Contractor and all Subcontractors must also furnish electronic certified payroll records to the Labor Commissioner of the State of California, Department of Industrial Relations.
- (f) *Apprentice Program* - Attention is directed to State of California Labor Code, Sections 3095, 1777.5, 1777.6, and 1777.7 and Title 8, California Code of Regulations, Section 200, and the applicable Sections that follow. Responsibility for compliance with these requirements lies with the Contractor. To ensure compliance and complete understanding of the law requiring apprentices, and specifically the required ratio thereunder, Contractor or Subcontractors should, where some question exists, contact the Division of Apprenticeship Standards, 425 Golden Gate Avenue, 4th Floor, San Francisco, California, 94102 or one of its branch offices prior to commencement of the work. In the event Contractor willfully fails to comply with this Section, it will be considered in violation of the requirements of the Contract.

Nothing contained herein shall be considered or interpreted as prohibiting or preventing the hiring by Contractor or Subcontractors of journeyworker trainees who may receive on-the-job training to enable them to achieve journeyworker status in any craft or trade under standards other than those set forth for apprentices.

- (g) *Safety Program* – the Contractor shall conform to the rules and regulations pertaining to safety established by the California Division of Industrial Safety and to all requirements as set forth in the State of California Construction Safety Orders (CAL-OSHA), and in particular, Article 3 of these Safety Orders, regarding Accident Prevention and safety meetings. Within ten (10) working days following the Notice of Award the Contractor shall provide a copy of the Contractor's Safety Plan. The price paid for the plan is included in the various contract items of work and no additional compensation will be made therefore.

9.06 Permits and Fees – Unless otherwise stated in the Special Provisions, the Contractor shall procure all permits, registrations and licenses, including a City business registration, pay all charges and fees, and give all notices necessary for lawful prosecution of the work. All permits, registrations, licenses, and other authorizations shall be secured in sufficient time to prevent delays to the work. The Contractor shall comply with the provisions of said permits, licenses and other authorizations. The contractor shall submit satisfactory proof to the City, prior to issuance of the Notice to Proceed, that such permits, registrations or licenses are and will be in effect throughout the entire life of this contract. The contractor shall keep all permits, registrations and licenses posted on the job site.

For City Capital Improvement Construction Projects, the Contractor shall obtain a "No Fee" encroachment and/or building permit. Contractor shall coordinate through the Engineer to insure that all appropriate construction inspections occur.

9.07 Coordination and Cooperation - Construction work by utility companies or other Contractors may be needed or may be occurring simultaneously within or adjacent to the limits of work for this project. The Contractor shall coordinate and cooperate with all other Contractors and utility companies

throughout the duration of this project to avoid delays and minimize interference and conflicts. Cooperation will be required in the arrangement for the storage of materials, and in the detailed execution of the work. It is the Contractor's responsibility to ascertain the nature of work by others, coordinate the work, and install, modify, and maintain traffic control as necessary to avoid interferences and delays on the construction activities. Failure of the Contractor to keep informed of the work progressing on the site and failure to give written notice of lack of progress or defective workmanship by others shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with Contractor's work.

Where the work of one trade joins or is on the other's work, there shall be no lack of continuity or discrepancy when work is completed. In conforming one kind of work with another, marring or damaging other work will not be permitted. Should improper work of any trade be covered by another which results in damage or defects, the whole work affected shall be made good by the Contractor without expense to the City.

The City reserves the right to perform work or allow others to perform work, as necessary, within or adjacent to the limits of this project, at any time. If the Contractor or any of the Subcontractors or employees causes loss or damage to any separate Contractor on the work, the Contractor, by agreement or arbitration, if they deems it necessary, will settle any claim for such loss or damage. If such separate Contractor shall sue the City, on account of any loss so sustained, the City shall notify the Contractor, who shall indemnify and hold harmless the City against any loss or damage arising therefrom, including the cost and expense of defending any such suit.

If any portions of the work specified herein are to be installed in any right-of-way owned by the State, County, Municipality, or other public entities or public utilities, it shall be incumbent upon the contractor to familiarize described above will necessarily be subject to their inspection and approval before acceptance of these portions of the work by the Engineer. Any costs for inspection by agents other than those of the City shall be borne by the contractor. Where other agencies have jurisdiction over some portion of the work, and the requirements of the agencies are at variance with this specification, then that portion of the work shall be done in accordance with the requirements of the agency(ies).

The Contractor shall absorb in the bid all costs involved in coordinating the work with others. The Contractor will not be entitled to additional compensation from the City for damages resulting from such simultaneous, collateral and essential work.

9.08 Use of Premises - The Contractor shall confine construction activities to the project limits; which shall consist of right-of-way, easements and/or property owned by the City of San Carlos. With prior approval of the Engineer, adjacent street right-of-way may also be utilized for day-to-day operations. Unless approved by the Engineer, no storage of materials and equipment will be allowed to remain within the right-of-way during non-working hours, on the weekends, or during holidays.

Each day, after the completion of construction operations, unless otherwise approved by the Engineer, the project limits shall be secured and made accessible to the public. All excess materials and equipment not protected by approved traffic control devices (such as k-rails) shall be relocated to a staging area or demobilized. Trench spoils shall be off-hauled daily and open excavations shall be protected with steel plates.

Personnel of Contractor and Subcontractors shall not occupy, live upon, or otherwise make use of the project site during any time that work is not being performed at the project site, except as otherwise provided for in the Contract Documents for issues such as site security.

9.09 Construction Staging and Field Office - If additional space beyond the construction limits is necessary for staging, the Contractor shall, make special arrangements with neighboring property City(s) to secure a staging area for a field office and/or material and equipment storage, at Contractor's expense. The staging area must be fenced, with screening, and shall be operated in a manner that minimizes the inconvenience to neighbors.

The Contractor is encouraged to negotiate side agreements with the property owners of such sites prior to submitting bids. Prior to occupying the staging area, the Contractor will be required to provide to the Engineer a copy of the agreement or temporary construction easement granted by the property owner. A written release from the property owners or City, holding the City harmless from liability, will also need to be provided. In addition to approval from the property owners, the Contractor may also need to secure a Use Permit from the City's Planning Division.

9.10 Site Security - Contractor shall be responsible for the care and custody of work and the site, including all necessary security provisions, on a 24-hour per day basis throughout the entire term of the Agreement. The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality and fitness of materials to be used in the work.

9.11 Construction Water – The Contractor is responsible for obtaining all water required for the project and shall work with, and obtain all permits from, the appropriate water purveyor prior to obtaining construction water. If hydrant water is to be used, the Contractor must first obtain a hydrant meter and pay all related expenses. Direct connections to hydrants without a meter are not allowed. If water trucks are used, they shall be installed with backflow prevention devices. The cost of water, including all associated fees, deposits or permits shall be incorporated into the various bid items and no separate payment shall be made. Water purveyors include:

California Water Service Company

Bayshore District - Customer Center
341 North Delaware St.
San Mateo, CA 94401-1727
M-F: 8 a.m. to 4:30 p.m.
Tel.: (650) 558-7800
infoBAY@calwater.com

Mid-Peninsula Water District

3 Dairy Lane
P.O. Box 129
Belmont, CA 94002
M-F: 8 a.m. to 4:30 p.m.
Tel.: (650) 591-8941
midpeninsulawater.org

9.12 Project Site Maintenance – All work identified in this section shall be considered as part of the contract bid items, and no separate payment will be made thereof.

- (a) *Disposal of Material* - Unless otherwise shown on the plans or specified herein, all excess materials and materials removed from existing improvements shall become the property of, and be disposed by the Contractor. The Contractor shall be responsible for all costs associated with disposing all excess materials in a safe and legal manner. No material shall be placed on private or public property without prior approval from the City and the property owner. The Contractor shall not allow any refuse, excavated material, surplus concrete or mortar, or any associated washings, to be disposed upon paved streets, into manholes or into the City's storm drain system.

Contractor shall establish a system for daily collection and disposal of waste materials from construction areas and elsewhere on the site. Contractor shall handle waste materials that are hazardous, dangerous, or unsanitary separately from inert waste by containerizing appropriately. Burning or burying of waste materials on site will not be permitted.

All materials removed from the existing improvements, which in the opinion of the Engineer have salvage value, shall be delivered to the City Corporation Yard at 1000 Bransten Road, San Carlos, or at any other site designated by the Engineer within the City and shall be considered as part of the contract bid items, with no separate payment will be made thereof.

- (b) *Cleanup and Dust Control* – at all times during construction, including weekends and holidays, and throughout all phases of construction, including work suspensions and until final acceptance of the project, the Contractor shall keep the work site clean and free from rubbish, debris, and prevent the formation of an airborne dust nuisance.

Materials and equipment shall be removed from the site as soon as they are no longer necessary. Upon completion of the work and before final inspection, the entire site shall

be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance.

The Contractor shall abate dust nuisance by cleaning, sweeping, and sprinkling with water, those excavated areas of dirt or other materials which are prone to causing dust, within both the project site and the storage or staging area. If required or directed by the Engineer, the Contractor shall provide an approved water truck of large capacity with spraying capability and/or street sweeper.

The Contractor shall be required to apply water for dust control immediately during construction efforts and within one (1) hour after notification by the Engineer that an airborne nuisance exists. If dust control is not adequate, in the opinion of the Engineer, the Engineer will have this work performed by others and will deduct such cost from the total contract price.

All hauling trucks or other construction vehicles leaving the site shall be cleaned of mud or dirt clinging to exterior body surfaces or wheel rims before traveling on City streets outside the work limits. All trucks coming to or leaving the site with materials or loose debris shall be loaded in a manner, which will prevent the dropping of materials or debris on City streets. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately.

When construction operations cause dirt to be deposited on public streets, the Contractor shall immediately remove such material. Streets shall be cleaned by street sweeping, rather than flushing, so as to prevent mud from entering the storm drain system.

Excess excavated material shall be removed from the site immediately. Sufficient material may remain for use as backfill if permitted by the specifications. Forms and form lumber shall be removed from the site as soon as practicable after stripping.

Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend work until the condition is corrected. No additional compensation will be allowed as a result of such suspension.

- (c) *Air Pollution Control* - The Contractor shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.
- (d) *Noise Control* - The Contractor shall make every reasonable effort to control noise generated as a result of construction to the satisfaction of the Engineer. Use of an air compressor, jackhammer or other loud, vibrating sound generating device shall be limited to operations between the hours of 8:00 a.m. and 6:00 p.m. Monday thru Friday and between 9:00 a.m. to 5:00 p.m. on Saturday and Sunday, unless otherwise authorized by the Engineer.
- (e) *Vermin Control* - At the time of acceptance, structures entirely constructed under the contract shall be free of rodents, insects, vermin and pests. Necessary extermination work shall be arranged and paid for by the Contractor as part of the contract work within the contract time and shall be performed by a licensed exterminator in accordance with requirements of governing authorities. The Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.
- (f) *Sanitation* - The Contractor shall provide and maintain enclosed toilets for the use of employees engaged in the work. These accommodations shall be maintained in a neat and sanitary condition. They shall also comply with all applicable laws, ordinances and regulations pertaining to the public health and sanitation of dwellings and camps.
- (g) *Wastewater* - Wastewater systems shall not be interrupted. Should the Contractor disrupt existing sewer facilities, the Contractor shall immediately notify the Engineer, and the Contractor shall establish a plan, subject to the approval of the City, to convey the sewage in closed conduits and disposed of it back into the sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.

- (h) *Temporary Light, Power and Water* - The Contractor shall furnish, install, maintain, and remove all temporary light, power, and water, including piping, wiring, lamps, and other equipment, necessary for the work at Contractor's expense. The Contractor shall not draw water from any water source, except to extinguish a fire, without first obtaining permission from the appropriate water utility company/agency.
- (i) *Storm Water Pollution Control* – All work shall conform to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) ("General Permit"), and the NPDES Municipal Regional Stormwater Permit (MRP) (Order No. R2-2015-0049, NPDES No. CAS612008). The Contractor shall implement all applicable San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) measures and Best Management Practices (BMPs). Failure to comply with the approved construction BMPs will result in the issuance of correction notices, citations and/or a stop work order.

The Contractor shall submit to the City a Stormwater Pollution Prevention Plan (SWPPP) or Water Pollution Control Plan (WPCP), prepared in compliance with all NPDES requirements. The SWPPP/WPCP prepared by the Contractor shall address how the Contractor will prevent materials from being rinsed or washed into the storm drain system and specify which BMPs will be implemented for preventing sediment and pollutant discharges into the storm water system. The Contractor shall provide for the construction of facilities which may be required to prevent, control, and abate water pollution.

All construction efforts shall be conducted in a manner which prevents the release of hazardous material or hazardous waste into the soil or groundwater, and minimizes the discharge of pollutants into the storm drain system. No pollutants will be allowed to enter the storm drainage system. The Contractor shall be responsible for containing and removing any waste from the Contractor's construction operations using the appropriate BMP. The Contractor shall be responsible for cleaning catch basins of solid or liquid waste materials originating from the Contractor's operation before this material migrates further into the storm drain system. Violation of this provision shall cause the City to issue a stop-work notice and take necessary action to require the Contractor to correct and comply with regulations. All costs related to the stop-work action and corrective work to come into compliance shall be fully borne by the Contractor.

Existing Drainage Conditions - If the work performed interferes with established drainage patterns, ample provisions shall be made by the Contractor to correct the interference. The City may also direct the Contractor to take additional measures to be performed at the Contractor's expense.

Illicit Discharge - No dumping or discharge of construction materials, debris, and hazardous materials will be permitted into the City's storm drainage system. In the event of any discharge, leakage, spill or emission of hazardous materials, Contractor shall promptly notify the City and shall clean all affected property. The Contractor shall indemnify, hold harmless and defend the City against all liability incurred as a result of any such discharge, leakage, spill or emission, regardless of whether such liability, cost or expense arises during or after the term of the permit.

9.13 Preservation of Property - The Contractor shall be responsible for the protection of public and private property adjacent to the work.

Due care shall be exercised to avoid damage to existing roadway improvements and facilities, adjacent property, roadside trees, lawn and shrubbery not designated for removal, pole lines, fences, signs, survey markers and monuments, buildings and structures, conduits, pipe lines under or above ground, sewer and water laterals, and any other improvements or facilities within or outside the limits of construction. As ordered and approved by the Engineer, the Contractor shall provide and install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored, at the Contractor's expense, to

a condition as good as when the Contractor entered upon the work, or as good as required by the Contract Documents.

Existing striping damaged during construction within and adjacent to the project site shall be replaced with thermoplastic. Partially damaged striping (such as what might occur trenching through a pavement legend), shall be replaced in their entirety.

Contractor shall preserve carefully bench marks, reference points, and stakes; in case of willful or careless destruction, will be charged with the resulting expense of replacement and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

Any survey monuments that are damaged or removed as part of the construction shall be replaced by the Contractor and a Record of Survey, as required by State law, shall be filed by a licensed Land Surveyor at the Contractor's expense.

The fact that any such improvement or facility is not shown upon the plans shall not relieve the Contractor of responsibility under this Section. It shall be the Contractor's responsibility to ascertain the existence of any underground improvements or facilities indicated on the plans, indicated by locating services, or as evidenced by facilities visible in the field.

Contractor shall protect the work, supplies and materials from damage due to the nature of the work, the action of the elements, trespassers, or any cause whatsoever which is under Contractor's control, until the completion and acceptance of the work. Neither the City nor any of the City's agents assume any responsibility for collecting indemnity from any person(s) causing damage to the work of the contractor.

9.14 Protection of Buried Utilities – When the Contractor's attention is directed to the existence of pipes, cables, culverts, and other underground structures and improvements which may or may not be shown on the plans, it is the responsibility of the contractor to ascertain the exact location of such underground utilities in advance of any digging operations so that they shall not be disturbed or damaged by the Contractor during the progress of the work. All expenses of whatever nature arising from such disturbance or replacement or repair thereof shall be borne by the contractor.

If the location of pipelines being installed by the contractor under this contract conflicts with the location of existing pipelines, contractor shall so notify the Engineer in writing. The Engineer will ascertain the location of the existing utility in question and may require relocation of the pipeline being installed for the convenience of the Contractor. It shall not be construed that the City or the Engineer is in any way required or obligated to locate or relocate pipelines to locations other than shown on the contract plans. If the Engineer relocates pipelines at the request of the contractor, the contractor shall bear all the expenses incurred in connection therewith.

9.15 Protection of Bridges - Contractor shall be responsible for any damage they may cause to bridges, culverts and road structures. The Contractor shall determine in advance the allowable safe load for each structure and, if necessary, provide special shoring and support at Contractor's expense.

9.16 Protection of Traffic Signal Facilities - The Contractor shall give at least seventy-two (72) hours advance notice to the Engineer before commencing any street work (such as pavement grinding or trenching) that may potentially damage any traffic signal detection loop wires or any other signal facility. This requirement is in addition to any Underground Services Alert notifications. The City will then mark the underground traffic signal facilities.

The Contractor shall not proceed with any grinding, trenching or other underground work until it has been verified with the Inspector that signal facilities have been marked.

In the event that the Contractor's construction activities cause any failure of a traffic facility, it shall be repaired and be made fully operable within 24-hours of the damage occurring. In the event that

such repair is not undertaken within this time limit, the City may repair the facility at the Contractor's expense.

9.17 Restoration of Adjacent and Existing Improvements - Contractor shall do all cutting, fitting, or patching of the work required to make all parts of the work come together properly with existing and adjacent conditions.

Unless otherwise provided, the Contractor shall repair or replace all existing improvements (e.g., curbs, sidewalks, driveways, fences, signs, utilities, street surfaces, structures, etc.) damaged or removed as a result of the Contract operations. Repairs and replacements shall be at least equal to existing improvements, and shall match in terms of condition, finish and dimension to the satisfaction of the Engineer.

All Underground Services Alert (USA) markings, including the initial markings made by the Contractor and those markings placed by others in response shall be removed at the Contractor's expense when they are no longer required. Acceptable means of removal include sand blasting, high pressure washing, or other means approved by the Engineer.

All traffic signs and street signs within the limit of work necessarily removed during the various phases of operations shall be temporarily reset by the Contractor at or near the original location upon completion of each phase of construction operations. Prior to removal of all traffic control signs, the Contractor shall submit photographs of the site which show the existing location of these signs so that upon completion the photographs will aid in resetting the signs at or near their original location. Traffic control signs and street signs will be replaced upon completion of the work and the cost of removal and replacement shall be considered as part of the contract bid items, and no separate payment will be made thereof.

Rural type mail boxes shall be maintained by the Contractor in a manner satisfactory to the property owner and postal service, and the Contractor shall relocate the same as soon as possible to a permanent location in accordance with postal regulations and in a location acceptable to the property owner.

Any object to be removed and reused at other locations shall be removed with due care and delivered or stored at the project's construction storage area, or if approved by the Engineer, at any other site designated by the Engineer within the City. Such objects may consist of street light poles, signal mast arms and other objects directed by the Engineer. Items not approved by the Engineer for reuse purposes, and without salvage value, shall become the property of the Contractor, to be disposed of at Contractor expense, in an acceptable manner.

9.18 Archeological Remains - If human and/or archeological remains are uncovered during excavation. All earthwork within one-hundred (100) feet of these materials will be stopped until a Coroner and/or professional archeologist (SCA) and/or the Society of Professional Archeology (SOPA) has had an opportunity to evaluate the significance of the find and suggest appropriate mitigation measures.

9.19 Access to Private Property - The Contractor shall schedule and perform operations so as to minimize disruption of access to private property. Prior to blocking access to any private driveway or parking lot entrance, the Contractor shall notify the residents, business owners or tenants of pending closure and allow residents to remove vehicles. During non-working hours no driveway, house or parking lot shall be denied access to a public roadway.

The Contractor shall coordinate with the adjacent property owners and businesses and maintain vehicle and pedestrian access to their properties at all times. Temporary access ramps, fencing, or other measures shall be provided as needed.

9.20 Traffic Control and Public Convenience – The Contractor shall provide for safe movement of all vehicular, bicycle and pedestrian traffic through and around the construction operations with as little inconvenience and delay as possible. The Contractor shall have no amount of work under construction other than what he can properly prosecute with due regard to the rights and convenience of the public.

Proper conveyance of vehicular traffic and pedestrians through the work area depends upon navigating under unexpected situations. The means of clarifying such conditions to the public include the Contractor's use of signs, flagmen, pavement markings, barricades, lights, cones and delineators. No one standard sequence of signs or control devices will suit all conditions which may result from construction operations. Even for the same work, the conditions may vary from hour to hour, requiring adjustment and revisions of the traffic control in effect. The traffic control requirements specified herein are therefore intended to establish general principles to be observed in the control and regulation of traffic through and around the construction operations anticipated for this project. The requirements set forth in this Section represent the minimum traffic control requirements imposed and the Contractor shall be solely responsible for providing the full extent of traffic control measures that are necessary. Only individuals trained in the principles of implementing traffic control and/or traffic control flagging shall be assigned that responsibility at the work site.

- (a) *Traffic Control Plan* – The Contractor shall submit a Traffic Control Plan to clearly describe proposed traffic control measures. The plan shall be generally in accordance with the illustrations included in the “California Manual of Uniform Traffic Control Devices” and the “Work Area Traffic Control Handbook”, (Building News Incorporated P.O. Box 3031, Terminal Annex, Los Angeles, CA 90051). The submittal shall consist of scaled drawings for each situation anticipated to be encountered, i.e., intersections, mid-block (each during working and non-working hours), etc. The drawings shall show signs, traffic control devices and flagmen as required.

The Traffic Control Plan shall be directed equally to the regulation and protection of non-vehicular traffic including pedestrians, bicyclists, joggers, skaters, skateboarders, etc. The Contractor shall provide for the protection and separation of non-vehicular traffic from construction operations at all times. No work involving the implementation of traffic control shall begin until the Engineer has reviewed and has no exception to the traffic control plans. The Contractor may implement a revised Traffic Control Plan only with subsequent review with no exceptions by the Engineer.

- (b) *Traffic Control Devices* - Traffic control devices shall be provided in sufficient quantities and types as required to provide safe and adequate traffic control. During hours of darkness, approved lights and/or flares shall be included, in proper working order, to illuminate signs and hazards and alert approaching traffic. Barricades shall be furnished and maintained along all open trenches in contact with traffic. No work may begin on any day or at any time before traffic control devices have been placed, test driven and, if required, adjusted and revised. All traffic control devices shall be placed in accordance with the Manual of Uniform Traffic Control Devices and the Contractor's favorably reviewed traffic control plans. Locations of devices shall be adjusted to suit the conditions and circumstances of each detour situation. In all cases, signs shall be placed to most effectively convey their messages to approaching traffic.

The Contractor shall maintain all traffic control devices, at proper locations and in proper working order, at all times during construction operations and whenever a hazard resulting from Contractor's operations exists. The Contractor shall adjust and revise traffic control devices, placement, etc., to suit changing conditions around construction operations. Traffic control devices shall remain in place at all times, as required to alert approaching traffic of upcoming hazards. After hazards have been removed, all traffic control devices shall be removed. Temporary signs shall be removed or their messages covered.

Daily traffic control measures shall continue until cleanup activities have been satisfactorily completed and all of the Contractor's equipment has been removed from the traveled way.

- (c) *Traffic Control Detours* - The Contractor shall direct, divert and detour traffic through, around and adjacent to construction operations in accordance with the traffic control plans specified in the Contract Documents or in accordance with the Contractor's favorably reviewed traffic control plans.

1. Field Review of Detours - Immediately after traffic control devices have been placed, the detour shall be test driven by the Engineer or Inspector and the Contractor's Superintendent. The test drive shall include approaches to the detour from each possible direction, and traverse the full length of each detour route. The Contractor shall adjust and revise all traffic control devices as determined to be required by the test drive and the test drive shall be repeated, if determined necessary by the Engineer or Inspector. The Contractor shall provide additional traffic control devices as required to maintain the flow of traffic throughout construction operation.
2. Diverting Bicycle and Pedestrian Traffic – Whenever construction operations obstruct the flow of bicycle and pedestrian traffic or present a hazard to bicycles and pedestrians, the Contractor shall take appropriate action to protect and separate bicycles and pedestrians from the work area. Such action may include placement of barricades between bicycles and pedestrians and the work areas, placement of warning signs, and provisions utilizing personnel as required to protect and maintain access for bicycles and pedestrians as conditions warrant.
3. Diverting Vehicular Traffic - Whenever construction operations obstruct the flow of vehicular traffic or present a hazard to vehicles operating in the vicinity of construction operations, the Contractor shall take appropriate action to warn, detour and otherwise protect approaching drivers and vehicles.
4. Flagmen - The Contractor shall employ flagmen as required for each specific detour and at all locations where barricades and warning signs cannot control the movement of traffic. A warning sign shall be placed ahead of the flagman reading: "Flagman Ahead." The distance between the sign and the flagman should be based on the average traffic speed, allowing approximately fifty (50) feet for each ten (10) miles per hour. During hours of darkness, flagman stations shall be illuminated such that the flagman will be clearly visible to approaching traffic. Lights for illuminating the flagman station shall receive favorable review by the Engineer. The flagman shall wear a red or orange warning garment when flagging. Flagmen shall be provided with approved red flags or STOP/SLOW hand paddles, and two-way radios for communication. When flagging during hours of darkness, the flagman shall signal with a red light or flare and shall have a belt and suspender harness outside any garments fitted with reflectors or made from reflectorized cloth, unless the garment is well reflectorized in one of these ways.
5. Notice to Agencies - The Contractor shall notify the Engineer and all agencies having jurisdiction over the work, in writing, at least ninety-six (96) hours, excluding holidays and weekends, prior to instituting any lane closure or detour. At the end of each workday, the Contractor shall inform the Engineer, Police Department and Fire Departments of the status of all detours, lane restrictions, or road closures. The Contractor shall cooperate and coordinate with the various parties involved in the collection and removal of trash and garbage, the transit providers, the U.S. Postal Service, and others, as necessary, in order to maintain existing schedules and services.
6. Emergency Vehicle Access Through Detours - During all detours and/or street closures the Contractor shall provide for the movement of emergency vehicles through the work area. It is essential that the Contractor's work and equipment does not impede emergency access.
7. Night Detours - The Contractor shall not be permitted to maintain any lane closure or road closure during non-working hours without first obtaining written approval from the Engineer. During non-working hours the Contractor shall restore travel lanes to their original alignment and configuration by means of placing temporary asphalt pavement or bridging with steel plates. The Contractor shall place "ROUGH ROAD" signs conforming to the Manual of Uniform Traffic Control Devices at uneven temporary pavement or bridging

locations. See General Provisions, Section 9.18 (b), "Trench Safety Requirements".

8. Temporary Traffic Lanes – Temporary traffic lanes shall be at least ten (10) feet wide, or eleven (11) feet wide around curves. Provide an additional two (2) feet of clearance from curbs. The length of temporary lanes should be limited to the area under construction and the distance necessary to divert traffic.
- (d) *Parking Restrictions* - The Contractor shall post approved "No Parking" signs at all locations necessary to establish work areas and detour traffic. Signs shall read: "NO PARKING - CONSTRUCTION TOW-AWAY ZONE," show the actual day and hours of parking restriction and indicate the telephone number of the City's Police Department or agency having jurisdiction. Signs shall be placed at least forty-eight (48) hours in advance of the restriction. The Engineer shall approve the location and duration of no parking limits and verify their placement. "No Parking" signs shall be removed when no work is under construction and must be reposted forty-eight (48) hours before the resumption of construction activities.

For any violation of "No Parking" signs by motorists, the Contractor shall contact and coordinate directly with the City's Police Department for removal of vehicles in accordance with the California Vehicle Code. The Contractor shall also coordinate with the Police Department directly for enforcement and towing of parked vehicles.

9.21 Safety - The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the work. The Contractor's responsibilities shall specifically provide for the safety of persons involved in the project, other persons who are affected by the performance of the work, the work in place, materials and equipment to be incorporated in the work, the project site, and adjoining property.

The services of the City in conducting inspection or construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's work methods, equipment, bracing, shoring or scaffolding, or safety measures, in, on, or near the construction site.

Safety vests and personal protection equipment shall be worn by the Contractor, all subcontractors and other personnel when working or present on the site. Hard hats shall be worn when working around earthmoving or any heavy construction equipment or during any overhead construction work.

Payment for performing all work necessary to provide safety measures shall be included in the bid items for which safety measures are required and no additional compensation will be made.

- (a) *Safety Orders* – The Contractor shall have at the work site, copies or suitable extracts of: Construction Safety Orders, Tunnel Safety Orders, and General Industry Safety Orders issued by the State Division of Industrial Safety. The Contractor shall comply with provisions of these and all other applicable laws, ordinances, and regulations.
- (b) *Trench Safety Requirement* - As required by California Labor Code, Section 6705 and in addition thereto, for any excavation of any trench or trenches five (5') feet or more in depth, the Contractor shall submit to the Engineer for review, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. Structural calculations prepared, stamped and signed by a Registered Engineer licensed to practice in the State of California shall accompany the plan to verify the structural safety and adequacy of the sheeting, shoring and bracing to be used on the project. No such plan shall allow any shoring, sloping or a protection system less effective than that required by the Construction Safety Orders of the State Division of Occupational Safety and Health.

The maximum length of open trench shall be three-hundred (300) feet or the distance that pipe can be installed in a single day as determined by the Engineer. Trenches shall

be backfilled and covered with two (2) inches of cutback (in paved areas) or bridged with tack-welded steel plates at the end of each workday. Cutback shall be placed around plate edges to provide a smooth transition and to secure against displacement.

As soon as possible under the provisions of these specifications, the Contractor shall backfill all excavations and restore to usefulness all improvements that existed prior to the start of construction.

- (c) *Confined Space Entry Program (CSEP)* - Entry into permit-required confined spaces as defined in Section 5157, Title 8, California Code of Regulations (CCR) may be required as a part of the work. All manholes, tanks, vaults, pipelines, excavations, or other enclosed or partially enclosed spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The Contractor shall be responsible for implementing, administering, and maintaining a confined space entry program (CSEP) in accordance with Sections 5156, 5157, 5158, Title 8, CCR and shall implement such a program prior to performing any work in a permit-required confined space. A copy of the permit shall be available at all times for review by the Contractor and City personnel at the work site.

Prior to starting work, the Contractor shall prepare and submit its comprehensive CSEP to the Engineer. The CSEP shall address all potential physical and environmental hazards and contain procedures for safe entry into confined spaces, including, but not limited to the following:

1. Training of personnel
2. Purging and cleaning the space of materials and residue
3. Potential isolation and control of energy and material inflow
4. Controlled access to the space
5. Atmospheric testing of the space
6. Ventilation of the space
7. Special hazards consideration
8. Personal protective equipment
9. Rescue plan provisions

The Contractor's CSEP submittal shall also include the names of the Contractor's and Subcontractor's personnel assigned to the project who will have CSEP responsibilities, their CSEP training, their specific assignment and their responsibilities in carrying out the CSEP.

Payment for implementing, administering, and providing all equipment and personnel associated with the CSEP shall be included in the bid items for which the CSEP is required and no additional compensation will be made.

- (d) *Hazardous Conditions: Contractor's Responsibility for Precautions* - Contractor agrees that if, during the progress of the work, a hazardous condition is identified which involves a risk of bodily harm to any person or a risk of damage to any property, the Contractor will take such special precautions as shall be necessary to make the progress of the work safe under such condition. Conditions may result from, but are not limited to, the use of specified materials or equipment, the location of the work, the condition of the site, the kind or method of construction, or the manner in which any of the work is required to be done. The Contractor agrees to assume the sole responsibility for determining whether any such hazardous condition exists or will be created during the course of the work.
- (e) *Use of Explosives* – Explosives may be used only when authorized in writing by the Engineer, or as otherwise stated in the Specifications. Explosives shall be handled, used, and stored in accordance with all applicable regulations. No explosive material shall be transported to, stored or utilized on the site without written permission of Engineer. All blasting work and handling of explosives on the site shall be done only by

qualified persons who possess a valid permit. The Engineer's approval of the use of explosives shall not relieve the Contractor from liability for claims caused by blasting operations.

- (f) *Special Hazardous Substances and Process* – Materials that contain hazardous substances or mixtures may be required on the work. A Material Safety Data Sheet as described in California Code of Regulations, Section 5194 shall be requested by the Contractor from the manufacturer of any hazardous products used and submitted to the Engineer.

Hazardous material usage shall be accomplished with strict adherence to California Division of Industrial Safety requirements and all manufacturer warnings and application instructions listed on the Material Safety Data Sheet and on the product container label. The Contractor shall notify the Engineer if a specified product cannot be used under safe conditions.

9.22 Patent Fees or Royalties - All fees, royalties or claims for any patented invention, article or method that may be used upon or in any manner connected with the work under this contract shall be included in the price bid for the work and the contractor and the Contractor's sureties shall protect and hold the City, together with all the City's officers, agents, servants and employees, harmless against any and all demands made for such fees or claims brought or made by the holder of any invention or patent and, before the final payment is made on account of this contract, contractor shall, if requested by the Engineer, furnish acceptable proof of a proper release from all such fees or claims.

Should the contractor, his agents, servants or employees, or any of them, be enjoined from furnishing or using any invention, article, material or appliance supplied or required to be supplied or used under this contract, the contractor shall promptly substitute other articles, materials or appliances, in lieu thereof, of equal efficiency, quality, finish, suitability and market value and satisfactory in all respects to the Engineer. Or, in the event that the Engineers elects in lieu of such substitution to have supplies and to retain and use any such invention, article, material or appliance as may be required by the contract to be supplied – in that event, the contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for the City, the City's officers, agents, servants and employees, or any of them to use such invention, article, material or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the contractor neglect or refuse to make the substitution promptly, or to pay such royalties and secure such licenses as may be necessary, then, in that event, the Engineer shall have the right to make such substitution or the City may pay such royalties and secure such licenses and charge the cost thereof against any monies due the contractor from the City or recover the amount thereof from the Contractor and any sureties notwithstanding final payment under this contract may have been made.

9.23 Advertising - The names of the Contractor or Subcontractors, with their addresses and the designation of their particular specialties, may be displayed at the job site on removable signs only if written approval is received from the Engineer. Commercial advertising material shall not be attached to, or painted on the surfaces of, any buildings, fences, canopies, or barricades.

9.24 Antitrust Claims – Attention is directed to Public Contract Code, Section 7103.5 which provides: "In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or Subcontractor offers and agrees to assign to the City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec 15) or the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or subcontract. The assignment shall be made and become effective at the time the City tenders final payment to the Contractor, without further acknowledgement by the parties."

9.25 Audit and Examination of Records – The City and entities and agencies designated by the City, shall have access to, and the right to audit and examine at no additional cost, all of the Contractor's project related data including but not limited to, books, estimates, records, contracts, bid cost data, Subcontractor and supplier job cost data, change orders, correspondence, instructions, drawings,

receipts, vouchers, purchase orders, notes, computations, daily logs, and memoranda relating to the work. Pursuant to Government Code, Section 8546.7, the Contractor shall preserve all such records and will be subject to examination and audit by the State Auditor, at the request of the City, for a period of three (3) years after final payment under the Agreement.

9.26 Notice of Entrance - Before entering any private property the contractor shall give the owner, tenant and inspector a minimum of forty-eight (48) hours written notice.

9.27 Additional and Emergency Protection - Wherever, in the opinion of the Engineer, the contractor has not taken sufficient precautions for the safety of the public or the protection of the works to be constructed under this contract, or of adjacent structures or property which may be injured by processes of construction on account of such neglect, and whenever, in the opinion of the Engineer, an emergency shall arise and immediate actions shall be considered necessary in order to protect personal and property interest, whether public or private, then and in that event, the Engineer, with or without notice to the contractor, may provide suitable protection to the said interests by causing such work to be done and such material to be furnished as shall provide such protection as the Engineer may consider necessary and adequate.

The cost and expense of such work and material so furnished shall be borne by the contractor and if the same shall not be paid on presentation of the bills therefore, then such costs shall be deducted from any amounts due or to become due the contractor. The performance of such emergency work under the direction of the Engineer shall in no way relieve the contractor from any damages which may occur during or after precaution has been taken by the Engineer.

9.28 Placing Portions of Work in Service - Portions of the work may be placed in service as completed if desired by the City. Contractor shall give proper access to the work for this purpose. Such use and operation shall not constitute an acceptance of the work and the work, and the contractor shall be liable for defects due to faulty construction until the entire work under the contract is finally accepted.

9.29 Rights-of-Way - The City will provide all rights-of-way and easements in or beneath which pipes and other structures will be constructed by the Contractor under this contract. If through the failure of the City to acquire or clear title to rights-of-way, the Contractor sustains loss which could not have been avoided by the judicious handling of forces and plant, there shall be paid to the contractor such amount as the Engineer may find to be a fair and reasonable compensation for such part of the Contractor's actual loss as the Engineer deems unavoidable. Actual loss shall be understood to include no items other than necessary payments, idle time of men, idle time of equipment, cost of extra moving of equipment, and cost of longer hauls, with no allowance in any case for overhead or profit. If performance of the Contractor's work is delayed as a result of the failure of the City to acquire or clear title to rights-of-way, a commensurate extension of time will be granted.

SECTION 10 - MEASUREMENT AND PAYMENT

10.01 Measurement of Quantities for Unit Price Work - Materials and items of work which are to be paid for on the basis of measurement shall be measured in accordance with the methods stipulated in the particular sections of the Contract Documents involved. Unless specifically stated otherwise in this contract, no extra measurement(s) according to local custom of any kind shall be allowed in measuring the work under this contract; only the length, area, solid contents, number, weight, or time in standard units, as the case may be, shall be considered as specified.

Unless otherwise specified, quantities of work shall be determined from measurements or dimensions in the horizontal planes. Stationing shall be along the street centerline, lengths of sanitary sewers, storm drains and water lines shall be measured as the horizontal distances from center to center of structures, rounded to the nearest foot, and lengths of all return radii and curb data shall be measured along the face of curb. Volumetric quantities shall be the product of the mean area of vertical or horizontal sections and the intervening horizontal or vertical dimensions. Measurements shall be in accordance with U.S. Standard Measures. A pound is an avoirdupois pound. A ton is two-thousand (2,000) pounds avoirdupois. The unit of liquid measure is the U.S. gallon.

When payment is to be made on the basis of weight, the weighing shall be done on certified platform scales or, when approved by the Engineer, on a completely automated weighing and recording system. The Contractor shall submit to the Engineer with duplicate licensed Weighmaster's certificates showing the actual net weights. The City will accept the certificates as evidence of the weights delivered.

10.02 Bid Items - Should any bid item be eliminated in its entirety, payment will be made to the Contractor for actual costs incurred, in connection with such eliminated contract work, and for costs incurred prior to the date of the Engineer's written notification eliminating such work. The actual costs to be paid to the Contractor shall be computed in the same manner as if the work were to be paid on a force account basis. No compensation will be made to the Contractor, in any case, for loss of anticipated profits. Increased or decreased scope involving a change order will be paid as stipulated in the change order.

The estimated value of work performed, for lump sum bids or lump sum bid items will be determined from the schedule of values, to be prepared by the Contractor and presented at the preconstruction meeting. Elements of work on the schedule of values shall be separated into groupings appropriate for the project. The Technical Specifications may be used as a guide for establishing these groupings. Move-in costs, bond and insurance costs, and submittal preparation costs can be included in the schedule of values under a separate mobilization line item. This line item shall not exceed five-percent (5%) of the contract's value. Overhead and profit shall not be allowed as a line item, but shall be prorated over other items of work.

10.03 Bid Quantities - The quantities listed in the Bid Schedule for each bid item do not govern final payment. Payments to the Contractor will be made only for the actual quantities of contract items constructed in accordance with the plans and specifications. If upon completion of the construction, the actual quantities show either an increase or decrease from the quantities given in the bid schedule, the contract unit prices will still prevail.

Payment will not be made for materials wasted or disposed of in a manner not called for under the contract. This includes rejected material not unloaded from vehicles, material rejected after it has been placed and material placed outside of the plan lines. Unless otherwise provided, no payment will be made for materials delivered to the site but not incorporated in the work. Such quantities will not be included in the final pay quantities. No compensation will be allowed for the disposal of rejected or excess material.

When the estimated quantity for a specific portion of work is designated on the Bid Schedule as a "Final Pay Quantity", the estimated quantity specified shall be the final quantity for which payment for

such specified portion of the work will be made, regardless of the actual quantity constructed, unless the dimensions of said portions of the work shown on the plans are revised by the Engineer. If such dimensions are revised and such revisions result in an increase or decrease in the quantity of such work, the final quantity for payment will be revised by the amount represented by the change. The estimated quantity for any portion of the work designated as a Final Pay Quantity shall be considered as approximate only and no guarantee is made that the quantity, which can be determined by computations, based upon the details and dimensions shown on the plans, will equal the estimated quantity. No allowance will be made in the event that the quantities based upon computations do not equal the estimated quantities. Final pay quantities will be designated on the Bid Schedule with the letter (F) and shall only apply to the corresponding portions of work specifically designated on the plans. Any portion of work not designated as a final pay quantity will be measured and paid for as specified under other provisions of the Contract Documents.

10.04 Progress Payments – On or about the 25th day of each month may be designated as the date which would terminate each working month for the purpose of making progress payments.

The Contractor's request for a progress payment shall be submitted under cover of the Request for Progress Payment form approved by the Engineer. The Request for Progress Payment form shall be complete and properly executed by the contractor, and have, as attachments, the items listed on the form.

The Contractor shall, on the date established, prepare and submit a progress estimate to the City for work accomplished during the previous working month, based on the various contract bid items and the unit bid prices. Invoices shall include amounts previously paid, itemized retention and any deductions or additions authorized by change order. Consultation with the Engineer may be necessary to determine the amount of work accomplished.

The first progress payment will not be made until the following submittals have been provided and accepted: list and schedule of submittals, Baseline Construction Schedule, schedule of values (if applicable), SWPPP. Subsequent progress payment requests will not be accepted unless accompanied by the progress payment cover letter, an updated baseline or revised schedule, a certification that the record drawings have been updated as of the date of the invoice.

Upon receipt of a progress payment request, the City shall, within ten (10) working days, determine if the request is proper, and if disputed the City will return the progress payment to the Contractor along with a written document setting forth the progress payment request's shortcomings. Following receipt of an undisputed and properly submitted progress payment request, the City shall authorize payment within thirty (30) calendar days.

Contractor may request partial payment for materials delivered to the site but not yet incorporated into the work (materials on hand). To receive consideration for payment of materials on hand, the Contractor shall provide the Engineer with a list of such materials at least five (5) working days prior to submitting the monthly estimate of amount earned for work completed. At the Engineer's sole discretion, up to seventy-five-percent (75%) of the estimated value of materials on hand may be considered for payment, subject to the following:

- (a) Only materials which have received favorable review of shop drawings will qualify.
- (b) Eligible materials must be delivered and properly stored, protected, and maintained in a manner favorably reviewed by the Engineer, at the job site or at a bonded warehouse.
- (c) The Contractor's actual net cost for the materials must be supported by paid invoices to suppliers or other documentation requested by the Engineer.
- (d) Materials delivered to the site less than thirty (30) days prior to their scheduled incorporation in the work shall not qualify.
- (e) Partial payments for materials on hand shall not be deemed to be final payment for the material nor relieve the Contractor of any obligations under the Contract.

- (f) Partial payments for materials on hand shall be subject to retention.

From each progress estimate, five percent (5%) will be deducted and retained by the City, and the remainder of the amount due, less the amount of all previous payment will be paid to the Contractor provided all work invoiced has been completed and approved by the Engineer.

The Engineer may withhold or nullify, the whole or any part of any payment to such extent as may be necessary to protect the City from loss on account of any of the following:

- (a) Defective or vandalized work not remedied,
- (b) Damage to the City or another Contractor,
- (c) Claims filed, or reasonable evidence indicating probable filing of claims,
- (d) Stop notices, or failure of the Contractor to make payments properly to subcontractors or laborers or suppliers, in which case 125% of the stop notice amount shall be withheld until a release form is received,
- (e) A reasonable doubt that the contract can be completed for the balance unpaid,
- (f) Reasonable evidence that the work will not be completed within the contract time and that the unpaid balance of the contract sum would not be adequate to cover the City's liquidated damages assessed in accordance with the Agreement for the anticipated delay,
- (g) Failure of Contractor to maintain, update and submit record documents, schedules or other submittals as required by the Contract Documents,
- (h) Performance of work by Contractor without properly processed shop drawings;
- (i) Any other failure of Contractor to perform its obligations under the Contract Documents.

The Contractor may elect to receive one hundred percent (100%) of payments due under the contract from time to time, without retention of any portion of the payment by the City, by depositing and maintaining securities of a value equivalent to the retention amount with the City in accordance with the provisions of Public Contract Code, Section 22300. Such securities, if deposited by the Contractor, shall be valued by the City's Administrative Services Director, whose decision on valuation of the securities shall be final.

Contractor warrants that, upon submittal of an application for payment, all work for which payment has been previously issued by the City and received by the Contractor, shall be free and clear of all claims, stop notices, security interests, and encumbrances in favor of Contractor, Subcontractors, or other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment relating to work.

The payment of progress payments by the City shall not be construed as an absolute acceptance of the work done up to the time of such payments and shall not constitute acceptance of defective work.

10.05 Retentions - The City shall retain five percent (5%) of the amount of each progress estimate, and the accumulation of said amounts so retained from the progressive payments to the extent unencumbered will be paid to the contractor in no less than thirty-five (35) days after the completion and acceptance by the Engineer and the City of the work done.

Upon contractor's request, City will make payment of funds withheld from progress payments pursuant to the requirements of Code Section 14402 if contractor deposits in escrow with the City, or with a bank acceptable to the City, securities eligible for the investment of State funds under Government Code Section 16430 or bank or savings and loan certificates of deposit, upon the following conditions:

- (a) Contractor shall bear the expense of the City and the escrow agent in connection with the escrow deposit made.

- (b) Securities or certificates of deposit to be placed in escrow shall be of a value at least equivalent to the amounts of retention to be paid to the contractor pursuant to this section.
- (c) Contractor shall enter into an escrow agreement satisfactory to the City, which agreement shall include provisions governing inter alia:
 - 1. Amount of securities to be deposited.
 - 1. Providing of powers of attorney or other documents necessary for the transfer of the securities to be deposited.
 - 2. Conversion to cash to provide funds to meet defaults to termination of the contractor's control over the work, stop notices filed pursuant to the law, assessment of liquidated damages or other amounts to be kept or retained under the provisions of the contract.
 - 3. Decrease in value of securities or deposit.
 - 4. Termination of the escrow upon completion of the contract.
- (d) Contractor shall obtain the written consent of the surety to such agreement.

10.06 Final Payment - The City shall, prior to final acceptance, provide the Contractor with a copy of the final quantities for the various contract bid items and a summary of contract change orders for review. All prior payments shall be subject to correction in determining the total contract sum. The Contractor shall reply promptly in writing, to indicate either concurrence or an explanation of possible discrepancies in the total contract sum.

The project will not be submitted to the City Council for acceptance until the Engineer and the Contractor concur with the totals of all quantities, costs, contract change orders and the total contract sum. Following concurrence, a semi-final payment will be made to the Contractor after deducting all previous payments and all amounts to be retained under the provisions of the contract. The retention payment shall be due and payable as a final payment after the expiration of thirty-five (35) days following the date of final acceptance of the work by the City Council.

If within the time fixed by law, a properly executed notice to stop payment is filed with the City, due to Contractor's failure to pay for labor or materials used in the work, all money due for such labor or materials will be withheld from payment to the Contractor in accordance with applicable laws.

If releases are required, the Contractor shall pay or cause to be paid to Subcontractors the amount stated in the conditional releases within five (5) days after receipt of the semi-final payment, and shall promptly thereafter furnish evidence of such payment to the City.

The securities deposited by the Contractor will be released, providing that the following requirements of the contract have been fulfilled:

- (a) Satisfactory completion of all construction work and written acceptance of said work by the City;
- (b) The submission by the Contractor to the Engineer of all required stop notice releases, submittals, written guarantees, warranties, operating manuals, and other project related documentation;
- (c) The return to the Engineer of all drawings and written specifications loaned to the Contractor during the construction period.
- (d) The submission by the Contractor to the Engineer of record documents and a set of red-lined drawings showing the revisions to the original set of drawings which reflect the actual construction of the project for preparation of "Record Drawings".

The Contractor agrees that the payment of the final amount due under the contract shall release the City of San Carlos from any and all claims or liability on account of all work performed under the contract, except those items previously made in writing and identified by the Contractor as unsettled. Release of the final payment by the City shall not be construed as an acceptance of any defective work or acceptance of improper materials.

10.07 Acceptance - Contractor shall notify Engineer in writing of the completion of the work, whereupon the Engineer shall promptly satisfy them self by personal inspection as to the actual completion of the work in accordance with the terms of the contract. After receiving a written recommendation from the Engineer for acceptance of the work, City shall accept or reject the work; stating, if the work is rejected, the requisite conditions for acceptance. When the City accepts the work, they shall file a Notice of Completion with the County Recorder in the county where the work is located and shall promptly notify the contractor in writing of the recordation. Contractor warrants and guarantees that title to all work, materials and equipment accepted by the City will pass to the City free and clear of all liens, claims, security interests or encumbrances, and that no work, materials or equipment accepted will have been acquired by the contractor, or by any other person performing the work at the site or furnishing materials or equipment for the project, subject to an agreement under which an interest therein or encumbrances thereon is retained by the seller or otherwise imposed by contractor of such other person.

10.08 Compensation for Extra or Omitted Work – Compensation for extra or omitted work shall be in accordance with Section 5.08, Change Orders.

10.09 Compensation to City for Extension of Time - In case the work called for under this contract is not completed within the time limit stipulated herein, the City shall have the right, as provided hereinabove, to extend the time of completion thereof. If the time limit so be extended, the City shall have the right to charge to the contractor and to deduct from the final payment for the work the actual cost to the City of engineering, inspection, administration, legal and other overhead expenses which are directly chargeable to the extension of time. The cost of final surveys and preparation of the final estimate shall not be included in such charges.

10.10 Claims - The term "Claim" shall mean a written demand or assertion by the Contractor seeking, as a matter of asserted right, adjustment in the terms of the Contract Documents, payment of money, extension of time, or other relief with respect to the Contract Documents, or determination of other disputes or matters in question between the City and Contractor arising out of or related to the Contract Documents or the performance of the work, including claims alleging an error or omission.

A claim must be stated with specificity, including identification of the event giving rise to claim, the date of the event, and the asserted effect on contract sum and contract time. The claim shall include adequate supporting data. Adequate supporting data for a claim for an adjustment of the contract time shall include scheduling data demonstrating the impact of the event on the completion of the work. Adequate supporting data for a claim for an adjustment of the contract sum shall include a detailed cost breakdown of the items allowed, isolating labor, material, and equipment costs, and providing detailed quantities and unit prices for changed work. If the exact amount of a claim is not ascertainable at the time such claim is made, the supporting data currently available shall be submitted. Supplemental data supporting the exact amount of the claim shall be submitted as soon as available.

Notwithstanding the making of any claim or the existence of any dispute regarding any claim, unless otherwise directed by the Engineer, the Contractor shall not cause any delay, cessation, or termination in the performance of the work, including portions of the work pertaining to a claim.

10.11 Time Limit on Claims - Contractor shall submit any and all claims, together with adequate supporting data to the Engineer as soon as possible but not later than ten (10) working days after occurrence of the event giving rise to the claim, or the date the Contractor first recognized, or reasonably should have recognized, the condition giving rise to the claim, whichever is earlier. Contractor hereby expressly waives all claims not made within this time limit.

Contractor is expressly barred from asserting any claims of which the Contractor was aware, whether or not the exact amount of such claims was ascertainable, that is not submitted to the Engineer prior to the Contractor proceeding with the work.

10.12 City Response to Claims - The Engineer shall promptly review claims. If additional supporting data is deemed necessary, the Engineer shall request such additional data within ten (10) working days after receipt of the claim. The Contractor shall furnish such additional data no later than ten (10) working days after receipt of the City's request. The Engineer shall render a decision promptly, but in any event, within thirty (30) working days after the receipt of the claim or the receipt of additional supporting data. If the amount of the claim is in excess of \$50,000, the aforesaid thirty (30) working day period shall be sixty (60) working days. Failure of the Engineer to render a decision within the aforesaid thirty (30) or sixty (60) working day period shall be deemed a decision denying the claim and the last day of such period shall be the date of such decision. The decision of the Engineer shall be final and binding unless appealed in accordance with the General Provisions, Section 10.15, "Appeal of the Engineer's Decision".

10.13 Appeal of Engineer's Decision - If Contractor disputes the Engineer's decision of a claim, the Contractor shall, within thirty (30) calendar days of the decision, make a written appeal of the decision to the Engineer. The written appeal shall include all supporting data upon which the Contractor requests the City to modify its decision, including all documentation transmitted between the Contractor and the Engineer on the underlying claim. The Engineer shall make a good faith effort to resolve the claim prior to final completion of the Project. In the event the claim is not resolved prior to final completion, the Contractor's claim shall be heard by the Director of Public Works prior to recommending final acceptance to the City Council. The Contractor's administrative remedies under the Contract Documents shall be exhausted after the decision of the Director of Public Works is rendered. In case of disagreement with the decision of the Director of Public Works, the Contractor may pursue the resolution of the dispute by presenting a formal claim to the City.

SECTION 11 - GUARANTY

11.01 Contractor's Guaranty - Prior to final acceptance, the Contractor shall warrant and guaranty to the City that all work is in accordance with the Contract Documents and is not defective.

The guaranty shall be accompanied by a warranty bond for ten percent (10%) of the final contract sum, which shall warrant the quality of the work for a period of two (2) years after acceptance. The guaranty and warranty bond shall be in accordance with the Agreement Forms furnished in the Contract Documents.

11.02 Correction of Defective Work During the Guaranty Period - If within two (2) years after the date of City Council acceptance, or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guaranty required by the Contract Documents, any work is found to be defective, the Contractor shall promptly without cost to the City and in accordance with the City's written instructions, 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 terms of such instructions within ten (10) working days after written demand by the City, the City may have the defective work corrected. The City may also correct defective work immediately in cases of emergency where delay would cause serious risk of loss or damage. All direct, indirect and consequential costs of correcting defective work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) shall be absorbed by the Contractor.

The Contractor shall remove from the Project site portions of the work and materials which are not in accordance with the Contract Documents and which are neither corrected by the Contractor nor accepted by the City. If Contractor fails to pay the costs of such removal within ten (10) working days after written demand, the City may, without prejudice to other remedies, sell such materials at auction or at private sale, or otherwise dispose of such material. The Contractor shall be entitled to the proceeds of such sale, if any, in excess of the costs and damages for which the Contractor is liable to the City, including reasonable attorneys' fees and expenses and compensation for the City's services and expenses.

The City shall have the option, at its sole discretion and by notice to the Contractor, to accept defective work as defined in Section 4.18 – "Acceptance of Defective Work. "

SPECIAL PROVISIONS

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SPECIAL PROVISIONS

These Special Provisions contain project specific requirements pertaining to the work, and as such, shall take precedence over the General Conditions portions of these Specifications. All costs associated with satisfying the requirements in these Special Provisions shall be included in the Contractor's bid price and no additional compensation shall be made.

1. DESCRIPTION OF WORK

In general, the Contractor shall furnish all labor, materials, equipment and services necessary to complete the project as further described in the "Instructions to Bidders" of these Specifications.

2. LOCATION

Work to be done under this contract is at within the vicinity of the Arroyo Avenue and Chestnut Street intersection, San Carlos, California as shown on the project plans.

3. QUALIFICATION OF BIDDERS

The Contractor must have a minimum of three (3) major projects which they have performed comparable work within the last three (3) years involving transportation improvements, such as pavement rehabilitation, Americans with Disabilities Act (ADA) compliant curb ramp construction, and rectangular rapid flashing beacon (RRFB) installation.

4. PROJECT INFORMATION SIGN

The Contractor shall provide signs for the residential work areas. Residential work area project signs may be mounted on Type II barricade on residential neighborhoods. The signs shall be coordinated with the City to obtain standard to conform to, including but not limited to having project signs at each end of an active work zone.

The Contractor shall coordinate with City for quantity total of signs for this project. Contractor to adjust project sign quantities accordingly pending how work will be performed (e.g., multiple locations vs lesser locations at once).

5. PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

If needed, Portable Changeable Messages Signs (PCMS) shall be placed a minimum four (4) weeks prior to the start of construction at a minimum of 100 feet from the project limits along Arroyo Avenue. Messaging on the PCMS signs shall submitted to the City for review and approval.

6. DAYS & HOURS OF OPERATION

The Contractor shall restrict construction activities to the following hours:

Schedule of Working Hours within Public Right of Way

Construction Location	Working Days	Working Hours
Residential/Local and Collector	Monday through Friday	8:00 a.m. to 4:00 p.m.
Downtown San Carlos	Monday through Friday	8:00 a.m. to 11:30 a.m. and 1:30 p.m. to 4:00 p.m.
Arterial	Monday through Friday	9:00 a.m. to 3:00 p.m.
No work shall be performed on Saturdays, Sundays, or designated legal holidays unless otherwise designated below.		

Exceptions may be made, at the Engineer's discretion, to allow work at other times and on other days if required for the Contractor's operations. In such cases, the Contractor shall have an alternate work schedule reviewed and authorized by the Engineer prior to commencement of work.

Activities outside of those hours shall not generate objectionable noise, dust, or inconvenience to the public. Regular working days are from Monday through Friday except City legal holidays unless exception is granted by the City Engineer.

Contractor to coordinate with nearby schools that may be affected by improvements and plan working hours to accommodate school's schedule when in session. Contractor shall note that these areas may experience higher volumes of traffic during student drop-off and pick-up, and shall adjust working hours to minimize any delays or disruption to traffic.

The project has a few interfacing streets. Contractor shall schedule operations so that minimal disturbance to businesses and residents will be occurred. In the public's best interest, improvements shall be scheduled in such a way as to avoid having multiple streets in the same neighborhood closed on the same day.

7. CONTROL OF WORK

The Contractor shall as the first order of work coordinate with all residents and businesses seventy-two (72) hours in advance of any work.

The following sequencing constraints are required on the project, shall be incorporated into the Contractor's master schedule and shall be reflected in the order of work.

1. Work at multiple project location sites shall be allowed after review and approval from City.

The Contractor shall use only chalk-based marking paint for all construction information painted on the street, sidewalks, or any other visible surface.

8. SEQUENCING AND ORDER OF WORK

The following sequencing constraints are required on the project, shall be incorporated into the Contractor's master schedule and shall be reflected in the order of work.

1. All underground utility construction and concrete flatwork shall be completed prior to final paving.

9. STAGING AREA

The City has not designated a staging area for this project. Should a staging area be desired, the Contractor shall be responsible for securing such an area along with any and all permits and permissions that may be necessary from the City and/or private property owners. Proof of concurrence shall be provided to the City upon request. Any fencing or other protective means (if required or employed by the Contractor) shall be at the contractor's expense.

10. FURNISHED MATERIALS

No materials will be provided by the City for installation by the Contractor.

11. NOISE CONTROL

The Contractor shall submit documentation showing that the construction equipment is equipped with the manufacturer's standard noise control equipment, or with an equally effective replacement that meets the manufacturer's specifications.

Construction equipment and vehicles that require back-up alarms will be equipped with ambient-sensitive backup alarms. The use of jake brakes is prohibited and gasoline-powered construction equipment must be equipped with an operating muffler of baffle system.

12. PROTECTION OF TREES

The Contractor shall protect all existing trees at their drip lines, as shown on the Contract Documents. Temporary chain-link fencing or plastic construction fence are acceptable as protective barriers for tree protection purposes. Fencing shall be a minimum of five (5) feet high. Tree protection shall remain in place until all construction is complete. The City reserves the right to issue a stop-work notice if the tree protection devices are not installed or if the devices are not maintained.

No excavations within the tree protection area are allowed unless approved by the City and under the supervision of a licensed arborist. Any filling within the tree protection area shall be done in accordance with a detailed improvement plan approved by the City. No trimming, cutting or pruning of designated trees or roots can occur without approval by the City and supervision of a licensed arborist.

No storage of materials, disposal of paints, solvents or other noxious materials, operation of equipment, parked cars, unnecessary trenching, grading or compaction shall be allowed within the drip line of any trees.

13. TIME OF COMPLETION AND LIQUIDATED DAMAGES

The Time of Completion and Liquidated Damages shall be as described in the Instructions to Bidders section.

14. LICENSES AND PERMITS

The Contractor and all subcontractors shall obtain a business license from the City of San Carlos and shall hold current licenses for the craft that the business is contracting for as required by Federal, State and Local laws.

The Contractor shall apply for any required permits, including encroachment and tree removal permits from the applicable agencies (with copies of the form and application submitted to the Engineer) within thirty (30) calendar days after the issuance of the Award of Contract Notification Letter and prior to beginning work in the affected areas. The Contractor shall submit copies of the permits, once issued, to the Engineer. No additional time schedule will be granted to the Contractor for any delays resulting from the processing of these permits.

A City of San Carlos "Encroachment Permit" is required. As a Contractor working for the City, no fee will be assessed to obtain an Encroachment Permit for this project.

If the construction work will require any street trees to be removed, Contractor shall obtain a "Street Tree Permit" from the City of San Carlos Department of Planning. Applications for Street Tree Permits are available by calling the **Department of Planning at (650) 802-4263**. It is the Contractor's responsibility to obtain fee information updates by calling the City Department of Planning.

A City of San Carlos "Hazardous Materials Storage System Permit" may be required for various construction activities. The Contractor is responsible for verifying to the requirements and fee schedule for storage of diesel fuel and/or hazardous materials by contacting the **San Carlos Fire Department at (650) 802-4300**. It is the Contractor's responsibility to follow any additional requirements as required by the 2016 California Fire Code.

15. "NO PARKING" SIGNS

The City will provide "NO PARKING" signs and the Contractor shall arrange for the pick-up of these signs a minimum seven (7) days prior to posting.

16. SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with all applicable occupational safety and health standards, rules, regulations and orders established by Federal and State Agencies.

Specific attention is directed also to OSHA safety rules, regulations and precautions to be taken by the Contractor before entering sanitary sewer manholes, and other sanitation structures with respect to physical and chemical hazards that may be present.

The area of work shall at all times be protected by means of an adequate number of cones, barricades, flags or whatever means is necessary to properly and safely protect both vehicular and pedestrian traffic.

Any condition deemed to be an unsafe condition shall be immediately corrected by the Contractor. The failure of the City or its representatives to bring a potentially dangerous situation to the Contractor's attention shall not relieve the Contractor from his responsibility for providing a safe work area.

Prior to opening a manhole cover, a gas monitor will be used check the atmosphere of that structure for oxygen level and presence of explosive, flammable, or toxic gases. Gas levels (O₂, H₂S, CO, LEL) will be recorded on a log sheet. If unsafe levels are recorded, Contractor shall attempt to ventilate the manhole for a period of up to about 15 minutes and then recheck gas levels. If unsafe levels still remain, Contractor shall notify the City. Contractor will not perform any field work in a manhole in which unsafe gas levels are recorded.

Should a confined space entry be required to retrieve equipment or for any other reason, the Contractor shall follow OSHA Confined Space Entry Requirements.

17. SAFETY OF PERSONS AND PROPERTY

The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damages, injury or loss to: All employees, City personnel, residents on the project, and all others who may be affected thereby;

1. All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of the Contractor's subcontractors; and
2. The work of the City or other contractors.

The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

The Contractor shall erect and maintain, as required by existing conditions and the progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities.

The Contractor shall designate a Site Safety and Health Officer who is a responsible member of the Contractor's organization and whose duty shall be the prevention of accidents. The Contractor shall submit the name of the Site Safety and Health Officer to the Engineer in writing. The Site Safety and Health Officer shall be responsible for preparation of a Health and Safety Plan.

The Health and Safety Plan shall detail the Contractors safety committee(s), safety rules, safety training, enforcement procedures, incentives, accident procedures and investigations, inspections, safety equipment and maintenance, hazardous materials (i.e. asbestos pipe) handling procedures, emergency action plan(s), alcohol and drug policies, confined space entry procedures, certification program and emergency retrieval procedures, 911 and emergency rescue services within jurisdiction of the work area, health providers and hospital emergency near the worksite.

18. PROTECTION OF EXISTING INSTALLATIONS

The Contractor is advised that when a portion of work will occur within a public easement located on privately owned property, where applicable, all work shall be confined to areas within easements. The Contractor will be required to correct or replace without delay any and all damage to existing landscaping structures and equipment resulting from his operation at no extra cost to the City.

19. CONTRACTOR'S PLANT AND EQUIPMENT

The Contractor shall at all times be responsible for the security of his plant and equipment. The City will not take any responsibility for missing or damaged equipment, tools or personal belongings.

20. WATER

Water for use during construction shall be furnished by the Contractor and all costs incurred including the water use, meter charges, meter/backflow preventer deposit, vehicles and containers needed in transporting water to the job site shall be paid by the Contractor. The Contractor's attention is directed to Section 9.11 of the General Provisions for additional information.

21. POWER

All power for and in connection with work to be done under this contract shall be furnished and maintained by Contractor. The Contractor's attention is directed to Section 9.12(h) of the General Provisions for additional information.

22. DUST CONTROL

The Contractor shall furnish all labor, equipment and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property or causing nuisance as defined by the Engineer.

The Contractor shall be responsible for any damage resulting from any dust originating from its operations.

The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the Engineer.

The use of water shall not be permitted as a substitute for sweeping or other methods of dust control. Only dry sweeping is allowed.

Contractor shall sweep daily. The work area shall be left in a neat and presentable condition at the end of each workday.

23. CLEANUP

Through all phases of construction, including suspension of work and until final acceptance of the project, the Contractor shall keep the worksite and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish and debris.

Contractor shall properly dispose of all excess earth, concrete, AC and debris off job site and clean up the work area at the end of each workday. The work area shall be left in a neat and presentable condition.

The Contractor shall keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Care shall be taken to prevent spillage on haul routes. Contractor shall obtain all required truck route permits. Any such spillage shall be removed immediately and the area cleaned by the Contractor.

Disposal of all rubbish and surplus materials shall be off the site of construction, at the Contractor's expense, all in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and the requirements of the OSHA Safety and Health Standards for Construction.

The Contractor is advised that the disposal of solid waste, sewage, industrial waste, or other polluted waters into the public storm drain system is prohibited. Any fines or penalties levied against the City or Contractor for illicit discharges to the storm drain system as a result of the Contractor's operation are the sole responsibility of the Contractor.

If the Contractor exceeds the number of days assigned to this contract, the Contractor shall continue to clean the area. When street cleaning is not performed to the satisfaction of the Engineer, the Engineer may have the area cleaned by City crews, and any incurred costs shall be deducted from the Contractor's progress payments.

24. CONSTRUCTION AND DEMOLITION DEBRIS

The City has an ordinance requiring that debris from construction and demolition activities be reused, recycled and/or salvaged so that it doesn't end up in a landfill. The Contractor shall provide sufficient evidence (weight tickets or other documents) to verify that some of debris is being recycled, reused and/or salvaged to the satisfaction of the Engineer.

25. CLEARING AND GRUBBING

The work shall include, but is not limited to, removal of the following: PCC/AC pavement and all other existing obstructions so designated on the plans, or as required by the Engineer or the Standard Specifications. The Contractor shall remove PCC/AC pavement to the limits as shown on the plans, or as directed by the Engineer, by sawcutting. Any and all pavement damaged by the Contractor shall also be saw-cut and removed as directed by the Engineer. Slurry from sawcutting shall be cleaned up by wet/dry shop vacuum.

All cleared and grubbed materials shall be hauled off and disposed outside of the right-of-way at a suitable location and in a lawful manner by the Contractor.

Unless shown on the plans, no trees shall be removed. Trees, limbs, and roots within the project area which interfere with the Contractor's operations may be trimmed, with authorization from the Engineer. Tree trimming shall only be performed by a qualified arborist or tree surgeon. Prior to any trimming being performed, the Contractor shall submit to the Engineer, for review, the qualifications of the proposed arborist or tree surgeon. Any tree roots one inch or greater in diameter which have to be removed or are damaged during construction operations shall be sawcut evenly and shall be treated with a heavy coat of commercially available water base asphalt emulsion sealing compound. If roots are to be left exposed for an extended period of time, all roots shall be covered immediately with two (2) layers of burlap or equivalent material and soaked regularly with water to ensure that all roots are kept moist for the duration of exposure. No tree shall be trimmed or removed without a permit from the Planning Department.

26. HAUL ROUTES – HOLLY STREET EAST OF EL CAMINO REAL PROHIBITED

The section of Holly Street between Old County Road and Industrial Road is politically sensitive as a residential area and is **NOT TO BE USED** as a Haul Route. Contractor shall therefore direct trucks not to use the Holly 101 Interchange when heading to and from the site. Trucks shall use Ralston Avenue or Brittan Avenue for freeway access.

27. SANITATION FACILITIES

The Contractor shall provide and service temporary sanitary facilities (porta-potties) and hand washing stations for the entire duration of the work at each site. Porta-potties and hand washing stations shall be provided in ADA accessible locations and be accessible to the public at all times. The location shall be at the direction of the City Engineer.

28. ARRANGEMENTS FOR TEMPORARY CONSTRUCTION FACILITIES

The Contractor shall be responsible for the allocation of space for temporary field offices and structures (if necessary) furnished by itself or its subcontractors; monitoring the use of temporary utilities; verification that adequate services are available to comply with requirements for work and climatic conditions; and the administration of traffic and parking controls.

The Contractor is advised that there may be insufficient area within the construction zone to provide parking, staging for material and storage of equipment. Coordinate locations for any off-site parking, staging and storage locations with the City during the pre-construction conference.

29. PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

The Contractor shall submit video DVDs of the job site to the Engineer, for review, prior to the start of construction, for the purpose of providing a record of existing conditions. Only DVD format and new DVDs shall be used. Each DVD shall be labeled and dated appropriately. The DVD shall provide a view encompassing the entire project area, for all construction activities including at a minimum, the proposed excavation areas and contractor's staging area, with sufficient clarity and scope to the satisfaction of the Engineer. The Contractor shall submit these DVD with a written log noting any existing defects or irregularities in the existing pavement. The log shall also state the location (by

station), date, and time the DVDs were made. Upon receipt by the Engineer, the DVDs shall become the property of the City.

If the Contractor plans to drive sheeting, the Contractor shall video inspect nearby structures prior to driving the sheeting. This video inspection shall be included in the site DVDs above, and shall be accompanied by a similar log which notes street address and existing defects or irregularities.

The Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property. The Contractor shall repair or replace all existing improvements which are not designated for removal (e.g., street sections, curbs, gutters, driveways, fences, walls, structures, landscaping, etc.) which are damaged or removed as a result of its operations. Repairs and replacements shall be at least equal to existing improvements, and shall match them in finish and dimensions.

Any damages to the private properties will be restored to the satisfaction of the property owners/Engineer within seven (7) days of the damage(s).

Damages within the public right of way will be restored to the satisfaction of the Engineer after work on that particular block is completed.

30. EXISTING UTILITIES

The Contractor shall notify Underground Service Alert (U.S.A) at 1-800-642-2444 for field location of all utilities 48 hours prior to any excavation. In addition, the Contractor shall contact the Railroad Call Before You Dig (CBUD) at 1-800-336-9193 for field location of utilities when work is within the railroad tracks a minimum of forty-eight (48) hours prior to any work.

The Contractor shall be responsible for verifying the presence of utilities within the limits of work, as well as any changes in the limits that are made to accommodate the project, protecting all utilities including but not limited to traffic signal conductors, signal interconnect communication, and fiber optic cables that may be affected by construction activities (e.g., clearing and grubbing, excavation, trenching, etc.), and notifying the Engineer in writing of any conflicts prior to beginning any excavation.

The Contractor shall pothole to verify the location and/or elevation of existing utilities as marked by Underground Service Alert (U.S.A.) within the limits of work. The Contractor shall work with utility companies and inspectors to protect existing utility lines. The Contractor shall notify the Engineer three (3) working days in advance of the potholing operation. Once the utilities are exposed, the excavation shall not be backfilled until the Engineer has inspected and taken measurements of the utilities.

Unless otherwise indicated on the plans, a pothole shall have a maximum length of six (6) feet, maximum depth as indicated on the plans or as directed by the Engineer, and the width dimension shall be as required by the Contractor with authorization of the Engineer.

The Contractor will protect and assume liability for all existing or newly installed structures and lines from damage by his forces during the construction period from the date of Notice to Proceed and the date of Final Acceptance.

All repairs of apparent or discovered utility facilities will be accomplished by the respective utility owners. The Contractor must coordinate with the utility companies to rewrap and/or repair their utility. All exposed existing telephone, gas, water, electrical and other public utility facilities will receive an envelope of twelve-inches (12") of sand.

All painted markings including USA and CBUD markings, marks placed by the Contractor, and marks placed by the City's survey crew on street pavement, curbs, gutters and sidewalks shall be completely removed by the Contractor prior to completion of the project. All cost incurred to complete this work shall be deemed included in other items of work and no additional payment will be made thereof.

31. UTILITY COORDINATION

All relocations of apparent or discovered utility lines (e.g., AT&T, PG&E, SJWC, etc.) shall be accomplished by the forces of the appropriate utilities. The Contractor shall notify the appropriate utility at least forty-eight (48) hours in advance of working in the vicinity of any utilities in the project area.

Existing utilities shown on the plans are for information only and their locations are approximate. The Contractor shall assume full responsibility for the location of all existing utilities, whether or not shown on the plans, prior to the commencement of any construction activity (e.g., excavation, clearing & grubbing, etc.) which may damage any existing utilities. Furthermore, the Contractor shall protect and assume liability for all existing utilities, whether or not shown on the plans, and any newly installed structures and lines from damage by contractor's forces for the duration of the construction period (from the date of Notice to Proceed until the date of Final Acceptance).

The Contractor must allow utility companies to rewrap their utilities. All exposed existing or new telephone, gas, water electricity or other public utility facilities shall receive an envelope in all directions of twelve-inches (12") of sand surrounding said utility(s) within the backfill area. This envelope shall be placed by the Contractor. All utilities must be supported by the Contractor when trench is opened.

32. OBSTRUCTIONS

The City shall not be responsible for any impact to the Contractor of any restrictions that may be caused by the work of other agencies, or the requirements thereof.

In the event that gas, electricity, telephone, water or other utility facilities are encountered, the Contractor shall immediately notify the Engineer and make the necessary coordination to have these structures (vaults, manholes, risers, valves, etc.) removed, relocated, and/or adjusted as necessary by the respective utility company unless specified in these Technical Specifications.

The storm and sanitary manholes, water valves, and monument covers shall be adjusted to grade by the Contractor as specified in these Technical Specifications. The Contractor

shall also notify and coordinate with utilities to raise and/or adjust vaults, cabinets, etc. to grade.

The Contractor is required to cooperate with forces engaged in utility work and shall schedule and conduct his own work in such a manner as to avoid any unnecessary delay or hindrance to the work of the utility companies.

If the Contractor causes damage to Traffic Signal Communication Cable(s), the Contractor shall replace at no cost to the City the complete run of Traffic Signal Communication Cable(s) to the next controller. No splicing of Traffic Signal Communication Cable(s) shall be allowed at pull box. No time extension shall be granted to re-pull/replace Traffic Signal Communication Cable(s).

33. OWNER / CONTRACTOR MEETINGS

- A. **PRE-CONSTRUCTION CONFERENCE:** A Pre-construction Conference will be held at the San Carlos City Hall, 600 Elm Street, San Carlos, CA 94070 within ten (10) working days after the date the Notice to Proceed is issued at the time and date described in the Notice to Proceed.

The conference will address the scope of work and the Contractor's proposed construction schedule, traffic control and detour plan. At the Pre-construction conference the Contractor shall provide the following, in addition to the items specified in Section 8.09 of the General Provisions:

- The proposed construction schedule (for overall project),
- Two-week look-ahead construction schedule,
- Draft of the notification letter to residents and merchants,
- The proposed traffic control plan,
- Project submittals.

The meeting shall be attended by:

- Contractor's representative, superintendent and major subcontractors,
- City's representative project manager and inspector,
- Design consultant team,
- Others as Appropriate.

- B. **WEEKLY CONSTRUCTION MEETINGS:** : A weekly construction will be held at the construction site or at San Carlos City Hall, 600 Elm Street, San Carlos, CA 94070 as determined by the City Project Manager/Inspector. The weekly meetings will be held on a day and time mutually satisfactory to the City and Contractor's representative and/or superintendent.

34. NOTIFICATION OF RESIDENTS AND MERCHANTS:

The Contractor shall perform the following tasks prior to commencement of the construction work:

- A. Prepare and leave at each location a notification letters Two (2) weeks and seventy-two (72) hours prior to the time of construction, stating nature of work and expected duration of construction activity affecting their property.

- B. Include Contractor's telephone number for the purpose of taking inquiries and complaints.
- C. Submit draft copy to City at Pre-construction conference.
- D. Final format and wording of this letter shall be subject to approval of Engineer.

35. STORM WATER POLLUTION PREVENTION

Consistent with the requirements of the federal Clean Water Act, the Project is subject to storm water pollution prevention requirements, which include the implementation of a water pollution prevention plan and/or implementation of local storm water requirements, which prohibit the discharge of pollutants from the Project site.

All work shall conform to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) ("General Permit"), and the NPDES Municipal Regional Stormwater Permit (MRP) (Order No. R2-2015-0049, NPDES No. CAS612008). The Contractor shall implement all applicable San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) measures and Best Management Practices (BMPs). Failure to comply with the approved construction BMPs will result in the issuance of correction notices, citations and/or a stop work order.

The Contractor shall include in the SWPPP any applicable California Department of Transportation Construction Site BMP Fact Sheets, or an approved equivalent. The Contractor is responsible for furnishing, installing, constructing, inspecting, maintaining, removing, and disposing of the BMPs as necessary throughout the entirety of the project. The Contractor shall inspect BMPs regularly, and correct improperly installed, damaged, or ineffective BMPs immediately. Site BMP inspections shall be performed in accordance with the approved SWPPP/WPCP, and at a minimum of two week intervals. Reports of each BMP inspection shall be provided to the City on a monthly basis.

Prior to the start of any field work, the Contractor shall prepare a Water Pollution Control Plan (WPCP), in accordance with the latest version of the California Department of Transportation "Water Pollution Control Program (WPCP) Preparation Manual" and template, or other approved template, for review and approval by the Engineer. The WPCP shall include, at a minimum, the selection of BMPs applicable to the project, and an erosion control plan detailing the locations on the project site where applicable BMPs will be implemented.

The Contractor shall include in the WPCP any applicable California Department of Transportation Construction Site BMP Fact Sheets, or an approved equivalent. The Contractor is responsible for furnishing, installing, constructing, inspecting, maintaining, removing, and disposing of the BMPs as necessary throughout the entirety of the project. The Contractor shall inspect BMPs regularly, and correct improperly installed, damaged, or ineffective BMPs immediately. Site BMP inspections shall be performed in accordance with the approved SWPPP/WPCP, and at a minimum of two week intervals. Reports of each BMP inspection shall be provided to the City on a monthly basis.

36. TRAFFIC CONTROL

Construction shall be organized so as to cause the least possible inconvenience to traffic.

Traffic control shall comply with the latest Caltrans Standard Plans and traffic control devices shall be furnished, placed, and maintained in accordance with the latest version of Part 6, Temporary Traffic Control, of the California Manual on Uniform Traffic Control Devices (CA-MUTCD).

The Contractor shall provide all required signs, barricades, lights, high-level flag trees, arrow boards, and other devices.

No work shall be performed on Saturdays, Sundays, or designated legal holidays. Exceptions may be made, at the Engineer's discretion, to allow work at other times and on other days if required for the Contractor's operations. In such cases, the Contractor shall have an alternate work schedule reviewed and authorized by the Engineer prior to commencement of work.

General Requirements:

1. The Contractor's attention is directed to Section 9.20 of the General Provisions for additional requirements.
2. The Contractor shall submit a traffic control plan to the Engineer for review, including any requests for alternate work schedules or work hours:
3. No work may begin under contract until the Traffic Control Plan has been approved by the Engineer. Time required for review and approval of the Traffic Control Plan shall not constitute a basis for time extension.
4. The Contractor shall maintain temporary AC surface to provide safe and comfortable passage for pedestrian and vehicular traffic.
5. At the end of each day, all trench or access pit excavations shall be either backfilled in accordance with Section 1301-4, "Bedding and Backfill," of these Technical Specifications, or covered with traffic rated non-skid steel plates. The steel plates shall be countersunk flush with the adjacent grade to provide a smooth surface if the plates are located within the traveled way of the road. Cutbacks shall be applied in gaps and/or at edges. Adjoining plates shall be tack-welded where the plates meet. Plates located outside of the traveled way shall be held in place by placing temporary asphalt around all edges.
6. The Contractor shall provide electric arrow board(s) for any lane closures and reductions, except for on residential streets.

Special Requirements:

1. The Contractor shall be responsible for providing and maintaining all temporary traffic control and safety devices, including all personnel necessary for effectively directing vehicular, pedestrian and bicycle traffic through the construction zone. The Contractor assumes sole and complete responsibility for the job and site conditions, including safety of all persons and property, from start until final acceptance of the project. This requirement shall apply continuously twenty-four (24) hours per day and shall not be limited to normal working hours.
2. Streets shall not be closed unless authorized by the Engineer in writing at least seventy-two (72) hours prior to the requested date. If street closure is approved, Contractor shall notify the following forty-eight (48) hours prior to the street closure:
 - a. City's project manager and inspector
 - b. City of San Carlos Police Department, (650) 802-4277
 - c. City of San Carlos Fire Department, (650) 780-7400
 - d. City of San Carlos Garbage, Recycling, and Tree Trimming Haulers
 - e. Recology San Mateo County (650) 595-3900
 - f. SamTrans
 - g. Nearby schools
 - h. Impacted residents and businesses
3. If emergency or urgent street closures are required, the Contractor shall notify:
 - a. City's project manager and inspector
 - b. City of San Carlos Police Department, (650) 802-4277
 - c. City of San Carlos Fire Department, (650) 780-7400
4. If construction will obstruct a bus stop, the Contractor shall notify the SamTrans Operations Control Center seventy-two (72) hours in advance at (650) 508-6200.
5. Access for local residents and businesses and all private property shall be maintained at all times. Signs shall be placed in front of commercial and industrial driveways to allow continual access. At the end of each working day these streets shall be reopened to through traffic with proper barricades, warning devices and temporary striping. If these streets are closed, the Contractor shall proceed expeditiously and with consideration for public convenience from the start of work to its completion.

37. CONSTRUCTION SCHEDULE

The Contractor shall submit to the Engineer, for review, a construction schedule in Critical Path Method (CPM) format with accompanying bar chart setting forth the sequence in which construction will proceed. In addition, the Contractor shall submit an updated CPM schedule for review along with the monthly request for partial payment. The City may, at its sole discretion, withhold partial payment until an updated CPM schedule is submitted.

38. STREET SWEEPING

Street sweeping using a mechanical sweeper with vacuum capabilities shall occur, at a minimum, every Wednesday and Friday at the end of the working day. The Contractor shall clean and sweep roadways and on-site paved areas of all materials attributed to or involved

in the work. In addition, the Contractor shall clean and sweep roadways as necessary to ensure that vehicle and pedestrian travel is not endangered by the presence of loose materials. Construction site entrances shall be kept free of these materials.

39. PROTECTION OF PUBLIC SAFETY

If the Contractor encounters a condition where public safety is threatened (such as, but not limited to, a pipe hole, pipe collapse, stoppage, blockage and/or eminent sewer spill) the City's representative shall be notified immediately. Furthermore, the Contractor shall provide a visual record of the section of line containing the condition within eight (8) hours to City. If the CCTV camera becomes lodged inside the sewer and cannot be retrieved, the Contractor shall inform the City immediately. It is the Contractor's responsibility to remove the camera and ensure that the sewer is not damaged and Sanitary Sewer Overflows (SSOs) do not occur.

40. DAILY WORK REPORTS

The Contractor shall provide the City Inspector with daily work reports at the beginning of each working day for a report of the previous working day. Contractor to coordinate with City to obtain form standard to conform to.

41. SUBMITTALS

The Contractor shall provide one electronic copy in PDF format of the construction submittals. Each submittal shall be numbered. Re-submittals shall include the original submittal number followed by a letter indicating the revision (i.e. "A" for the first revision, "B" for the second revision). Submittals shall be provided as required by the Contract Documents. The Contractor shall be responsible for conforming to the requirements of the specifications. The Contractor shall provide, at a minimum, the following submittals to the City **within twenty (20) calendar days** after the issuance of the Award of Contract Notification Letter and prior to beginning work.

Each submittal item shall include a signed cover sheet, of which a template will be provided by the City. The cover sheet shall be filled out completely and legibly.

42. RECORD DRAWINGS

Upon completion of the project, the Contractor shall provide an electronic and hard copy of the project plans provided to the Contractor at the start of the project with any red line changes to the system configuration that were identified in the field.

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BID ITEM DESCRIPTIONS

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BID ITEM DESCRIPTIONS

0-1.01 GENERAL

Bid item descriptions are included below.

It is the intent of the Proposal and this Contract Document that the bid for each lump sum or unit price item, as submitted, and as required by the Contract Documents. All costs in connection with the work, including labor, materials, testing and equipment to fully complete the work, shall be included in the lump sum or unit price named in the Proposal. No item of work required by contract documents for proper and successful completion of the contract will be paid for in addition to the prices submitted in the Proposal. **All work not specifically set forth in the Proposal as a pay item shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in prices shown in the Proposal.**

Full compensation for conforming to the requirements in the Special Provisions (unless otherwise noted) shall be considered as included in the contract prices paid for the various items of work involved and no separate payment will be made therefor.

0-1.02 MEASUREMENT AND PAYMENT

Lump sum bid items will be measured as a complete job, and are intended to cover payment for all work in connection with the item as indicated on the approved project plans ("Plans") and as described throughout in these project specifications ("Specifications").

Unit price bid items will be measured as described in the bid schedule or specifications.

BID items for this project are as follows:

MOBILIZATION

The contract lump sum price for "Mobilization" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in mobilization including remobilization, demobilization costs and efforts, obtaining all bonds, all Contractor-acquired permits, bonds, licenses, agreements, certifications, and public and agency notifications; submittal and approval of initial and progress schedules and submittals; moving onto the site of all equipment, staff including obtaining and setting up of Contractor's staging area/yard; furnishing and erecting all needed construction facilities, fencing, project signage; project security; preconstruction photographs and video recording of surface features; progress schedules and reports; contract meetings; and record drawings as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

TRAFFIC CONTROL

The contract lump sum price for "Traffic Control" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved including preparing typical and/or detailed traffic control plans, placing, adjusting and removing temporary traffic control measures, such as, but not limited to, flags, cones,

barricades, crash barriers, signs, and flaggers (personnel dedicated to controlling and managing traffic); furnishing, installing and removing CIP project signs, traffic control signs both as required by the Contract Drawings and as part of the approved traffic control plan; incidentals necessary for worker, pedestrian and traffic protection, including furnishing all equipment, materials and personnel associated therewith; providing traffic control for project work areas and duration of the project as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

STORM WATER POLLUTION CONTROL

The contract lump sum price for "Storm Water Pollution Control" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved including but not limited to furnishing, installing, and maintaining all plant, labor, materials, tools, permits, permit fees, and equipment required for preparation, placement, implementation and maintenance of stormwater pollution prevention measures as outlined the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) ("General Permit"), and the NPDES Municipal Regional Stormwater Permit (MRP) (Order No. R2-2015-0049, NPDES No. CAS612008); implementing all applicable San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) measures and Best Management Practices (BMPs); preparing The Water Pollution Control Plan (WPCP) in accordance with the latest version of the California Department of Transportation "Water Pollution Control Programs (WPCP) Preparation Manual" as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE AC (FOR CONCRETE IMPROVEMENTS)

The contract price paid per square foot for "Remove AC (for Concrete Improvements)", shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removal and disposal of asphalt concrete, base, subgrade, including furnishing, constructing, maintaining, removing, and disposing of temporary asphalt concrete tapers (e.g., at driveways and utility structures), as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE AC (FOR ROAD IMPROVEMENTS, 4" TO 12" DEPTH)

The contract price paid per square foot for "Remove AC (for Road Improvements, 10" to 15" Depth)" to install 10" deep lift AC where shown on plans, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removal and disposal of asphalt concrete, base, subgrade, including furnishing, constructing, maintaining, removing, and disposing of temporary asphalt concrete tapers (e.g., at driveways and utility structures), as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE SEEDED CONCRETE

The contract price paid per square foot for "Remove Seeded Concrete" shall include full

compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in saw cutting, demolishing, removal and disposal of the existing concrete sidewalk, base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE PCC CURB AND GUTTER

The contract price paid per linear foot for "Remove PCC Curb and Gutter" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in saw cutting, demolishing, removal and disposal of existing concrete curb and gutter and base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE PCC CURB

The contract price paid per linear foot for "Remove PCC Curb" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in saw cutting, demolishing, removal and disposal of existing concrete curb and gutter and base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE PCC SIDEWALK AND CURB RAMP

The contract price paid per square foot for "Remove PCC Sidewalk and Curb Ramp" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in saw cutting, demolishing, removal and disposal of the existing concrete sidewalk (including existing concrete curb ramp), base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE LANDSCAPE

The contract price paid per square foot for "Remove Landscape" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the removal and disposal of existing landscape and/or other material, as specified herein, complete in place as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE 17" TREE

The contract price paid per each for "Remove 17" Tree" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

REMOVE 24" TREE

The contract price paid per each for "Remove 24" Tree" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

2" AC GRIND

The contract price paid per square foot for "2" AC Grind", shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in grinding asphalt concrete surfacing and disposing of grinded material, including furnishing, constructing, maintaining, removing, and disposing of temporary asphalt concrete tapers (e.g., at driveways and utility structures), complete in place as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

INSTALL PCC CURB & GUTTER

The contract price paid per linear foot for "Install PCC Curb & Gutter" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in protecting and incorporating existing pipe drains into the new work, preparing the subgrade, trimming tree roots (2-inches or smaller in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, and placing curing compound as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

INSTALL PCC CURB

The contract price paid per linear foot for "Install PCC Curb" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in protecting and incorporating existing pipe drains into the new work, preparing the subgrade, trimming tree roots (2-inches or smaller in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, and placing curing compound as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

INSTALL PCC CURB RAMP

The contract price paid per square foot for "Install PCC Curb Ramp" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in preparing the subgrade, trimming tree roots (2-inches or smaller in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, installing the truncated domes, installing the retaining curb (as applicable), fence/wall/header/bricks/decorative rock/stones of varying material replacement in-kind and relocation, replacing and extending irrigation, and placing curing compound as specified herein, as shown on the

Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

INSTALL PCC SIDEWALK

The contract price paid per square foot for "Install PCC Sidewalk" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in preparing the subgrade, trimming tree roots (2-inches or small in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, and placing curing compound as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

INSTALL PCC VALLEY GUTTER

The contract unit price per square foot for "Install PCC Valley Gutter" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved, including sawcutting, demolishing, removing the existing asphalt concrete, preparing the subgrade, furnishing and compacting the aggregate base, protecting and incorporating new aggregate concrete berm into the new works, removing existing pipe drain indicated in plans, furnishing, placing and finishing concrete, and placing curing compound as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

INSTALL LANDSCAPE MATCH ADJACENT LANDSCAPE IN-KIND

The contract unit price per square foot for "Install Landscape Match Adjacent Landscape In-Kind" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

ASPHALT CONCRETE

The contract price paid per ton for "Asphalt Concrete" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and placing asphalt concrete, tack coat, and leveling courses, patch paving, complete in place as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

LOWER & RESTORE TO GRADE MANHOLE FRAME & COVER

The contract price paid per each for "Lower & Restore to Grade Manhole Frame & Cover" shall include full compensation for furnishing all labor, materials (including temporary installation and removal of false bottom at sewer manhole), lowering and restoring of storm drain manhole, utility coordination, tools, equipment, and incidentals and for doing all the work involved in lowering and restoring these facilities to finish grade, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

LOWER & RESTORE TO GRADE WATER VALVE

The contract price paid per each for "Lower & Restore to Grade Water Valve" shall include full compensation for furnishing all labor, materials, utility coordination, tools, equipment, and incidentals and for doing all the work involved in lowering and restoring these facilities to finish grade, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

LOWER & RESTORE TO GRADE WATER METER

The contract price paid per each for "Lower & Restore to Grade Water Meter" shall include full compensation for furnishing all labor, materials, utility coordination, tools, equipment, and incidentals and for doing all the work involved in lowering and restoring these facilities to finish grade, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

RECTANGULAR RAPID FLASHING BEACON RRFB & PPB

The contract lump sum price for "Rectangular Rapid Flashing Beacon & PPB" shall include full compensation for furnishing all labor, tools, equipment, and incidentals and for doing all the work involved including potholing to determine the pole foundation, attach signs, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

RELOCATE R1-1 SIGN ON NEW POST

The contract unit price per each for "Relocate R1-1 Sign on New Post" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing, installation of the sign, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

PAVEMENT STRIPING (BY DETAIL NUMBER OR TYPE) - THERMOPLASTIC

The lineal foot price paid for pavement striping (by Detail Number or Type) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installation of the thermoplastic pavement striping complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

PAVEMENT WORDS AND LEGENDS - THERMOPLASTIC

The contract unit price per each for pavement words and legends shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installation of the thermoplastic pavement markings complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

BLUE HYDRANT MARKER

The contract unit price per each for "Blue Hydrant Marker" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing, installation of the reflective marker complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

RED CURB WITH "SC★PD" STENCILED IN WHITE

The contract price paid per linear foot for this bid item shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved including furnishing and installation of the red paint, stenciling "SC★PD" in white on the newly painted curbs, complete in place, as specified herein, as shown on the Plans, as specified in the Specifications, and the Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefor.

END OF SECTION

TECHNICAL SPECIFICATIONS

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SECTION 011100 - SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. The Contract Documents describe the Work to be performed under this Contract which includes, but is not limited to, providing all plant, tools, equipment, materials, testing, supplies, and manufactured articles for the Project. It shall also include the providing of all transportation and services, including fuel, power, water, and essential communications, necessary and for the performance of all labor, work, or other operations required for the performance of the Contract in accordance with the Contract Documents.
- B. The Contractor shall sufficiently obligate themselves and take the necessary precautions so as to perform and complete the work in accordance with the requirements of the contract documents and specifications and/or as shown on the plans and within the time limit specified herein.
- C. Related Sections
 - 1. Section 013000 – Special Project Constraints
 - 2. Section 013300 – Contractor Submittals
 - 3. Section 015100 – Temporary Utilities and Facilities
 - 4. Section 015550 – Temporary Traffic Control Systems

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work is described generally as the following work items:
 - 1. RRFB system installation
 - 2. AC grind & installation
 - 3. PC Concrete, including ADA curb ramps, sidewalk, curb & gutter construction
 - 4. Pavement striping and markings
 - 5. Sign installation and removal of existing signs and street light pole
 - 6. Adjusting utilities to grade
 - 7. Miscellaneous including incidental items of work
- B. All risk of loss, damage or diminution to the Work shall rest with Contractor until final acceptance of the Work by the City Council.

1.3 JOB CONDITIONS

- A. The Project corridor includes gas mains, high voltage underground power lines, and other potentially hazardous facilities. Contractor shall make themselves fully aware of all potential hazards and utilize experienced and qualified personnel when working adjacent to such facilities. Contractor shall be responsible to coordinate with the utility owners as required for compliance when working adjacent to such facilities.
- B. Contractor shall be responsible for making themselves familiar with the existing site conditions.

1.4 BEGINNING AND COMPLETION OF THE WORK

- A. In accordance with the provisions of the Contract Documents, the Contractor shall begin the Work on the date specified in the written Notice to Proceed from the City, and shall complete all of the Work included in the Contract within the time specified in the said Notice. Time stated for completion shall include final cleanup of the premises.

1.5 CONTRACT METHOD

- A. The Work of this Contract is a combination unit price and lump sum contract. The basis for measurement and payment shall be as indicated in the General Provisions, Bid Item Description and these Specifications.
- B. The Contractor shall include the requirements of the approved Project Plans and Specifications and Engineer's Supplementary Conditions, as a part of all of its subcontract agreements.

1.6 ORDER OF THE WORK

- A. Contractor's order and time to complete shall conform to the requirements of the approved Contractor's schedule as submitted under the provisions for "Contractor's Schedules" in Section 013300, "Contractor Submittals."
- B. Order of work shall include, but not be limited to, consideration of constraints as described in Section 013000, "Special Project Constraints."

1.7 WORK BY OTHERS

- A. Multiple projects (City, other agency, and private) are planned in or adjacent to the City right of way during the time of the contract in the immediate vicinity. The Contractor is responsible for full cooperation with adjacent project operations, coordination of work and work area, and provision of requisite temporary traffic control measures as required within these special provisions.
- B. Interference With Work on Utilities: The Contractor shall cooperate fully with all utility forces of the City or forces of other public or private agencies engaged in the relocation, altering, installation 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.
- C. Contractor shall cooperate fully with all other City contractors or forces of other public or private entities engaged in the installation, 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 installation, relocation, altering, or other rearranging of facilities.

1.8 WORKSEQUENCE/NOTIFICATIONS

- A. No sustained interruption in access to any adjacent businesses, institutions, or residences along the alignment can be accommodated. Interruption of access to any adjacent businesses or residences shall not exceed 30 minutes without approval from the City and shall not continue beyond project work hours as specified in Section 013000, "Special Project Constraints." Prior to beginning work in the vicinity of any businesses, institutions, or residences, the Contractor shall contact the businesses, institution, or residences, provide the business, institution, or home owner a written preliminary notification of the intended schedule, and if necessary, determine and prepare an alternate schedule for the Engineer's approval that provides minimal disruption. Additional notification requirements are specified in Section 015550, "Temporary Traffic Control Systems."

1.9 CONTRACTOR USE OF PROJECT SITE

- A. The Contractor's use of the project site shall be limited to its construction operations, including on-site storage of materials, and on-site fabrication facilities during working hours.
- B. The Contractor shall remove all equipment and materials from the City of San Carlos rights-of-way outside of normal work hours.
 - 1. The Contractor shall identify potential staging site(s) for the Contractor's use for construction staging and storage of equipment/materials directly related to this Project. The Contractor shall make all arrangements with property owner, City, and/or any other party(ies) of interest for staging areas. The Contractor shall provide a signed letter from the property owner authorizing the use of the property as a staging area.

1.10 CITY USE OF THE PROJECT SITE

- A. The City and the Engineer and their authorized representatives shall be allowed access to the project site at all times during the period of construction.
- B. Private utility companies and other entities performing construction on the site shall have access to the project site.
- C. Any land-locked parcels adjacent to the project site shall be provided access/egress by the Contractor.

1.11 PARTIAL UTILIZATION OF THE WORK BY CITY

- A. The City may allow partial utilization of the Work upon completion of the various stages. Utilization of the work does not indicate acceptance of any portion of the work.

1.12 PROJECT MEETINGS

- A. Preconstruction Meeting: Prior to the commencement of Work at the site, a

Preconstruction meeting will be held virtually or at a mutually agreed time and place which shall be attended by the Contractor, its Superintendent, and its subcontractors as appropriate. Other attendees may include:

1. Engineer and the Construction Inspector.
 2. Representatives of City.
 3. Representatives of Permittees as appropriate.
 4. Others as requested by Contractor, or Engineer.
- B. Unless previously submitted to the Engineer, the Contractor shall bring to the meeting six copies of each of the following:
1. Draft Construction Schedule.
 2. Traffic Control Plan stamped by Licensed Engineer
 3. Procurement schedule of major equipment and materials and items requiring long lead time.
 4. Preliminary Schedule of Shop Drawings, Samples, and Product Data Submittals.
 5. Schedule of Values (unit price and lump sum price breakdown) for progress payment purposes.
 6. Substitution Requests per Section 013300.
 7. Letter of Responsibility designating emergency contacts for the Contractor after business hours (3 copies).
- C. The purpose of the meeting is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The agenda may include the following:
1. Contractor's tentative schedules.
 2. Update on public outreach.
 3. Transmittal, review, and distribution of Contractor's submittals.
 4. Processing applications for payment.
 5. Maintaining of record documents.
 6. Critical work sequencing.
 7. Field decisions and Change Orders.
 8. Use of project site, office and storage areas, security, housekeeping, and City's needs.
 9. Major equipment deliveries and priorities.
 10. Contractor's assignments for safety and first aid.
 11. Contact information for Contractor, Superintendent.
- D. The Engineer will preside at the Preconstruction meeting and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

1.13 PRECONSTRUCTION PHOTOGRAPHS

- A. Prior to commencement of any construction activity, the City Inspector will take photographs and/or video of all work areas.
- B. The Contractor shall conduct a photographic and/or video survey prior to commencement of any construction activity. The purpose for preconstruction documentation is to establish baseline conditions for evaluation of any change in existing conditions in the vicinity of the work zone during construction (i.e.

damage to existing hardscape, structures, etc.).

1.14 WEEKLY PROGRESS MEETINGS

- A. Weekly progress meetings will be scheduled and held at the City office, or another mutually agreed location near the site.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 013000 – SPECIAL PROJECT CONSTRAINTS

PART 1 - GENERAL

1.1 SCHEDULING

- A. Pedestrian access shall be maintained throughout the project site for the duration of the construction. Vehicle access to the adjacent businesses, institutions, and residences shall also be maintained for the duration of the closure.
- B. The Contractor shall locate and make themselves familiar with existing underground utilities. The proposed roadway and improvements may be within close proximity to existing facilities. The Contractor shall maintain a minimum cover of 18-inches from subgrade to all existing utilities. Any locations that do not meet this requirement shall immediately be brought to the attention of the Engineer. Adherence with this clause and protection of existing facilities shall be the responsibility of the Contractor.
- C. The Contractor shall submit a construction staging area plan for City approval for all staging areas proposed for use with the project.
- D. The construction constraints described herein shall be incorporated into the Contractor's schedule.
- E. The Contractor shall be responsible for the allocation of space for temporary field offices and structures (if necessary) furnished by itself or its subcontractors; monitoring the use of temporary utilities; verification that adequate services are available to comply with requirements for Work and climatic conditions; and the administration of traffic and parking controls. All such work shall be in strict conformance with the applicable requirements specified in Sections 015100, "Temporary Utilities", and elsewhere in this Division 1.
- F. Night or weekend work will not be permitted, with the exception of temporary traffic control measures necessary to perform the Work.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 013100 – COORDINATION

PART 1 GENERAL

1.1 SUMMARY

- A. The Contractor shall be responsible for the coordination of all work and the coordination of the work of all subcontractors. The Contractor shall not delegate coordination to any subcontractor. Coordination, as referred to herein, shall include the establishment of on-site lines of authority and communication and assistance in scheduling of and attendance of progress meetings between the Engineer or the City and the Contractor and its subcontractors. The Contractor's onsite supervisory person shall be present and represent the General Contractor whenever a meeting is held that involves any interface between the City or Engineer and any subcontractors or suppliers.
- B. Related Sections
 - 1. Section 011000 – Summary of Work
 - 2. Section 013000 – Special Project Constraints
 - 3. Section 013300 – Contractor Submittals
 - 4. Section 015100 – Temporary Utilities and Facilities
 - 5. Section 015550 – Temporary Traffic Control Systems
 - 6. Section 015600 – Protection of Existing Facilities

1.2 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule for review by Engineer in duplicate within ten (10) working days after date of Contract. After review, submit detailed schedules within ten (10) working days, modified to accommodate revisions recommended by the Engineer and/or the City.
- B. Submit revised schedules with each application for payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of work at each submission.
- C. Submit a comprehensive 3-week look ahead schedule for discussion with City at each weekly construction progress meeting.
- D. Distribute copies of reviewed schedules to project site file, subcontractors, suppliers and other concerned parties.
- E. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.
- F. Submit computer generated horizontal bar chart with separate line for each major portion of work or operation, identifying first workday of each week.

- G. Submit revised Schedule of Values within ten (10) working days after preconstruction meeting, modified to accommodate revisions recommended by the Engineer and/or the City.

1.3 GENERAL COORDINATION

- A. All Work covered in the Contract Documents shall be coordinated as a part of the Contractor's obligations under the Contract. The Contractor shall coordinate his/her operations with the City and others working in the immediate area.
- B. The Contractor shall assure timely fabrication of work, erection of work, and completion of closeout items and the timely preparation of shop drawings and other submittals in conformance with the approved construction schedule.
- C. The Contractor shall coordinate the efforts of all individuals and subcontractors in the execution of the Work, including work by others as specified in Section 01110, "Summary of Work."
- D. The Contractor shall resolve differences or disputes between subcontractors concerning coordination, interferences, or extent of work between Sections. The Contractor's decisions, if consistent with the Contract Document requirements, shall be final.
- E. The Contractor shall conduct their operations so that existing utilities are kept in continuous operation throughout the execution of this contract. The Contractor, therefore, shall schedule and conduct their work so as to minimize interference with the operation and maintenance of these facilities. Methods, schedules and sequences of construction which prevent or jeopardize the City's compliance with Clean Water Standards or the NPDES Permit are not acceptable.
- F. When modification, addition or connection to existing pipelines, structures, systems, circuits or equipment is required, the Contractor shall schedule such activities with the Engineer. The Contractor shall notify the Engineer, in writing, one (1) week in advance of the time when construction operations will require connection to, or modification of, in-service portions of the existing facility. No pipeline system, structure, circuit or individual unit shall be cut, modified, dewatered or removed from the facility unless authorized by the Engineer.
- G. In the event that the Contractor accidentally damages operating pipes or utilities, they shall immediately affect the necessary repairs. The Contractor shall maintain an inventory of repair clamps and materials for small pipelines, including temporary pumps, bypass pipelines, electrical conductors or other facilities necessary to maintain operation of sewerage facilities while the repairs are being made. The Contractor shall provide telephone numbers of standby personnel who will respond during non-working hours to repair facilities which interrupt normal operations.
- H. If the Contractor fails to respond to a request by the Engineer, the City reserves

the right to affect the repair with its own forces or by another contractor. The cost for repairs performed by others will be deducted from the payment due the Contractor.

- I. In addition to notifying the Engineer (Section 1.03 F), Contractor shall notify affected property owners and residents in writing minimum of 48-hours in advance prior to any planned temporary shutdown of utility services.
- J. In City and Contractor shall utilize a web-based document management system for submission of all data and documents, including public outreach documents where applicable throughout the duration of the Contract.

1.4 SPECIAL COORDINATION

- A. The Contractor shall provide advance notification to the Engineer of specific tasks, tests and inspections specified. Failure to provide such advance notification may be cause for rejection of the Work.

1.5 COORDINATION OF SUBCONTRACTOR RESPONSIBILITIES

- A. The Contractor shall be responsible for coordination of the work of each of its subcontractors and suppliers. Special attention is directed to the following obligations of the Contractor:
 - 1. Verify that subcontractors have obtained permits for inspections.
 - 2. Review all subcontractor shop drawings, product data, and sample submittals for compliance with Contract Documents prior to submittal to Engineer for general review for compliance with design intent.
 - 3. Maintain onsite documentation and keep current record drawing set at Project site.
 - 4. Verify that specified cleaning is done during progress of Work and at completion of each subcontract.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 013300 – CONTRACTOR SUBMITTALS

PART 1 GENERAL

1.1 SUMMARY

- A. This section describes general requirements for submittals for the Work.
- B. Related Sections
 - 1. Section 011100 – Summary of Work
 - 2. Section 013100 – Coordination
 - 3. Section 015550 – Temporary Traffic Control Systems
 - 4. Section 321216 – Paving Systems
 - 5. Section 321723 – Traffic Striping, Pavement Markers, Pavement Markings & Signage

1.2 PROCEDURES

- A. Submit at Contractor's expense, Schedule of Shop Drawing and Sample Submittals, Safety Plans, Progress Schedules, Product Data, Shop Drawings, Samples, Substitution Requests, Traffic Control Plans, Construction Staging Area Plan, Storm Water Pollution Prevention Plan (SWPPP), and Project Record Documents, and all other submittals required by the Contract Documents. Submit these submittals to Engineer for review and approval.
- B. Use a submittal transmittal form, in duplicate, containing:
 - 1. Date, and revision date and submittal log number.
 - 2. Project title.
 - 3. Contractor's name and address and job number.
 - 4. Specification Section clearly identified.
 - 5. The quantity of each Shop Drawing, Product Data, and Samples submitted.
 - 6. Notification of deviations from Contract Documents.
 - 7. Materials safety data sheet (MSDS) for each item complying with OSHA's Hazard Communication Standard 29 CFR 1910.1200.
 - 8. Other pertinent data.
- C. Where manufacturer's standard drawings or data sheets are used, they shall be marked clearly to show those portions of the data that are applicable to this project. Submittals shall be submitted based on each technical specification section. Submittals containing information about more than one specification section will be returned for resubmittal. Submittals shall include all information requested by each specification section. (No partial submittals.) Incomplete submittals will be returned not reviewed by Engineer. Provide a log number and reference to Specifications Section and/or Plan sheets and details, for each submittal for ease of identification of submittal. Submittal shall include:
 - 1. Date and revision dates.
 - 2. Revisions, if any, identified.

3. Project Title and number.
 4. The names of: Engineer, Contractor, Subcontractor, Supplier, Manufacturer, and separate detailer, when pertinent.
 5. Identification of product material by location within the Project.
 6. Relation to adjacent structure or materials.
 7. Field dimensions, clearly identified as such.
 8. Specification Section number and applicable detail reference numbers on the drawings.
 9. Applicable standards, such as ASTM, ANSI, FS, NEMA, SMACNA or ACI.
 10. A blank space, on each Drawing or data sheet, 5" x 4" for the Engineer's stamp.
 11. Identification of deviations from Contract Documents.
 12. Contractor's stamp, initialed or signed, with language certifying the review of submittals, verification of field measurements, construction criteria and technical standards in compliance with Contract Documents.
- D. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show Engineer the materials and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes specified below. Samples shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which it is intended and otherwise as Engineer may require to enable Engineer to review the submittal. The number of each Sample to be submitted will be as specified in the Specifications.
- E. Substitutions:
1. Substitution for those equipment, procedures, materials and/or products specified shall only be permitted when the proposed unnamed "equal" product or material to be furnished is both equal in quality and utility and after the Contractor has complied with the following provisions:
 - a. All substitutions shall be reviewed by the City;
 - b. The City must approve such substitution in writing prior to its incorporation into the work;
 - c. Unless otherwise authorized in writing by the City, the Contractor shall, prior to award and placing any purchase orders, and at least thirty (30) calendar days before it requires approval of any such alternative item, submit to the City sufficient data, drawings, samples, literature or other detailed information as will demonstrate to the City that the proposed substitute is equal in quality and utility to the equipment, materials, procedures and/or products specified.
 2. Within thirty (30) calendar days following receipt of all requested information from the Contractor, the City will determine whether the proposed alternative is equal in quality and utility and meets the requirements of the Contract and will inform the Contractor in writing of such determination. The burden of substantiating the quality and utility of alternatives shall be upon the Contractor, and the Contractor shall furnish

all necessary information requested and required by the City. The City will be the sole judge as to the quality and utility of alternative equipment, materials and/or products, and the City's decision shall be final. An acceptance by the City of a substitution shall not relieve the Contractor from complying with the requirements of the Project Drawings and Specifications. Acceptance by the City shall not relieve the Contractor from full responsibility for the efficiency, sufficiency and quality and performance of the substitute equipment, materials, procedures and/or products, in the same manner and degree as the equipment, materials, procedures and/or products specified by name.

3. Failure of the Contractor to submit proposed substitutions for review in the manner described above and within the time prescribed shall be sufficient cause for rejection by the City of any other proposed substitutions.
4. In determining whether a proposed product is equal in quality and utility, the City is not restricted to such basic issues as performance and durability, but may consider any other issues that the City, in the discretion of the City, deems appropriate. Said issues may, but are not required to include, nor are they limited to, such additional factors as comparable performance, reliability, efficiency or operation, ease of operation, adaptability, ease of maintenance, capital costs, life-cycle costs, operational characteristics, costs of training personnel, maintenance history, warranties, problems created by the resulting overall warranty system, availability of qualified service, availability of parts, the history of any supplier, and compatibility with existing facilities.
5. No one factor or group of factors, including such issues as savings on capital costs, shall be determinative of whether the proposed product or material is equal in quality and utility. The decision of the City shall be based on those factors deemed by the City to be relevant and any data, drawings, samples, literature or other detailed information furnished by the Contractor with respect to the proposed substitution.
6. Each decision as to whether a product or material is equal in quality and utility shall be made by the City on a case-by-case basis.
7. The Contractor shall be responsible for any and all costs, including consultant costs, incurred by the City with respect to the proposed substitution that exceed the costs inherent in the normal and reasonable review of drawings and other standard data, information and documents concerning any proposed substitution. The Contractor shall be responsible for this cost, regardless of whether or not the substitution is approved by the City.

F. Submittal coordination and verification is the responsibility of Contractor; this responsibility shall not be delegated in whole or in part to subcontractors or suppliers. Before submitting each Shop Drawing or Sample, Contractor shall have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents, and shall have determined and verified:

1. All field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar

- information with respect thereto;
2. All materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work; and
 3. All information relative to Contractor's sole responsibilities and of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- G. Contractor's submission to City or to Engineer of a Shop Drawing or Sample submittal will constitute Contractor's representation that it has satisfied its obligations under the Contract Documents, and as set forth immediately above, with respect to Contractor's review and approval of that submittal.
- H. Designation of work "by others", if shown in submittals, shall mean that work will be responsibility of Contractor rather than subcontractor or supplier who has prepared submittals.
- I. The Contractor shall sign a statement with each submittal, certifying that the submittal has been checked by the Contractor and is in conformance with the Specifications. Any submittal received without this certification shall be returned AMEND AND RESUBMIT and count as one submittal under R.5.a of this specification section.
- J. After review by City or Engineer of each of Contractor's submittals, two (2) sets of material will be returned to Contractor with actions defined as follows:
1. NO EXCEPTIONS TAKEN – A formal revision and resubmission of said submittal will not be required. Accepted subject to its compatibility with future submittals and additional partial submittals for portions of the work not covered in this submittal does not constitute approval or deletion of specified or required items not shown on the submittal.
 2. MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) Same as 1 above, except that minor corrections as noted shall be made by Contractor.
 3. AMEND AND RESUBMIT - Rejected because of major inconsistencies or errors that shall be resolved or corrected by Contractor prior to subsequent review by Engineer.
 4. REJECTED - The submittal is illegible or the submittal is so far out of compliance with the contract documents that the Contractor needs to try again, from scratch.
- K. Contractor shall make a complete and acceptable submittal at least by second submission. City reserves the right to deduct monies from payments due Contractor to cover additional costs of review beyond the second submission. Illegible submittals will be rejected and returned to Contractor for resubmission. Contractor shall be in breach of the Contract if it, following a submittal which City determines falls within category 3 above, Contractor's first resubmittal does not fall within categories 1 or 2 above.
- L. Favorable review will not constitute acceptance by City or Engineer of any

responsibility for the accuracy, coordination and completeness of the submittals. Accuracy, coordination, and completeness of Submittals shall be the sole responsibility of Contractor, including responsibility to back-check comments, corrections, and modifications from City or Engineer's review before fabrication. Contractor, subcontractors, or suppliers may prepare submittals, but Contractor shall ascertain that submittals meet requirements of Contract Documents, while conforming to structural space and access conditions at point of installation. Engineer's review will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as indicated by the Contract Documents. Favorable review of submittal, method of work, or information regarding materials and equipment Contractor proposes to furnish shall not relieve Contractor of responsibility for errors therein and shall not be regarded as assumption of risks or liability by City or Engineer, or any officer or employee thereof, and Contractor shall have no claim under Contract on account of failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so accepted. Favorable review shall be considered to mean merely that City and/or Engineer has no objection to Contractor using, upon his own full responsibility, plan or method of work proposed, or furnishing materials and equipment proposed.

- M. City and/or Engineer's review will not extend the means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
- N. Submit complete initial submittal for those items where required by individual specification Sections. Complete submittal shall contain sufficient data to demonstrate that items comply with Specifications, shall meet minimum requirements for submissions cited in technical specifications, shall include certifications, where required, and shall include necessary revisions required for equipment other than first named. If Contractor submits incomplete initial submittal, when complete submittal is required, submittal may be returned to Contractor without review.
- O. It shall be Contractor's responsibility to copy, conform and distribute reviewed submittals in sufficient numbers for Contractor's files, subcontractors and vendors.
- P. After City and/or Engineer's review of submittal, revise as noted and resubmit as required.
Identify changes made since previous submittal.
 - 1. Begin no fabrication or work that requires submittals until return of submittals not requiring resubmittal.
 - 2. Normally, submittals will be processed and returned to Contractor within ten (10) working days of receipt.
- Q. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

- R. All shop drawings and submittals shall be number identified by Contractor, prior to submission to Engineer, in accordance with the following:
1. Contractor shall sequentially number each submittal (i.e., "1", "2", "3", etc.) as the basis for number identification of all shop drawings and submittals.
 2. Affix the submittal number under which each submittal is made on every copy of each shop drawing, product data, sample, certification, O & M manual, etc.
 3. If the submittal is a resubmittal (including without limitation after an initial submittal is rejected, returned not reviewed or marked revise as noted and resubmit), add the suffix designation "A" (i.e., a resubmittal of submittal 1 would be numbered 1A). Subsequent resubmittals would be identified by the submittal number and sequential letters (i.e., "B", "C", "D", etc.).
 4. All submittals shall include all information requested by each specification section. No partial submittals will be accepted unless previously authorized by Engineer. In the event a partial submittal is authorized, each subsequent different submittal (as opposed to resubmittal) is given a new number.
 5. Number of resubmissions:
 - a. One reexamination of Contractor's submittals that have been returned for correction or replacement will be included in Engineer's scope. Any additional reexamination of Contractor's submittals will be considered additional scope services to be paid by Contractor through City. Engineer shall be paid hourly at 3.0 times direct payroll expenses and charge consultant's time at 1.25 times the amount billed Engineer.

1.3 SCHEDULE OF SHOP DRAWING AND SAMPLE SUBMITTALS

- A. Submit preliminary Schedule of Shop Drawing, Samples, and Product Data Submittals as required, no later than five (5) working days following receipt of Notice to Proceed from City.
- B. Schedule of Shop Drawing, Samples, and Product Data Submittals will be used by City and Engineer to schedule their activities relating to review of submittals. Schedule of submittals shall indicate a spreading out of submittals and early submittals of long lead-time items and of items that require extensive review.
- C. Schedule of Shop Drawing, Samples, and Product Data Submittals shall be reviewed by City and shall be revised and resubmitted until accepted by City.
- D. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received. Identify on the submittal which submittals should be reviewed together.
- E. The Contractor agrees that shop drawing submittals processed by the City are not Change Orders; that the purpose of shop drawing submittals by the Contractor

is to demonstrate to the City that they understand the design concept, that the Contractor demonstrates their understanding by indicating which equipment, procedure and material they intend to furnish and install and by detailing the proposed fabrication and installation methods. The Contractor further agrees that if deviations, discrepancies or conflicts between shop drawing submittals and the Contract Documents in the form of design drawings and specifications are discovered either prior to or after shop drawing submittals are processed by the City, the design drawings and specifications shall control and shall be followed.

1.4 DELAY OF SUBMITTALS

- A. Delay of submittals by Contractor is considered avoidable delay. Liquidated damages incurred because of late submittals will be assessed to Contractor.
- B. The City may periodically inspect the record drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of requisitions for periodic payment.

1.5 RECORD DRAWINGS

- A. General: The Contractor shall keep and maintain, at the job site, one record set of Contract Drawings. On these, it shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction.
- B. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Drawings. Said record drawings shall be supplemented by any detailed sketches as necessary or directed to indicate, fully, the Work as actually constructed.
- C. These master record drawings of the Contractor's representation of "as-built" conditions, including all revisions made necessary by addenda, change orders, and the like shall be maintained up-to-date during the progress of the Work.
- D. In the case of those drawings which depict the detail requirement for equipment to be assembled in the factory, the record drawings shall be updated by indicating those portions which are superseded by change order drawings or final shop drawings, and by including appropriate reference information describing the change orders by number and the shop drawings by manufacturer, drawing, and revision numbers.
- E. Record drawings prepared by the Contractor shall be accessible to the Engineer at all times during the construction period and shall be delivered to the Engineer upon completion of the work.

- F. Effect on Progress Payments: Requests for partial payments will not be approved if the record drawings are not kept current. All such Record Drawings will be inspected by the City each month, showing all variations between the Work as actually constructed and as originally shown on the Contract Drawings or other Contract Documents, and the City will not process monthly payment requests until such drawings are made current each month.
- G. Final Record Drawings: Upon substantial completion of the Work and prior to final acceptance by the City, the Contractor shall complete and deliver one bond copy set and an electronic scanned set in PFD format with legible red-line changes dated and signed by the Contractor to the City for approval. The redline changes shall conform to the construction records of the Contractor. This information will be assumed to be reliable, and the Engineering will not be responsible for the accuracy of such information, nor for any errors or omissions which may appear on the Record Drawings as a result.
- H. Effect on Final Payment: Final payment will not be approved until the Contractor-prepared bond copy set and an electronic scanned set in PFD format of the Record Drawings have been delivered to the City.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 014516 – QUALITY CONTROL

PART 1 GENERAL

1.1 SITE INVESTIGATION AND CONTROL

- A. The Contractor shall verify all dimensions in the field and shall check all field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work.
- B. The Contractor shall inspect related and appurtenant work and shall report in writing to the Engineer, any conditions which will prevent proper completion of the Work. Any required removal, repair, or replacement caused by the Contractor shall be done by the Contractor's work at its sole cost and expense.

1.2 INSPECTION OF THE WORK

- A. General: The Work shall be conducted under the general observation of the Engineer and shall be subject to inspection by representatives of the City to verify strict compliance with the requirements of the Contract Documents.
- B. The authorized representative of the Engineer on the project site shall be the Project Engineer acting directly and through various inspectors at the site. The presence of the Inspectors, however, shall not relieve the Contractor of the responsibility for the proper execution of the Work in accordance with all requirements of the Contract Documents. Compliance is distinctly a duty of the Contractor, and said duty shall not be avoided by any act or omission on the part of the inspector(s).
- C. All materials and articles furnished by the Contractor shall be subject to rigid inspection, and no material or articles shall be used in the Work until it has been inspected and accepted by the Engineer or the City.
- D. Inspection at Place of Manufacture: Unless otherwise specified, all products, materials, and equipment shall be subject to inspection by the Engineer at the place of manufacture if deemed necessary by the Engineer.
- E. The presence of the Engineer at the place of manufacture however, shall not relieve the Contractor of the responsibility for furnishing products, materials, procedures and equipment which comply with all requirements of the Contract Documents.

1.3 SAMPLING AND TESTING

- A. Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM or other specified published standards, as applicable to the class and nature of the article or materials considered; however, the City reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the Engineer will indicate to the City that the quality of the workmanship is in full

accord with the Contract Documents.

- B. Any waiver by the City of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a "performance bond" to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any prescriptive or performance requirements of the Contract Documents. "Performance Bond" as used herein is a separate bond in addition to the Contract Performance Bond required in the General Conditions.
- C. Notwithstanding the existence of such waiver, and in addition to any testing and inspection performed by any other inspector on behalf of the City or any other public agency having jurisdiction, the Engineer shall have the right to make independent investigations and tests, and failure of any portion of the Work to meet any of the requirements of the Contract Documents, shall be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such work in accordance with the General Conditions.

1.4 TESTING AND INSPECTION SERVICES

- A. Contractor shall employ and pay for services of an independent testing agency or laboratory acceptable to City to perform specified testing.
 - 1. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full-time specialist and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.
- B. The independent firm will perform tests, inspections and other services specified in individual specification sections and as required by the Engineer.
 - 1. Laboratory: Authorized to operate in the State of California.
 - 2. Laboratory Staff: Maintain full time specialist on staff to review services.
 - 3. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.
- C. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing as required by the Engineer or City.
- D. Reports will be submitted by an independent firm to the Engineer and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

1. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- F. Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- G. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by the Engineer. Payment for re-testing or re-inspection is the sole responsibility of the Contractor.
- H. Agency Responsibilities:
1. Test samples of mixes submitted by Contractor.
 2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
 3. Perform specified sampling and testing of products in accordance with specified standards.
 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 5. Promptly notify the Engineer and Contractor of observed irregularities or non- conformance of Work or products.
 6. Perform additional tests required by the City or Engineer.
 7. Attend preconstruction meetings and progress meetings on request.
- I. Agency Reports: After each test, promptly submit one copy of the report to the Engineer and to the Contractor. When requested by the Engineer, provide interpretation of test results. Include the following:
1. Date issued.
 2. Project title and number.
 3. Name of inspector.
 4. Date and time of sampling or inspection.
 5. Identification of product and specifications section.
 6. Location in Project.
 7. Type of inspection or test.
 8. Date of test.
 9. Results of tests.
 10. Conformance with Contract Documents.
- J. Limits On Testing Authority:
1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency or laboratory may not approve or accept any portion of the Work.
 3. Agency or laboratory may not assume duties of Contractor.
 4. Agency or laboratory has no authority to stop the Work.

1.5 TESTING

- A. All materials, equipment and work included in this contract shall be tested and inspected to prove compliance with the contract requirements. Unless otherwise specified, all costs of testing, including temporary facilities and connections, shall be borne by the Contractor. No tests specified herein shall be applied until the item to be tested has been inspected and approval given for the application of such test.

Tests and inspections shall include:

1. Factory tests.
2. The delivery acceptance test and inspections.
3. The installed tests and inspections of items as installed.
4. Tests and inspections, unless otherwise specified or accepted, shall be in accordance with the recognized standards of the industry.

The form of evidence of satisfactory fulfillment of delivery acceptance test and of installed test and inspection requirements shall be, at the discretion of the City, either by tests and inspections carried out in the City's presence or by certificates or reports of tests and inspections carried out by approved persons or organizations. The Contractor shall provide and use forms which include all test information, including specified operational parameters, and shall be acceptable in content to the City.

- B. **Factory Observations and Tests.** At the request of the City, the Contractor shall arrange with the factory for the City or his/her representatives to observe the manufacturing process and to witness performance tests at the factory or point of manufacture of any and all items to be furnished as a part of this contract. The Contractor shall inform the City in sufficient time to allow arrangements to be made for witness of manufacture and tests. Where the City elects not to observe the manufacture or witness such tests, the Contractor shall provide the City with certifications that the materials and equipment meet the requirements of the specifications.
- C. **Delivery Acceptance Tests and Inspections.** The delivery acceptance tests and inspections shall be at the Contractor's expense for any materials or equipment specified herein and shall include the following:
1. Test of items at the place of manufacture during and/or on completion of manufacture, comprising material tests, hydraulic pressure tests, electrical and instrumentation subsystem tests; electric and operating tests, and inspections in accordance with the relevant standards of the industry and more particularly as detailed in individual clauses of these specifications to satisfy the City that the items tested and inspected comply with the requirements of this contract.
 2. Inspection of all items delivered at the site or to any authorized place of storage in order that the City may be satisfied that such items are of the specified quality and are in good order and condition at the time of delivery. To that end, the Contractor shall be prepared to remove all coverings, containers or crates to permit the City to conduct the inspection. Should the City find, in his/her opinion, indication of damage or deficient quality,

the Contractor shall provide the necessary documentation or conduct tests deemed necessary by the City to demonstrate compliance.

- D. Tests and Inspection. All materials and equipment shall be tested by the Contractor to the satisfaction of the City before any facility is put into operation. Tests shall be as specified in these specifications and shall be made to determine whether the materials and equipment have been properly assembled, aligned, adjusted and connected. Any changes, adjustments or replacements required to make the equipment operate as specified shall be carried out by the Contractor as part of the work.
- E. All gauges, meters, recorders and monitors shall be provided by the Contractor as required by the City to supplement or augment the instrumentation system provided under this contract to properly demonstrate that all materials and equipment fully satisfy the requirements of these specifications. All devices employed for the purpose of measuring the performance of the facility's equipment and systems shall be specifically selected to provide a level of uncertainty consistent with the variables to be monitored. All instruments shall be recently calibrated, and the Contractor shall be prepared at all times to demonstrate, through recalibration, the uncertainty of all instruments employed for testing purposes. Calibration procedures shall be in accordance with applicable standards of ASTM, ISA and IEEE. The adequacy of all gauges, meters, recorders and monitors shall be subject to review of the City.

1.6 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, and test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to the Engineer thirty (30) days in advance of required observations. Observer subject to approval of Engineer.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

1.7 DEFECTIVE MATERIALS TO BE REMOVED

- A. All materials not conforming to the requirements of these Specifications shall be considered as defective; and all such materials, whether in place or not, shall be rejected and shall be removed immediately from the site of the work, as determined by City, at Contractor's sole expense.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 015050 – MOBILIZATION

PART 1 GENERAL

1.1 SUMMARY

- A. Mobilization shall include the obtaining of all bonds, insurance, permits, and licenses; furnishing equipment, temporary buildings, leasing of temporary equipment and material storage area, and other construction facilities; all as required for the proper performance and completion of the Work. In addition to this specification, Section 11 "Mobilization", paragraph 9-1.16D Mobilization of the Caltrans Standard Specifications shall also apply to this Contract. Mobilization shall include but not be limited to the following principal items:
1. Moving on to the site and furnishing equipment required for the operations.
 2. Developing construction water supply.
 3. Providing on-site sanitary facilities and potable water facilities as specified in Section 015100, "Temporary Utilities and Facilities."
 4. Arrangement for and erection of Contractor's work and storage yard, including site security.
 5. Contractor is advised that there may be insufficient area within the construction zone to provide parking, staging for material and storage of equipment.
 6. Providing a meeting room at the Contractor's work and storage yard, 8. Posting all EPA and OSHA required notices and establishment of safety programs.
 7. Have the Contractor's superintendent at the job site full time.
 8. Submittal and City acceptance of the Construction Schedule.
 9. Establishing site security, lighting, fencing, and signing.
 10. Obtaining all bonds, insurance, permits, and licenses.
 11. Providing public outreach for the duration of the project, including, but not limited to, pre-construction notices, construction area signage, community outreach, etc. Outreach to be coordinated with the various submittals required by the Contractor for coordination, traffic and pedestrian control, and general site controls for the project.
- B. Mobilization does not include costs associated with temporary traffic control.

1.2 NOTIFICATION OF RESIDENTS AND BUSINESSES

- A. This work shall include furnishing and distributing Two weeks and 72 hours advance notice flyers to residents and businesses on all streets and including side/cross streets adjacent, and all emergency, public transportation, and garbage/recycle collection services where contract work is to be performed. Notices shall be consistent with dates provided and posted on "No Parking Tow Away" signs.
- B. Notifications shall include at least the following information:
1. Identification of Contractor(s) including emergency contact name(s) and phone number(s),
 2. Description of work,

3. Dates and times of construction, and
 4. Information regarding street closures and/or detouring.
- C. The contractor shall submit to the City a draft of advance notices flyer in the form of a submittal for review and approval prior to distribution

PART 2 PRODUCTS

2.1 ADVANCE NOTICE FLYERS

- A. Flyer shall contain a general description of the work to be done, a schedule identifying the street segment and date that work is to be performed, and any restrictions that will be imposed as a result of the work.

2.2 NO PARKING SIGNS

- A. City will provide “No Parking” signs for the Contractor’s use on this project. Contractor shall arrange for the pickup of signs from Public Works Counter at City Hall not less than seven days prior to being needed.

PART 3 EXECUTION

3.1 DISTRIBUTION OF FLYERS

- A. Advance notice flyers shall be hand delivered by the Contractor to residents, schools, or businesses along the impacted streets, including side/cross streets adjacent at least seven to ten (7-10) calendar days in advance of the street closure. Notices shall also be placed on the front window of all vehicles parked against the curb. If different notices are used for different areas, the Contractor shall take care to deliver the appropriate notice to the correct location. In the vicinity of school areas, Contractor shall coordinate with City Staff and school principals to notify the parents of any changes in traffic patterns, detours, or parking restrictions. The notification shall include a copy of the approved Traffic Control Plan or detours around the school area.
- B. Notification shall consist of a procedure of written Two -weeks notices (handouts and/or mailings), and door-to-door notifications 72 hours prior to starting work for every phase of construction (Pavement repairs, concrete work, grinding, AC installation, slurry seal, striping, etc.).

3.2 NO PARKING SIGNS

- A. If necessary, “No Parking Tow Away” signs shall be posted on the front and back of Type II barricades, spaced no greater than 100-feet apart, a minimum of 48 working hours in advance of all work requiring parking restrictions. Only the date in which the parking restriction is needed shall be printed (in 2-inch letters) on the sign. All signs must be removed immediately after the work requiring the parking restriction has been completed.
- B. The first barricade of each block, on both sides of the street, in both directions of travel (4 totals) shall contain, in addition to the “No Parking – Tow Away” sign,

the advance notice flyer to provide property owners with a general description of the work to be done. The Contractor shall notify the inspector 48 hour in advance of the operation. City inspector will verify the posting and notify the police department.

3.3 PUBLIC OUTREACH

A. Public Outreach

1. The Contractor shall apply a proactive public outreach approach to construction operations throughout the duration of the project, including noticing the public prior to the beginning of construction activities. Outreach shall be coordinated with the project schedule and project components such as: traffic and pedestrian controls; noticing for residents; businesses; schools; etc. Ensure that the building/property manager or owner receives notifications for managed properties (i.e., apartments, businesses). Public outreach activities need to match updates to the project schedule, and also be timed appropriately for work items.
2. Multiple public notifications shall be provided for various work items as described elsewhere in the specifications.
3. Public outreach shall include daily and weekly activities to notify the public of construction impacts and progress. The Contractor shall designate a construction crew member for public outreach (outreach lead), who will be responsible for handling public outreach tasks and coordination, including coordination with the City. The outreach lead shall attend construction progress meetings.
4. Contractor shall utilize the project's web-based document management system for the transmittal of outreach materials for City and public.
5. Providing public outreach for the duration of the project, including, but not limited to, pre-construction notices, construction area signage, weekly electronic- based communication, community outreach, etc. Outreach to be coordinated with the various submittals required by the Contract for coordination, traffic and pedestrian control, and general site controls for the project.

END OF SECTION

SECTION 015100 – TEMPORARY UTILITIES AND FACILITIES

PART 1 GENERAL

1.1 SUMMARY

- A. It shall be the Contractor's responsibility to provide labor and equipment that is adequate for the performance of the Work under this Contract within the time specified. All equipment shall be kept in satisfactory operating condition, shall be capable of safely and efficiently performing the required Work.

1.2 POWER AND LIGHTING

- A. Power: The Contractor shall provide all necessary temporary power, including fuel, required for its operations under the Contract, including operation of traffic control devices, lighting, etc., and shall provide and maintain all temporary power lines required to perform the Work in a safe and satisfactory manner.
- B. Construction Lighting: All Work conducted at night or under conditions of deficient daylight shall be suitably lighted to ensure proper Work and to afford adequate facilities for inspection and safe working conditions. All construction lighting shall be shielded to reduce light from affecting non-work areas.
- C. Approval of Electrical Connections: All temporary connections for electricity shall be subject to approval of the City, the Engineer and the power company representative, and shall be removed in like manner at the Contractor's expense prior to final acceptance of the Work by the City.
- D. Separation of Circuits: Unless otherwise permitted by the Engineer, circuits separate from lighting circuits shall be used for all other power purposes.
- E. Construction Wiring: All wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place. All electrical facilities shall conform to the requirements of Title 8, Industrial Relations, Subchapter 5, Electrical Safety Orders, California Administrative Code; and Subpart K of the OSHA Safety and Health Standards for Construction.

1.3 WATER SUPPLY

- A. General: The Contractor shall be responsible for making necessary arrangements for obtaining construction water, and shall include the cost of obtaining and use of water in the various bid prices for the project.

1.4 SANITATION

- A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees and shall be regularly maintained to provide

clean, sanitary conditions.

- B. Sanitary and Other Organic Wastes: The Contractor shall establish a regular twice weekly collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 015550 – TEMPORARY TRAFFIC CONTROL SYSTEMS

PART 1 GENERAL

- A. Contractor is responsible for comprehensive site-wide temporary traffic control provisions. Under this item of work, Contractor is also responsible for providing regional temporary traffic control signs and Changeable Message Signs.

1.1 SUBMITTALS

- A. Administrative Submittals: Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.
- B. Shop Drawings:
 - 1. Traffic Control, Detour & Routing Plans, Pedestrian Control, and School Zone Access & Pedestrian Control Plans: As specified herein, and proposed revisions thereto. Submittals shall consider both the standard work day and nighttime operations. Traffic control plan shall be site specific and stamped by a licensed Civil/Traffic Engineer.

1.2 VEHICULAR TRAFFIC

- A. Traffic Control Plan: Detailed traffic control plans shall show the locations of traffic cones, k-rail, construction zones, flaggers, stored pipe and materials, construction truck access, barricades, detours, signs, changeable message boards, and other traffic control facilities. Submit traffic control plans five (5) working days prior to start of construction and throughout all construction stages as the Work progresses.
- B. Regional Traffic Management: Regional traffic control plans shall show the locations of access routes, closures, detours, temporary traffic signs, construction signage, changeable message boards, and other regional traffic control facilities. Plan shall show and accommodate adjacent projects. Submit traffic control plans five (5) working days prior to start of construction and throughout all construction stages as the Work progresses.
- C. Traffic Routing Plan: Show sequences of construction affecting the use of roadways, time required for each phase of the Work, provisions for decking over excavations and phasing of operations to provide necessary access, and plans for signing, signaling, barricading, and striping to provide passages for pedestrians and vehicles. Include schedule for covering traffic control signs (including detour signs) when not in use and uncovering just prior to use. Show applicable signs for each individual construction stage.
- D. Each afternoon at 3 p.m., meet with City or its designated representative to describe the following day's construction operations and the traffic control provisions. At each meeting, submit a detailed update of traffic control provisions and construction crew locations. This shall be submitted in hardcopy and electronic form using a Word file. The update shall contain a list of signs and the time and location for covering and uncovering signs.

1.3 TRAFFIC CONTROL ENGINEER

- A. The Traffic Control Plans and updates shall be prepared and presented by a registered civil engineer with expertise in traffic control (hereinafter designated as the Traffic Control Engineer). The Traffic Control Engineer shall develop and update Traffic Control Plans, oversee the field implementation of Traffic Control Plans, and provide quality assurance for compliance with traffic control procedures.
- B. Each evening and morning, signs shall be placed and removed as needed to inform the public of roadway closures, detours, work zones, and other traffic information. Each evening just before crews leave, all signs shall be removed of the job site

PART 2 PRODUCTS

2.1 CIP PROJECT SIGN

- A. Material: Aluminum 0.080"
- B. Size: 24"x36"
- C. Round all corners
- D. Colors:
 - a. Border – white,
 - b. Background – Green,
 - c. City of San Carlos Logo – Black, Green, and Yellow,
 - d. Text – white.

PART 3 EXECUTION

3.1 TRAFFIC CONTROL

- A. Traffic control shall be done in accordance with the California Manual on Uniform Traffic Control Devices (California MUTCD, Most recent version),
- B. Non-closure traffic control: Work that interferes with public traffic, either one-lane or two-lane traffic, shall not cause any traffic delays to public traffic between 7 a.m. to 8:30 a.m., nor more than 5-minute delays to public traffic between the hours of 8:30 a.m. to 4:30 p.m. Local traffic shall not be delayed at any time for more than 5 minutes. School buses shall not be delayed for more than 1 minute. During non-working hours, Saturdays, Sundays, and holidays, the full width of the traveled way in both directions shall be open for use by the public, unless approved for closure. Where road is closed to through traffic, full width of the roadway shall be open for local traffic during non-working hours. During working hours, one lane of the roadway shall be open for local traffic in both directions except as permitted in advance by the Engineer. Holidays shall be those designated by the City of San Carlos.
 - 1. Emergency Response Vehicles shall not be impeded at any time.
- C. Work hours shall be as stated in Special Provisions. Work hours shall be further

limited to daylight hours. Daylight hours are defined as 1/2 hour after sunrise and 1/2 hour before Sunset.

- D. Contractor shall fill or plate the trench at the end of each working day. Trench plates shall be textured to inhibit skidding. Use cold-patch or other means to feather transition at 3.3 percent (30:1) to plates. Where pit operations remain unfilled, steel plating shall be provided during non-working hours.
- E. Contractor shall provide the name and phone number for the Contractor's contact person for nighttime project operations. Replacement of non-working or stolen controls is required prior to commencing with construction.
- F. Minimum lane width during construction shall be 11 feet, unless noted otherwise.
 - 1. Nearest travel lane edge (tubular marker delineators) shall be no less than 8 feet from the edge of open trench. Contractor shall use K-Rail if 8 foot cannot be maintained
 - 2. Where cones are used to separate traffic lane from construction zone, do not use traffic lane for accessing construction zone and do not store materials or equipment on or near shoulder of traffic lane side of roadway.
- G. Whenever it is necessary to cross, close, or obstruct driveways and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.
- H. Driveway and Private Road Closures: Maintain satisfactory means of exit for persons residing or having occasion to transact business along the route of the Work. If it is necessary to close off vehicular access to property for periods greater than 2 hours, provide written notice to each owner/occupant so affected, 3 days prior to such closure. Steel traffic plates shall be readily accessible in case of emergency.
- I. Maintain top of backfilled trenches before they are paved to allow normal vehicular traffic to pass over. Provide temporary access driveways where required. Cleanup operations shall follow immediately behind backfilling.
- J. Notify the fire department, police/sheriff department, highway patrol, ambulance service, local school district, post office, refuse companies and transit agencies five (5) working days before closing roadway or portion thereof. Notify said departments or agencies when streets are again passable for vehicles. Conduct operations with the least interference to fire equipment access, and at no time prevent such access. Furnish Contractor's night emergency telephone numbers to the police or sheriff's department.
- K. Move mailboxes to temporary locations accessible to postal service and on completion of Work in each area, replace them in their original location and in a condition equal to or better than original.

- L. Contractor shall move property owners' (residents') garbage and recycle cans to areas accessible for garbage and recycle pick up. Garbage and recycle cans shall be returned to owners' driveway after pick up.
- M. Pedestrian and bicycle access along sidewalks and streets will be kept open and safe from construction activities, however necessary closures shall be detour and signed appropriately, per a Pedestrian Control Plan, where applicable.
- N. Coordination: Coordinate traffic routing with that of others working in the same or adjacent areas. Coordinate access for garbage pick up, mail delivery, and school buses.
- O. Barricades and Lights:
 - 1. Provide as shown on the Traffic Control Plans and in sufficient quantity to safeguard public and Work.
 - 2. Provide as necessary to prevent unauthorized entry to construction areas and affected roads, streets, and alleyways, inside and outside of fenced area, and as required to ensure public safety and the safety of Contractor's employees, other employer's employees, and others who may be affected by the Work.
 - 3. Provide to protect existing facilities and adjacent properties from potential damage.
 - 4. Locate to enable access by facility operators and property owners.
 - 5. Protect streets, roads, highways, and other public thoroughfares that are closed to traffic by effective barricades with acceptable warning signs.
 - 6. Locate barricades at the nearest intersecting public thoroughfare on each side of the blocked section and at any additional locations indicated on the Traffic Control Plan.
- P. Temporary Pavement Markings:
 - 1. Temporary Pavement Delineation: Whenever Contractor's operations reduce visibility of pavement delineation (lane lines, either pavement markers or painted lines or both, or temporary delineation) and pavement marking, such pavement delineation and pavement marking shall be replaced by either permanent or temporary delineation and marking before opening the traveled way to public traffic. Temporary delineation and marking shall consist of reflective traffic tape or reflective pavement markers, as determined by Engineer. Reflective tape for temporary delineation shall be applied in pieces not less than 24 inches long, or less than 4 inches wide, spaced no more than 24 feet apart. Reflective tape for pavement markings shall be placed to approximate the obliterated pavement markings, as determined by Engineer. Reflective traffic tape or reflective pavement markers shall be applied in accordance with the manufacturer's instructions. In areas where construction activity removes the pavement, Contractor shall use portable delineators (18 inches high by 2 inches wide) to designated travel lanes. Portable delineators shall be in accordance with the Standard Specifications. Once asphalt "plugging" of trench and damaged areas is complete, pavement markings and striping shall be replaced. Temporary pavement delineation shall be maintained by Contractor, at his own expense, until

it is replaced with permanent delineation. Final pavement markings and striping shall be done after completion of overlay.

Q. Signs and Equipment:

1. Traffic control signs and equipment shall be placed as shown on Traffic Constraint Drawings and as directed by the City.
2. Contractor shall maintain existing traffic control signs during construction. Roadway facilities and signs shall be protected in accordance with Section 15-1.02 and 7-1.11 of the Standard Specifications.
3. Portable TOW-AWAY-NO STOPPING Signs: Place where approved by police or California Highway Patrol.
4. TOW-AWAY-NO STOPPING signs shall be posted seventy-two (72) hours prior to construction activity requiring removal.
5. Portable BUSINESSES ARE OPEN Signs: Place at accesses to businesses in the vicinity of construction activities.
6. Tubular Markers or Traffic Safety Drums: Provide to delineate traffic lanes to guide and separate traffic movements.
7. Provide at obstructions, such as material piles and equipment, as directed by Engineer.
8. Illuminate barricades and obstructions with warning lights from sunset to sunrise, or as directed by Engineer.
9. Use to alert general public of construction hazards, which would include surface irregularities, unramped walkways, grade changes, and trenches or excavations in roadways and in other public access areas.
10. Post-mount informational signs (all ends of detour and throughout detour vicinity) of detour 5 working days before detouring any traffic as to the date, time, and duration of the detour. Sign shall be stenciled with 6-inch black letters on a retro-reflective orange background. Signs shall meet Caltrans specifications.
11. Place solar powered barricade-type lights on DETOUR signs and construction speed limit signs.
12. All portable and night use signs shall use "diamond" grade reflective lettering.
13. Detour signs shall be covered when not in use and uncovered just prior to use. Detour signs shall be covered with wood or metal. The use of easily displaced material such as plastic bags, burlap sacks, duct tape, etc. is not acceptable. All signs that are not applicable to the current construction stage shall be removed or covered.

R. At each road closure barricade, a flagger shall be provided. For each single-lane closure, flaggers shall be provided for each crew. Flaggers shall have radios for communication with other flaggers and with crew foremen. Flaggers shall not leave their posts unattended for any length of time. Provide replacement flaggers as required for continuous coverage.

S. Payment Reductions:

1. Owner reserves the right to retain amounts for non-compliance with the requirements of Section 015550, "Traffic Control", and Section 015600, "Protection of Existing Facilities", as follows:

- a. Non-compliance related to safety for workers or the traveling public:
 - 1) First non-compliance: \$1,000.
 - 2) Second non-compliance: \$5,000.
 - 3) Third non-compliance: \$10,000.
 - 4) Fourth and subsequent non-compliances, each: \$25,000.
- b. Safety related non-compliance relates to lack of k-rail, cones, barricades, light towers, reflective vests, delineators, flaggers, temporary or permanent striping, crash cushions, emergency access, warning signage, non-skid plates, sufficient clearance of stored pipe, dirt and mud free roads, or to other conditions such as uneven roads that endanger workers or the traveling public.
- c. Non-compliance related to work hours in City right-of-way:
 - 1) \$100 for each minute beyond the work hour limits.
- d. Non-compliance related to disruption of the traveling public other than work hour non-compliance:
 - 1) First non-compliance: \$0.
 - 2) Second non-compliance: \$500.
 - 3) Third non-compliance: \$1,000.
 - 4) Fourth and subsequent non-compliances, each: \$5,000.
- e. Non-compliance related to disruption of the traveling public relates to lack of informational or detour signage, failure to cover or uncover signs, failure to meet sequencing and completion. requirements of pipeline segments and locations, or to other conditions that give rise to disruption of the public such as blocked driveways, any delay to a school bus greater than 1 minute or delays related to lack of flaggers or radios.
- f. If non-complying work items are not corrected in the timeframe designated by Engineer, the City may perform the Work. For such Work, the cost, plus 100 percent for administration and overhead, will be retained from payments. This amount is in addition to the amounts indicated above.
- g. Amounts retained shall be credited to the Owner through a Change Order to the Contract.

3.2 CIP PROJECT SIGN

- A. The Vector files for the sign and logos shall be supplied to the sign manufacturer upon request. The Contractor shall provide the Company name and a 24-hour toll-free contact phone number on the sign. The Contractor shall check with the Project Manager to obtain the project name and telephone number before fabricating the sign.

END OF SECTION

SECTION 015600 – PROTECTION OF EXISTING FACILITIES

PART 1 GENERAL

1.1 SUMMARY

- A. The Contractor shall protect all existing utilities and all other improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. The Contractor shall verify the exact locations and depths of all utilities shown and the Contractor shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practical after award of contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall so notify the Engineer, and shall incorporate updated utility locations into the project record drawings.
- C. In the event it is necessary to respond with City crew in lieu of the Contractor to repair damages done to any City facilities caused by the Contractor's operations or as a consequences thereof, there shall be a minimum mobilization cost fee of \$500 for administrative overhead, billing and equipment use in addition to the actual hourly overhead rate (including benefits) billed for City employees and any materials costs. The Contractor shall be obligated to pay this amount separately to the City prior to the completion of the project and retention payment. The use of City crews will be at the discretion of the City.
- D. If a hazardous condition is observed and the City notifies the Contractor either directly or by telephone, the Contractor shall correct the condition immediately. If the Contractor fails to correct the condition immediately, the City reserves the right to call a local supplier(s) or Contractor to install the necessary measures such as lights, barricades, etc. The cost involved shall be deducted from any money due (or to become due) to the Contractor.
- E. Contractor shall perform a preconstruction photo survey to document the condition of existing improvements. The Contractor shall be responsible to adequately document the condition for size, kind, quantity and the extent of existing improvements. Photographs shall be for the purpose of documenting the pre-existing condition at the site of work. All surveys shall be delivered to the City prior to commencing work. In the absence of adequate preconstruction documentation, the Engineer's judgment shall be final.

1.2 RIGHTS-OF-WAY

- A. The Contractor shall not do any work that would affect any gas, sewer, storm drain, waterline, recycled waterline, telephone, railroad, or electric line, any fence, or any other structure, nor shall the Contractor enter upon the rights-of-

way involved until notified by the Engineer that the City has secured authority therefore from the proper party. After authority has been obtained, the Contractor shall give said party due notice of its intention to begin work, and shall give said party convenient access during the Contractor's work. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the City shall determine the sequence and order of the Work. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the City to the Contractor so desiring, to the extent, amount, in the manner, and at the times permitted. No such decisions as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the Work.

1.3 PROTECTION OF SURVEY MONUMENTS OR ROADWAY MARKERS

- A. Monuments placed by Surveyors must be preserved, in accordance with State Business & Professions Code section 8771. The Contractor shall not destroy, remove, or otherwise disturb any existing survey monuments, markers or other existing street or roadway markers without proper authorization. No pavement grinding, 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 for easy and accurate restoration. It shall be the Contractor's responsibility to notify the proper representatives of the City of the time and location that work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration.
- B. If monuments are disturbed by the Contractor, the Contractor shall hire a licensed surveyor to prepare and process a corner record or record of survey as appropriate through the City to reset the monuments. Surveyor records shall show the position of replacement monuments and post construction position of other monuments within the work area post-construction. The cost of preparing the necessary survey documents, processing the survey documents, and resetting the monuments shall be paid for by the Contractor. This work shall be completed prior to project acceptance and additional monies will be withheld for this work prior to the release of retention.

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 and 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. All temporary and permanent pavement shall conform to the requirements of the affected pavement owner. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.

- B. Temporary Trench Restoration: Wherever required by the public authorities having jurisdiction, the Contractor shall 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. The typical trench detail on the plans provides further information for temporary asphalt surfacing.
- C. Permanent Trench Restoration: In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall 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. Damaged edges of 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. The typical trench detail on the plans provides further information for permanent trench restoration.
- D. After all infrastructure has been installed and tested, and final approval of all testing has been provided by the City or its representative, the Contractor shall overlay all roadways affected by the Work per the drawings and Specification 321216, "Paving Systems."
- E. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed or damaged during construction, the Contractor shall 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 before proceeding with the final restoration or, if no such period of times is so fixed, the Contractor shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: The Contractor shall protect all Underground Utilities and other improvements which may be impaired during construction operations. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of utility lines to provide for uninterrupted service and to provide such special protection as may be necessary. Protection of existing utilities may include soil stabilization.
- B. Culverts: Existing culverts in and adjacent to the work area shall be protected from disturbance by the Contractor's activities relating to the Work. The Engineer shall be notified immediately if an existing culvert is disturbed as a result of construction activities. All costs associated with disturbing existing culverts shall be borne by the Contractor.
- C. Utilities to be Moved: In case it shall be necessary to move the property of any

public utility or franchise holder, such utility company or franchise holder will, upon request of the Contractor, be notified by the City to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

- D. Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is shown the Contractor shall remove and, without unnecessary delay, temporarily replace or relocate such utility or the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement to its former location and in new condition.
- E. City's Right of Access: The right is reserved to the City and 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.
- F. Underground Utilities Shown or Indicated: Existing utility lines that are shown or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the Contractor.
- G. Underground Utilities Not Shown or Indicated: Contractor is responsible to verify location of all utilities, whether shown in the plans or not. All costs for locating, replacement and/or repair of existing utilities shall be borne by the Contractor.
- H. In the event that the Contractor damages any existing utility lines, a written report thereof shall be made immediately to the Engineer.
- I. All water services that are damaged during construction of trenching operations shall be reconstructed from the corporation stop to the meter (for small diameter services or reconstructed from the gate valve to the meter (for larger diameter services), and all services shall be sleeved with PVC pipe prior to backfilling.
- J. Approval of Repairs: All repairs to a damaged improvement are subject to inspection and approval by an authorized representative of the improvement owner before being concealed by backfill or other work.
- K. Maintaining in Service: All oil and gasoline pipelines, power, and telephone or other 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 arrangements satisfactory to the Engineer are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The Contractor shall be responsible for and shall repair all damage due to the Contractor's

operations, 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.

- L. Pipeline Connections. The Contractor shall make all necessary connections to the existing pipelines. No connections to the existing system shall be made unless authorized in writing by the City or Engineer.
- M. Repair couplings on sanitary sewer laterals and water services are not allowed. All repairs shall be completed to the nearest existing pipe joint, asbestos cement (ACP) sanitary sewer laterals shall be taken back to the nearest existing joint and shall not be cut ACP. All removed pipe material shall be disposed of by the Contractor per State and local requirements. All costs for disposal of existing materials shall be borne by the Contractor.

1.6 TREES WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

- A. General: The Contractor shall 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 City or other jurisdictional agency. All existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the Contractor under the directions of an arborist certified by the Western Chapter of the International Society of Arboriculture hired by the Contractor or a certified tree company hired by the Contractor to the satisfaction of the City and/or agency. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.
- B. Trimming: The natural shape and form of the tree shall be preserved and enhanced; no stubs or splits or torn branches left; no topping or drop crotching; and clean cuts shall be made close to the trunk or large branches.
- C. Replacement: The Contractor shall immediately notify the City and/or other jurisdictional agency if any tree is damaged by the Contractor's operations. If, in the opinion of the City or said other agency, the damage is such that replacement is necessary, the Contractor shall replace the tree at its own expense. The size of the trees shall be not less than 1-inch diameter nor less than 6 feet in height. Fines will be assessed against the Contractor for trees removed without the City's prior written approval. The minimum amount of fine or restitution to the City will be the replacement of the tree removed, with one of equal or greater size and maturity and as approved by the City. Larger fines may be assessed against the Contractor depending upon the circumstances and type of tree removed, especially in the case of oak trees, and/or those trees listed on the City of San Carlos' and/or County of San Mateo's Historical Tree Lists.
- D. Any roots encountered greater than 2-inches in diameter shall be performed under the direct supervision of and in conformance with the recommendations of an arborist certified by the Western Chapter of the International Society of Arboriculture.

- E. The Contractor shall furnish all tools and equipment and employ sufficient trained personnel to operate all equipment and perform all handwork efficiently and skillfully.
- F. The Contractor shall be held responsible for any damage to trees, vegetation, or private property caused by its construction operations.

1.7 NOTIFICATION BY THE CONTRACTOR

- 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 the Contractor shall notify the Underground Service Alert agency and the respective authorities representing the owners or agencies responsible for such underground facilities not less than 48 hours prior to excavation so that a representative of said owners or agencies can be present during such work if they so desire.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 020010 – SITE CONDITIONS

PART 1 GENERAL

1.1 INFORMATION ON SITE CONDITIONS

- A. Information obtained by the City regarding site conditions, subsurface information, existing construction of site facilities and similar data will be available to prospective Bidders upon request at the office of the Engineer, prior to bid opening. This geotechnical investigation is not a part of this Contract. The investigation was performed for design purposes.
- B. Investigations conducted by Geotechnical Engineer of subsurface conditions were made for the purpose of study and design, and neither the Engineer nor the City assume any responsibility in respect to the sufficiency or accuracy of the soil borings, or of other investigations that have been made, or of the interpretations made thereof, and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations are representative of those existing throughout such area, or any part thereof, or that unforeseen for developments may not occur.
- C. Any logs of test borings, pits, geotechnical reports, or topographic maps showing a record of the data obtained by the Engineer's investigations of surface and subsurface conditions that are made available, shown on the plans, or bound herewith shall not be considered a part of the Contract Documents, said logs representing only the opinion of the Engineer as to the character of the materials encountered by him in his investigations and are provided only for the convenience of the Bidders.
- D. Information derived from inspection of logs of test borings, pits, topographic maps, geotechnical reports, or from Plans showing locations of utilities and structures will not in any way relieve the Contractor from any risk, or from properly examining the site and making such additional investigations as he may elect, or from properly fulfilling all the terms of the Contract Documents.

1.2 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall satisfy themselves as to the nature and location of the Work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, limited access to site, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, river stages, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment facilities needed preliminary to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under this Contract.
- B. The Contractor shall further satisfy themselves as to the character, quality, and quantity of surface and subsurface materials to be encountered during the course of execution of the work by inspecting the site as well as, any exploratory work

performed by the Engineer, and information presented by the Plans and Specifications made a part of this Contract. Any failure by the Contractor to acquaint themselves with all available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the Work. The Contractor shall use their own judgment in determining methods for safe construction, with awareness of the specific site conditions for this project.

- C. The Contractor shall anticipate underground obstructions such as utility lines, concrete, water table, soil conditions and debris. No extra payment will be allowed for the removal, replacement, repair or possible increased cost associated with existing utilities, trench instability or groundwater. Any utility lines or obstructions indicated on the map show only the approximate location and must be verified in the field by the Contractor. Even excavations that do not daylight into the limits of existing trench backfill can become unstable due to the effects of ground disturbance and reduced strength caused by past nearby excavations and backfills. The Contractor is responsible for locating all underground obstructions.
- D. The Contractor shall note that heavy truck and equipment operations may cause roadway damage in excess of normal usage. Damage caused to the streets, curbs, gutters, sidewalks or bike path by the Contractor's operations shall be repaired to a condition equal or better than the original condition at the Contractor's expense.

1.3 ADDITIONAL INFORMATION

- A. Prior to bidding, Bidders may make their own subsurface investigations subject to time schedules and arrangements approved in advance by the City. Before any subsurface test holes are excavated, obtain necessary permits to perform such work.
- B. Record drawings of existing City utilities are available for examination at City offices.

1.4 SURFACE FACILITIES

- A. The Contractor is advised that the Plans were prepared based on available information and, therefore, all existing surface facilities may not be shown on the Plans. It is the Contractor's responsibility to acquaint themselves with existing site conditions per this Section and anticipate those surface facilities which are typically encountered (fences, signs, mailboxes, sidewalks, driveways, ditches, AC pavement, AC dikes, curbing, power poles, overhead lines, landscaping, irrigation, etc.) and will affect the Work. The Contractor shall provide adequate security to protect the public and Work. No extra payment will be made to the Contractor for the repair, removal and replacement of such facilities. Full payment for this work shall be as included in the various bid items.

PART 2 PRODUCTS
Not Used.

PART 3 EXECUTION
Not Used.

END OF SECTION

SECTION 020030 – EXISTING UTILITIES AND UNDERGROUND STRUCTURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Refer to plans for the locations of utilities and underground structures.
- B. Contractor's responsibilities.

1.2 CALIFORNIA ADMINISTRATIVE CODE

- A. Section 1540(a)1 of Construction Safety Orders (Title 8) California Administrative Code, section 1540 states:

(1) "Prior to opening and excavation, effort shall be made to determine whether underground installations; i.e., sewer, water, gas, electric lines, storm drain, cable TV, telephone, and fiber optics, will be encountered and, if so, where such underground installations are located. When an excavation approaches the approximate location of such an installation, the exact location shall be determined by careful probing or hand digging; and, when it is uncovered, adequate protection shall be provided for the existing installation. All known owners of underground facilities in the area concerned shall be advised of proposed work at least 48 hours prior to the start of actual excavation."
- B. The approximate location of public utilities and underground structures was based on information provided by the utility owners. However, in accordance with California's Administrative Code, Section 1540, Contractor shall make the effort to determine the exact location of underground installations.

1.3 PUBLIC UTILITIES AFFECTED

- A. Electrical: Pacific Gas & Electric Company. It should be noted that where overhead service to a structure known to receive service does not exist, then underground service shall be assumed to exist. For underground utility location call Underground Service Alert (USA) at (800) 227-2600 or 811 at least two working days in advance.
- B. Natural Gas: Pacific Gas & Electric Company has jurisdiction over natural gas lines. For underground utility location call Underground Service Alert (USA) at (800) 227-2600 or 811 at least two working days in advance.
- C. Water Service: California Water Service Company and Mid-Peninsula Water District have jurisdiction over water mains and services within the specific limits of the project corridor.
- D. Drainage: The City of San Carlos has jurisdiction over drainage within the corporate limits of San Carlos.

- E. Roads: The City of San Carlos has jurisdiction over roads inside the corporate limits of San Carlos and the County of San Mateo for roads outside the corporate limits of San Carlos.
- F. Cable Television: Comcast. It should be noted that where overhead service to a structure known to receive service does not exist, then underground service shall be assumed to exist. For underground utility location, call USA at (800) 227-2600 or 811 at least two working days in advance.
- G. Telephone: AT&T. It should be noted that where overhead service to a structure known to receive service does not exist, then underground service shall be assumed to exist. For assistance with location of underground telephone facilities, call USA at (800) 227-2600 or 811 at least two working days in advance.
- H. Sanitary Sewer: The City of San Carlos has jurisdiction over the sewer mains and laterals within the specific limits of the project corridor.

1.4 CONTRACTOR RESPONSIBILITY

- A. The Contractor shall anticipate water, reclaimed water, sewer, storm drain, electrical, gas, cable TV, and telephone services. It may be expected that there will be variation in location from that as shown on the Plans to the actual location. Actual location shall be determined in the field after pre-marking by the various utilities affected.
- B. It should be understood that the various utilities are indicated on the Plans to show only the approximate location and must be verified in the field by the Contractor. The various utility agencies will cooperate with the Contractor to endeavor to familiarize him with all known underground utility obstructions, but this will not relieve the Contractor from full responsibility in anticipating and locating their actual existence. No extra payment will be allowed for the removal, replacement, repair, or possible increased cost caused by inadvertent or planned interception and breaking of underground obstructions which may exist.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 021100 – SITE PREPARATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Remove and dispose of surface debris.
- B. Prior to any excavation, obtain permission from the City, PG&E and/or any other affected utility providers to penetrate or excavate surfaces along the project route. Remove and dispose of paving, curbs, gutters, fences, posts, or structures indicated on the drawings.
- C. Soil stabilization.

1.2 RELATED SECTIONS

- A. Section 013100 – Coordination
- B. Section 015600 – Protection of Existing Facilities

1.3 REGULATORY REQUIREMENTS

- A. Conform to applicable codes and all local, state and federal regulations for disposal of debris and use of herbicides. Burning of debris, lumber or scrap will not be permitted.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Not used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Sawcut paving, curbs gutters and other structures between portion to remain and portion to be removed.
- B. The existing subgrade material shall be watered or scarified to obtain optimum moisture content and compacted to a relative compaction as specified to a depth of 6" below top of subgrade. Subgrade shall be graded to within 0.05' of the grade established by the Engineer.

3.2 OTHER IMPROVEMENTS

- A. Protect trees, plant growth, and features designated to remain, as final landscaping.

- B. Protect bench marks and existing structures which are to remain from damage or displacement.

3.3 REMOVAL

- A. Remove debris, rock, soil and extracted plant life from site. Dispose of materials at approved facilities.

END OF SECTION

SECTION 024100 - DEMOLITION

PART 1. GENERAL

1.1 SUMMARY

- A. Section Includes:
 - Demolition & Permits
 - Removal and Disposal
 - Recycling & Salvaging

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Demolition:
 - 1. Basis of Measurement: Not a measured item, unless specified otherwise on the Drawings.
 - 2. Basis of Payment: The cost of any works that relevant to demolition shall be considered as included in the contract prices for the various contract items of work involved, and no additional compensation shall be allowed therefor.

1.3 REFERENCES & RELATED WORK SPECIFIED ELSEWHERE

- A. Bay Area Air Quality Management District (BAAQMD) – <http://www.baaqmd.gov/>
 - 1. Regulation 11 (Hazardous Pollutants) and Rule 2 (Asbestos Demolition, Renovation, and Manufacturing).
- B. CALGreen Construction Waste Management Requirements
 - 1. <http://www.calrecycle.ca.gov/LGCentral/Library/CandDModel/Instruction/CALGreenTbl.pdf>
- C. California Occupational Safety and Health (Cal/OSHA)
 - 1. General Requirements
- D. Commercial
 - 1. USA Underground Service Alert
- E. Division 1
 - 1. General Requirements

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. The Contractor shall submit to the City a haul route for approval, prior to commencing any work. Truck traffic movement is limited between the hours of 9am to 3pm, unless

approved by the Project Manager. Hauling along Holly Street between Old County Rd and Industrial Rd is prohibited.

- C. Before disposing of any demolished material prior to any work
 - 1. Submit a written agreement from the property owner
 - a. For the use of the property
 - b. Absolving the City from responsibility in connection with the property.
 - 2. Obtain authorization to start
- D. Before Contract acceptance, submit a document signed by the owner of the material disposal site stating that the Contractor has complied with the Contractor-Owner agreement.
- E. Demolition Schedule: The Contractor shall submit a complete coordination schedule for demolition work including shut-off and continuation of utility services prior to start of the work. The schedule shall indicate proposed methods and operations of facility demolition, and provide a detailed sequence of demolition and removal work to ensure uninterrupted operation of occupied areas.
- F. All affected private properties will receive door hanger notices as specified in Section 015050 "Mobilization" prior to any utility shutoffs or frontage demolition and improvements.

1.5 JOB SITE CONDITIONS

- A. The Contractor shall visit the site and inspect the existing facilities. The City assumes no responsibility for actual condition of facilities to be demolished.
- B. Contractor shall use all means necessary to prevent the spread of dust during performance of the work. Thoroughly moisten all surfaces as required to prevent the generation of dust. No washing of streets is permitted.
- C. All liquid, and slurry generated during pavement sawcutting shall be collected and removed from the site. These liquids shall not be washed into the area storm drainage system.
- D. Contractor shall remove hazardous materials as described per the Project Asbestos and Lead Inspection Report.
- E. The Contractor prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable Asbestos Containing Materials (ACM).
- F. The Contractor must also provide the Environmental Protection Agency (EPA) with a 10 working day advance notice for any disturbance of Regulated Asbestos-Containing Material (RACM) greater than 160 square feet or 260 lineal feet, and as specified in Code of Federal Regulations (CFR) Title 40, Chapter I, Subchapter C, Part 61, Subpart M, Section 61.145.

PART 2. PRODUCTS (NOT USED)

PART 3. EXECUTION

1.6 INSTALLATION

- A. Notify anyone to be affected by demolition and construction activities including but not limited to: all schools, residences, businesses, garbage collection, utility companies (PG&E-Gas Distribution, PG&E Gas Transmission, PG&E-Electric, AT&T, Comcast, etc.), the Owner, etc. at least ten (10) working days prior to commencing the work of this section.
- B. Site Inspection:
 - 1. Prior to all work of this section, carefully inspect the site and all objects designated to be removed and to be preserved.
 - 2. Locate all existing active utility lines traversing the site and determine the requirements for their removal and/or protection.
- C. Clarification:
 - 1. The Drawings do not purport to show all objects existing on the site.
 - 2. Before commencing the work of this section, verify with the Owner all objects to be removed and all objects to be preserved
- D. Scheduling:
 - 1. Schedule all work in a careful manner with all necessary consideration for neighbors, operation of the existing facilities, and the public.
 - 2. Avoid interference with the use of, and passage to and from, residences and adjacent facilities.
- E. Protection of Utilities: Preserve in operating condition all active utilities traversing the site and designated to remain.

1.7 WATER POLLUTION CONTROL

- A. Water sprinkling, temporary enclosures, chutes and other suitable methods shall be used to limit dust and dirt rising and scattering in the air. The Contractor shall comply with all government regulations pertaining to environmental protection.
- B. The Contractor shall use equipment that will generate the least amount of dust. The Contractor shall provide dust control at all times including Saturdays, Sundays, and holidays unless directed otherwise by the Project Manager.
- C. Whenever the Contractor, in the opinion of the Project Manager, is negligent in controlling dust, the Project Manager may direct attention to the existence of a dust hazard and instruct the Contractor to immediately alleviate the dust hazard. The Contractor shall be responsible for any damage cause by dust generated as a result of the Contractor's operations.

- D. The Contractor shall have a commercial standard street vacuum/sweeper operational and in operation during each working day. The street vacuum/sweeper shall be able to pick up sand, gravel, dust, and debris, and other things, shall minimize dust generation, and shall also be available during the day and shall sweep as outlined below and as directed by the Project Manager.
- E. If the Contractor is performing work that generates dust and debris then during the day (including weekends and holidays) the sweeper shall sweep the project area (full length, width, and all lanes) twice a day sometime between 9:00a.m. and 11:00a.m. and also between 2:00p.m. and 4:00p.m. Hardscape surfaces (including pavers, sidewalks, and areas inaccessible by a mechanical sweeper) shall have dirt, dust, and debris removed by hand sweeping. If the Contractor fails to fulfill the responsibilities of this section, the City will perform or contract with others to perform the work and all costs incurred to the City shall be withheld from future payments to the Contractor.
- F. The Contractor shall clean the sidewalk and gutter as many times as needed to make sure the sidewalk and gutter are out of dirt, debris and small rocks at all times. The Contractor shall be prepared to sweep surfaces immediately at the request of the Project Manager, should the Project Manager deem it necessary for public safety and to avoid damage to properties. If streets are not satisfactorily cleaned within 12 hours from verbal or written notice by City personnel, the City will hire an independent sweeping company and deduct the cost for such work from payments due to the Contractor.
- G. Water shall not be used in a manner that creates hazardous or objectionable conditions such as ice, flooding, or pollution.
- H. The site shall be kept neat and orderly during the demolition to the maximum extent practical.
- I. Public right-of-way and private property shall be kept free of debris at all times.
- J. Stockpiles of demolished items or materials shall be removed from the site on a daily basis or stored in waste containers which shall be emptied on a weekly basis or as conditions require in order to manage the accumulation of waste.
- K. Accumulations of flammable materials shall not be permitted.

1.8 PROTECTION

- A. Safe passage of persons around area of demolition shall be provided in accordance with all safety and regulatory requirements. Operations shall be conducted to prevent damage to adjacent buildings, structures, other facilities, people and property. Safe passage provided by Contractor will be ADA complaint.
- B. Interior and exterior shoring, bracing, or supports shall be provided to prevent movement, settlement or collapse of structures to be demolished and to adjacent facilities to remain.
- C. Existing landscaping materials, structures, and appurtenances which are not to be demolished shall be protected and maintained as necessary.

- D. The Contractor shall repair any landscaping and irrigation system removed or damaged as a result of the Contractor's operation or where proposed improvements are a conflict. Active irrigation lines necessary for landscaping shall be relocated and made operational within 48 hours of their removal.
- E. The Contractor shall protect and maintain conduits, drains, sewers, pipes and wires that are not to be demolished.
- F. Use all means necessary to protect existing objects designated to remain or to be preserved must remain operational during installation of the replacement pipeline. In the event of damage, immediately notify the Owner and make all repairs and replacements necessary for approval by the Owner at no additional cost to the Owner.

1.9 SURFACE DEMOLITION

- A. All asphalt concrete and all Portland cement concrete curbs, gutters, sidewalks, access ramps and driveways shall be saw-cut at the nearest scoreline or deep joint and removed entirely to the saw-cut limits.
- B. Where adjacent pavement or concrete is broken or damaged sufficiently to prohibit a sound replacement the entire damaged section shall be removed to the limits determined by the Project Manager.
- C. Asphalt concrete, sidewalk, concrete curb, and gutter materials to be demolished shall be broken up and removed from the site by the Contractor at no additional cost to the City.
- D. Where shown on the Drawings, the Contractor shall remove required pavement section including base material. Subsoil removal is also included where required to achieve design subgrade.

1.10 DEMOLITION BELOW THE SURFACE

- A. Existing structures, pavement slabs and structural sections to be abandoned shall be demolished to an elevation three feet below finished grade. Their bottoms (if any remain) shall be broken thoroughly to prevent entrapment of water and all voids backfilled with suitable backfill
- B. Demolition areas and voids resulting from demolition of structures below the surface shall be completely filled.
- C. All fill, compaction, and holes created by demolition work shall be backfilled with imported clean fill. Lay fill down in layers not exceeding 6" thickness and compact per the earthwork specifications. Grade the site to drain to the nearest storm drainage system without any low points.
- D. All fill and compaction surfaces shall be graded to meet adjacent contours and to provide flow to surface drainage structures, or as shown on the Drawings.

- E. Pipes to be demolished that require no future connection shall be removed to the extent required, sealed and capped. Pipe sections shall be removed by removing a complete pipe section to an existing joint, or other adequate means which results in a clean joint.
- F. The Contractor shall demolish or dismantle and remove all items that are noted for demolition and removal in the Contract Documents and that will interfere with the planned construction, or as otherwise directed by the Project Manager.
- G. The Contractor shall demolish or dismantle and remove all abandoned conduits or structures that are encountered during the prosecution of the work and which interfere with the construction of the work upon the approval of the Project Manager.

1.11 REMOVAL OF EXISTING WATER AND SEWER-SERVICES

- A. GENERAL ABANDONMENT:
 - 1. When salvage materials are shown on the Drawings; salvage and arrange the existing facilities (i.e., meters, manhole covers, manhole frames, etc.) to be dropped off at the City's Corporation Yard by prior arrangement.
 - 2. Properly remove or abandon in place unused existing City utility service lines discovered that were left in place by others.
 - 3. Contact utility companies for removal, abandonment, adjustment or relocation of their facilities.
 - 4. Contractor is responsible for verifying the location of any existing utilities.
 - 5. Abandonment of pipes will include filling pipe with slurry as specified in Section 19-3.02G – Controlled Low-Strength Material of the State Standard Specification and capping the pipes at the ends.

1.12 DISPOSAL OF DEMOLISHED MATERIALS

- A. Demolition and removal of debris shall be conducted to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities which shall not be closed or obstructed without permission from the City. Alternate routes shall be provided to circumvent closed or obstructed traffic ways.
- B. The Contractor shall comply with all pertinent regulations of Cal/OSHA and local codes and practices.
- C. All existing materials that are designated to be salvaged shall be removed, cleaned and hauled to the City Corporation Yard, unloaded and stockpiled unless otherwise directed by the Project Manager.
- D. Site debris, rubbish and other materials resulting from demolition operations shall become the property of the Contractor and shall be removed by the Contractor at the Contractor's expense. The proper and legal disposal of demolished materials shall be the responsibility of the Contractor. All disposal sites and recycling facilities shall be approved by the City prior to initiation of the Work.
 - 1. Concrete debris shall be transported to a recycler of such materials.

2. Hazardous materials shall be handled and disposed of in accordance with all applicable laws, codes, and regulations.

1.13 PATCHING AND REPAIRING

- A. The Contractor shall provide patching, replacing, repairing and refinishing of damaged areas or damaged adjacent facilities involved in the demolition.
- B. New concrete shall match the existing adjacent surfaces, in kind, or of better quality, as per City Standard Details and to the satisfaction of the Project Manager, at no cost to the City or to the owners of the facilities.

1.14 CLEAN UP

- A. During and upon completion of work the Contractor shall promptly remove unused tools and equipment, surplus materials, rubbish, debris and dust and shall leave areas affected by work in a clean, approved condition.
- B. The Contractor shall clean adjacent structures and facilities of dust, dirt and debris caused by demolition, as directed by the Project Manager, and return adjacent areas to condition existing prior to start of work.
- C. The Contractor shall clean and sweep daily all street and roads affected by its operation.

END OF SECTION

SECTION 310513 – CLEARING & GRUBBING, EXCAVATION, AND EARTHWORK

PART 1. GENERAL

1.1 SUMMARY

A. Section Includes:

1. Clearing and Grubbing
2. Excavation
3. Earthwork
4. Grading and Compaction
5. Subsoil materials – Import Fill and Select Fill
6. Topsoil materials.

B. Related Sections:

1. Project Geotechnical report; bore hole locations and findings of subsurface materials if applicable.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).
2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³).
3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

C. California Building Code – Appendix J - Grading

D. State Standard Specifications:

1. Section 14 – Environmental Stewardship
2. Section 17 - General
3. Section 19 – Earthwork

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

- B. Samples: Submit results of the soil samples by a certified testing laboratory prior to importing onto the site for approval by the Project Manager.
- C. Materials Source: Submit name of imported materials source.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Furnish each subsoil material from single source throughout the Work.

PART 2. PRODUCTS

2.1 SUSTAINABILITY CHARACTERISTICS

- A. Materials and Resources Characteristics:
 - 1. Regional Materials: Furnish materials extracted, processed, and manufactured within 250 miles of jobsite.

2.2 SUBSOIL MATERIALS

- A. Select Fill Material:
 - 1. Subsoil material is on-site excavated material.
 - 2. Graded
 - 3. Non-hazardous
 - 4. Free of lumps larger than three (3) inches, rocks larger than two (2) inches, organic matter, frozen or other deleterious materials and debris.
 - 5. Selected material encountered in excavation within the right of way shall be used for finishing the top portion of the roadbed, constructing shoulders, structure backfill; as shown on the Drawings; as specified in the Special Provisions, or as directed by the Project Manager.
- B. Import Fill Material:
 - 1. Subsoil material imported from sources outside the project site meeting.
 - 2. Graded
 - 3. Non-hazardous
 - 4. Free of lumps larger than three (3) inches, rocks larger than two (2) inches, organic matter, frozen or other deleterious materials and debris.
 - 5. Unless otherwise specified, the Contractor shall obtain from the owners the right to procure material, pay all royalties and other charges involved, and bear all expense of developing the sources, including rights of way for hauling.
 - 6. No import fill material shall be delivered to the site until approved by the Project Manager. Approval of import fill material shall be based on the testing of representative samples submitted by the contractor meeting the appurtenant Geotechnical Report and approved by the Project Manager. Such representative

samples shall be submitted to the Project Manager not less than 15 days prior to commencing the work.

7. Imported fill, delivered to the site, that significantly differs from the submitted samples shall be subject to rejection. Rejected materials shall be removed from the site at the Contractor's expense
8. Approval of a particular import fill material shall constitute approval of only that portion of the proposed borrow source represented by the submitted sample.
9. Except as otherwise permitted, borrow pits and other excavation areas shall be excavated in such manner as will afford adequate drainage. Overburden and other spoil material shall be transported to designated spoil areas or otherwise disposed of as directed, local borrow pits shall be neatly trimmed and left in such shape as will facilitate accurate measurement after the excavation is completed.

2.3 FILL MATERIALS:

- A. Fill material shall conform to the following as determined by ASTM C 117 and ASTM C 136:
 1. Maximum particle size 3 inches
 2. Percent passing 1-inch sieve 90-100 percent
 3. Percent passing No. 200 sieve less than 20 percent
- B. Imported non-expansive fill shall consist of a well-graded, slightly cohesive soil with relatively impervious characteristics when compacted.
- C. Plasticity Index for acceptable import fill materials shall be a maximum of 15 when determined by the procedure set forth in ASTM D 4318.
- D. The liquid limit shall not exceed 40 percent as determined by the procedures set forth in ASTM D 4318.
- E. Import fill material shall have an R-value of 25 or greater as determined by ASTM D 2844.

2.4 TOPSOIL MATERIALS

- A. Topsoil shall be imported top soil.
- B. Topsoil excavated within the limits of the project, as approved by the Engineer, will be considered as a material only for the purpose of backfilling areas to be planted.

2.5 SOURCE QUALITY CONTROL

- A. Testing and Analysis of Subsoil and Topsoil Materials: Perform in accordance with ASTM D698, ASTM D1557, and AASHTO T180.
- B. When tests indicate materials do not meet specified requirements, provide alternate materials and retest.
- C. Furnish materials of each type from same source throughout the Work.

PART 3. EXECUTION

3.1 PREPARATION

- A. Call USA not less than two (2) working days before performing Work that can be marked by USA in a timely manner.
- B. Request underground utilities to be located and marked within and surrounding construction areas.
- C. Identify required lines, levels, contours and datum.
- D. Notify utility companies to remove and relocate utilities where shown on the Drawings.
- E. Protect utilities indicated to remain from damage.
- F. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- G. Protect benchmarks or monuments, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- H. The ground shall be prepared to receive select fill by removing vegetation, topsoil and other unsuitable materials, scarifying the ground to provide a bond with the fill material, and compacting the fill at optimum moisture content.

3.2 CLEARING AND GRUBBING

- A. Clearing and grubbing shall be per Section 17-2 Clearing and Grubbing of the State Standard Specifications.
- B. Clear and grub before performing earthwork in an area.
- C. Do not injure standing trees, plants, and improvements shown to be protected.
- D. Clear and grub the entire length of the job site to the following widths:
 - 1. 5 feet outside of excavation and embankment slope lines where slopes are not rounded
 - 2. Outside limits of slopes where slopes are rounded
 - 3. 5 feet outside of structures
 - 4. 2 feet outside of slope lines for ditches and channels with a bottom width of less than 12 feet
 - 5. 5 feet outside of slope lines for ditches and channels with a bottom width of 12 feet or more
- E. Clearing and grubbing shall consist of removing all objectionable material from within the limits of the project. The limits of clearing and grubbing shall be of sufficient area and depth to complete the work shown on the Drawings or as described herein in.
- F. Clear all construction areas above original ground of the following to a minimum depth of eight (8) inches below subgrade or eight (8) inches below original ground, or as required by the appurtenant geotechnical report, whichever is lower:

1. All vegetation such as trees, logs, upturned stumps, roots of downed trees, brush, grass, and weeds and
 2. Other objectionable material including concrete, masonry, and debris.
- G. No burning of materials is allowed.
- H. The site shall be stripped and cleared of all vegetation, debris, and organic-laden top soil as required by the Engineer.
- I. Trees within the limits of work including any traffic control work beyond the limits of work and within the area of influence shall be evaluated by the City or; a City approved certified Arborist to assess protection measures. No trees will be removed until they have been tagged, numbered and a written release for the tree has been issued by the City.
- J. This project includes work on streets with mature trees adjacent to the proposed work. It is the responsibility of the Contractor to trim the tree branches as necessary. Compensation for this work shall be included in the various other items of work and no separate payment will be made therefor.
- K. Tree stumps which are designated to be removed, shall be excavated and removed 30" down to remove the tree trunk, roots, and backfill with fill material and compact as required in this section, unless specified otherwise on the Drawings.
- L. Grub all construction areas to a depth of at least 0.50 feet, necessary to remove all existing tree stumps, roots, buried logs and other objectionable material, unless noted otherwise on the Plans. In embankment areas where the grading plane is 2 feet or more above original ground, cut off trees, stumps, and roots not more than 1 foot above original ground, except, remove trees, stumps, and roots completely where work includes any of the following:
1. Structure construction
 2. Pile construction
 3. Subdrainage trench excavation
 4. Removal of unsuitable material
 5. Cutting into slopes of original hillsides, old or new fill
 6. Utility line construction

3.3 EXCAVATION

- A. Work under this section shall consist of performing all operations necessary to excavate earth and rock, regardless of character and subsurface conditions, from the roadway prism or adjacent thereto, to excavate all materials, of whatever nature, necessary for the construction of foundations for structures and other facilities; to excavate drainage and irrigation ditches; to excavate drainage channels; to excavate selected material and import material for use as specified; to construct embankments including the placing of selected fill or import fill material in connection therewith as specified; to place backfill for structures, and other facilities; to backfill trenches and depressions resulting from the removal of obstructions; to backfill holes, pits and other depressions; to remove and replace unsuitable material; to excavate and grade road approaches, driveways, sidewalks, curb ramps, curb and gutters, plazas, parking lots, and connections; to construct protection dikes; to remove unstable material, slide material which has come into the graded area, and material which has slipped from embankments; all as shown

on the plans and as specified in these Specifications and the Special Provisions and as directed by the Project Manager; and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work that may be required to construct and maintain the project facilities, except excavation, trenching and backfilling for pipe, culverts, utility systems, and other subsurface pipes.

- B. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.
- C. Stockpile excavated material meeting requirements for subsoil fill materials and topsoil materials approved by the Project Manager.
- D. If practicable and unless processing of material is required, haul selected material directly from the excavation to its final position in the roadway prism and compact it in place.
- E. Excavate to the described or authorized grade. If the Contractor over excavates, backfill with an authorized material and compact it at the Contractor's own expense.
- F. Do not excavate wet subsoil unless directed by the Project Manager.
- G. The temporary slope of cut surfaces shall be no steeper than is safe for the intended use, and shall not be more than one-unit vertical in two units horizontal (50-percent slope) unless approved by the Project Manager or appurtenant geotechnical report.
- H. Archaeological Resources: Contractor shall conform to Section 14 – Environmental Stewardship of the State Standard Specifications. If archaeological resources are discovered within or near construction limits, do not disturb the resources and immediately:
 - 1. Stop all work within a 60-foot radius of the discovery
 - 2. Secure the area
 - 3. Notify the Project Manager.
- I. City will investigate the discovery. Do not move archaeological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.
- J. Environmentally Sensitive Areas (ESA): If an ESA is shown on the Drawings, the boundaries are approximate. Do not enter an ESA unless authorized. If an ESA is breached, immediately:
 - 1. Stop all the work within 60 feet of the ESA boundary
 - 2. Secure the area
 - 3. Notify the Project Manager

If an ESA is damaged, the Project Manager determines the necessary remediation and the party to perform the work. The City deducts the cost for this work from the Contractor bid price.
- K. Notify the Project Manager when buried man-made objects are encountered in an excavation as part of the excavation work and wait for direction from Project Manager unless shown on the plans for removal. All surplus material shall be disposed offsite.

- L. Remove excess excavated materials, subsoil and topsoil not intended for reuse, from site.
- M. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.
- N. When hauling is done over highways or City streets, and when directed by the Project Manager the loads shall be trimmed and all material removed from shelf areas of vehicles in order to eliminate spilling of material. If directed by the Project Manager, the loads shall be watered down or covered after trimming to eliminate dust.
- O. Excavation shall include the satisfactory removal and disposition of all materials not classified as rock excavation.
- P. Earth and rock, regardless of character and subsurface conditions, shall be excavated to the lines and grades as established by the plans.
- Q. All existing materials that are designated to be salvaged shall be removed, cleaned and hauled to the City Corporation Yard, unloaded and stockpiled, by the Contractor unless otherwise directed by the Project Manager.
- R. Existing pipes to be abandoned shall be filled with slurry, minimum of thirty (30) feet from either ends of the pipe and capped with concrete at the ends.
- S. Existing structures, pavement slabs, and structural sections to be abandoned shall be demolished to an elevation three (3) feet below finished grade, unless specified otherwise on the Drawings. The bottom (if any remains) shall be broken thoroughly to prevent entrapment of water and all voids backfilled with suitable backfill.
- T. Operations shall be conducted in such a manner that existing street, facilities, utilities, railroad tracks and other non-street facilities which are to remain in place will not be damaged.
- U. The Contractor, at his expense, shall furnish and install-sheet piling, cribbing, bulkheads, shores or whatever means may be necessary to adequately support material carrying such facilities, or to support the facilities themselves, and shall maintain such supports until they are no longer needed. Temporary pavements, facilities, utilities and installations shall also be protected until they are no longer required. When temporary supports and other protective means are no longer required, they shall become the property of the Contractor and shall be removed and disposed of from the job site
- V. Prior to placing import fill material, all areas to receive fill shall be scarified and compacted. Unless otherwise stated in the appurtenant Geotechnical report, the area shall be scarified to a minimum of eight (8) inches, material shall be moisture conditioned by wetting or drying to optimum moisture content, and compacted.

3.4 ROCK EXCAVATION

- A. Rock excavation shall include excavating, grading, and disposing of materials classified as rock and shall include the satisfactory removal and disposition of rock 1/2 cubic yard or more in volume.

- B. No blasting is allowed.

3.5 GRADING

- A. Grading shall consist of placing fill materials on site to contours and elevations with select fill or import fill materials.
- B. Place fill material in continuous layers of maximum lifts of 8 inches (0.67 feet) and compact in accordance with schedule shown in this section, unless otherwise shown on the appurtenant Geotechnical Report.
- C. Maintain optimum moisture content of fill materials to attain required compaction density.
- D. Construct slopes to the lines and grades shown on the Drawings.
- E. Slope grade away from the building minimum 2% slope for a minimum distance of 10 feet, unless noted otherwise.
- F. Make grade changes gradual. Blend slopes into level areas.
- G. Round the tops of excavation slopes and ends of excavation.
- H. Maintain completed slopes. Repair any slopes damaged by erosion.
- I. Repair or replace items indicated to remain that are damaged by excavation or filling.
- J. Identify any site low points which need positive drainage and make adjustments with approval from Project Manager prior to pouring concrete.
- K. Protection of existing slopes using erosion control measures as required in Section 015723 – Storm Water Pollution Prevention Plan.

3.6 TOLERANCES

- A. Section 01 45 16 – Quality Control: Tolerances.
- B. Immediately before placing subsequent layers of material, prepare the grading plane such that the grading plane:
 - 1. Does not vary more than 0.05 foot above or below the grade established by the Engineer where Hot Mix Asphalt (HMA) or aggregate base are to be placed.
 - 2. Does not extend above the grade established by the Engineer where concrete base or pavement is to be placed.
 - 3. Beneath structural approach slabs or the thickened portion of sleeper slabs do not extend above the grade established by the Engineer.
 - 4. At any point is within 0.05 foot above the grade established by the Engineer if the material to be placed on the grading plane is paid by the cubic yard.

3.7 COMPACTION

- A. Relative compaction specifications apply to material whether in an excavation or an embankment.
- B. The moisture content of material to be compacted to at least 95 percent must be such that the specified relative compaction is attained.
- C. Compact earthwork to a relative compaction of at least 95 percent for at least a depth of:
 - 1. 0.5 foot below the grading plane for the width between the outer edges of shoulders
 - 2. 2.5 feet below the finished grade for the width of the traveled way including any parking lots or other vehicular areas; to extend plus two (2) feet on each side.
- D. All fill material shall be compacted to at least 90 percent of maximum density as determined by ASTM D1557, Modified Proctor, beyond the depth specified above in 3.7.C.

3.8 STOCKPILING

- A. Stockpile materials on site will not be permitted unless authorized by Project Manager.

3.9 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION

SECTION 320120 – ASPHALT CONCRETE GRINDING

PART 1. GENERAL

1.1 WORK INCLUDED

- A. Work covered by this section includes grinding of the existing pavement with various thicknesses. Work shall be in conformance with Section 39-3.04, "Cold Planing Asphalt Concrete," of the 2015 Caltrans Specifications.
- B. Work may include, but is not limited to, wedge grinding, conform grinding, mill and fill, removal of asphalt concrete on top of the gutter pan, and grinding sections of AC at humps causing drainage issues, as shown on the plans and as directed by the Engineer to accommodate actual field conditions.

PART 2. MATERIALS

- A. The asphalt concrete grinding machine shall have a cutter head at least 6 feet in width and have automatic controls that accurately establish or maintain existing profile grades at each edge of the cutter by referencing from the existing pavement or an independent grade reference. The planing machine shall be operated in such a way so as not to produce smoke or fumes.
- B. The cold planing machine shall be capable of planing the pavement without requiring the use of a heating device to soften the pavement during or prior to the planing operation.

PART 3. EXECUTION

3.1 PREPARATION

- A. **Pavement to be cold planed may contain pavement fabric.** Pavement borings are not representative of entire street work limits. The assumption that fabric is present or not shall be at the sole risk of the Contractor. There shall be no adjustment in compensation to the Contractor for cold planing asphalt concrete pavement that contains pavement fabric.
- B. Cold plane existing asphalt paving to a minimum depth that results in a new HMA pavement section which is minimum thickness as shown on the Drawings. Contractor shall make a sawcut after cold planing at the conform edges to allow for a minimum 2-inch vertical surface at the conforms.
- C. Standard wedge grinding for the various conditions shall be as shown on the plans. For standard wedge grinding adjacent to the lip of gutter, the cut shall taper from zero inches (0") to the depth of overlay below the gutter lip. Conform grinding at intersections or at transverse street conform limits shall be a minimum twenty feet (20') wide unless noted otherwise, tapering from zero inches (0") to the depth of overlay. All keys shall be formed to a true vertical surface.

3.2 COLD MILLING AND AREA GRINDING ASPHALT CONCRETE PAVEMENT

- A. The outside lines of the planed area shall be neat and uniform. The roadway surface to remain in place shall not be damaged in any way. The Contractor shall replace the teeth on the planing machine when necessary in order to provide a final cut with uniform grooves and ridges. The final cut shall result in a uniform surface and meet the approval of the Engineer.
- B. Contractor shall place and maintain warning signs and temporary AC "ramps" at all pedestrian and vehicular crossings over the entire length of grinding. HMA for temporary tapers must be of the same quality that is used for the HMA overlay.
- C. It is the Contractor's responsibility to ascertain the location of, and avoid damage to, all manholes, water valves, gas valves, survey monument covers and adjacent concrete improvements. Traffic loop detectors and home runs shall be protected unless called for replacement on the plans or otherwise directed by the Engineer. Contractor shall notify the Engineer a minimum of one (1) week prior to beginning work near the loops. All improvements damaged by the grinding operation shall be replaced at the Contractor's expense.
- D. The material ground from the roadway surface, including material deposited in existing gutters or on the adjacent travel way, shall be immediately removed from the work site and disposed of in a legal and proper manner. The planer shall pick up the material as it progresses, or a removal crew shall follow within 50 feet of the grinding operations to pick up the material.
- E. The Contractor shall be responsible for maintaining the street in a clean condition during the course of the cold planing or grinding operations using a vacuum sweeper.
- F. No longitudinal drop-off of more than 0.15 foot will be allowed at any time between any adjacent lanes open to public traffic at the end of the working period. When allowed by the Engineer, the Contractor may cold plane the final longitudinal pass between adjacent travel lanes such that a minimum 30:1 slope is maintained between the cold planed surface and the adjacent existing pavement grade when opened to public traffic. There shall be no adjustment in compensation to the Contractor for making additional passes or to comply with this requirement.
- G. If a drop-off between the existing pavement at conform lines and driveways (businesses, schools, offices, commercial, residential, etc.), and the planed areas at transverse joints cannot be avoided before opening to traffic, construct a temporary HMA taper. The HMA temporary taper must be:
 - 1. Placed to the level of existing pavement and tapered on a slope of 30:1 (horizontal: vertical) or flatter to the level of the planed areas.
 - 2. Compacted by any method that will produce a smooth riding surface.
- H. Where When the existing pavement surface adjacent to any frames, covers, grates, manholes, or driveways is removed by cold planing, and the top layer of asphalt concrete is not placed during the same working period, the Contractor

shall place temporary tapers around each frame, cover, grate, manhole, or driveways prior to opening the area to any public traffic. Temporary asphalt concrete tapers shall be ramped on a slope of 30:1 or flatter from the level of the planed surface to the top of the facility cover. Material for temporary tapers shall be commercial quality (hot mix) asphalt concrete. A commercial grade roofing paper or other suitable material shall be placed beneath the temporary ramps and tapers. Temporary asphalt concrete tapers shall be completely removed before placing the permanent surfacing.

- I. Temporary ramps and tapers shall remain in place no longer than seven (7) calendar days. Material for temporary ramps and tapers shall be commercial quality (hot mix) asphalt concrete and may be spread and compacted by any method that will produce a smooth riding surface. A commercial grade roofing paper or other suitable material shall be placed beneath the temporary ramps and tapers.
- J. Temporary asphalt concrete ramps shall be completely removed before placing the permanent surfacing. The removed ramp materials shall be disposed of outside the highway right-of-way in accordance with the provisions of Section 7-1.13, "Disposal of Material Outside the Highway Right-of-Way" of the State Standard Specifications.
- K. The asphalt concrete inlay/overlay operation shall start no later than seven (7) calendar days after the start of planing.
- L. All existing pavement shall be trimmed as required to provide a smooth face to abut the new pavement. The ground areas shall be smooth, and have a dry and properly prepared surface prior to the start of paving operations. It shall be free from all loose screening and other loose or foreign material.
- M. Contractor shall notify Engineer (in writing) at least forty-eight (48) hours prior to grinding. Work shall not proceed until Engineer has approved grinding schedule.
- N. The Existing pavement section information from pavement cores at various locations are shown on the plans, however the pavement section may vary between coring locations. If the subgrade material is being removed by the cold plane equipment then the Contractor will adjust the depth of removal to just remove the asphalt concrete pavement. There shall be no adjustment in compensation to the Contractor for adjusting cold planing depth.

3.2 REQUIREMENTS

- A. Care shall be taken to avoid damage to adjacent improvements. All damage shall be repaired by Contractor.
- B. Contractor shall place and maintain warning signs and temporary AC patch material to serve as "ramps" at all pedestrian and vehicular crossings over grind area.
- C. All material removed by grinding shall be cleaned up and legally disposed of outside of the City limits, unless directed otherwise by the Engineer. Recycling of

the material is encouraged in compliance with the City recycling ordinance, described in the Special Provisions of these specifications.

END OF SECTION

SECTION 321123 – AGGREGATE BASE COURSES

PART 1. GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Class 2 Aggregate Base course.
- B. Related Sections:
 - 1. Section 321216 – Paving Systems
 - 2. Section 321313 - Concrete Improvements.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Aggregate Base used under concrete work such as curb and gutter, valley gutter, sidewalk, retaining curbs, etc. shall be considered incidental to the item most closely related to and no separate compensation will be allowed therefor.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
- B. Caltrans Standard Specifications:
 - 1. Section 26 Aggregate Base.
- C. CalRecycle
 - 1. <http://www.calrecycle.ca.gov/ConDemo/Aggregate/>

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 5 lbs sample of each type of aggregate fill to testing laboratory or as required by the City.
- C. Submit aggregate base gradation, R-value requirements, and sand equivalent requirements as specified in this section.

- D. Aggregate samples must not be treated with lime, cement, or chemicals before testing for durability index.
- E. Aggregate from untreated reclaimed processed asphalt concrete, Portland cement concrete, lean concrete base or cement-treated base is not considered treated.
- F. If the aggregate gradation test results, sand equivalent test results, or both do not comply with the Contract compliance requirements, remove the aggregate base or request a payment deduction. If the payment deduction request is authorized, \$2.00/cu yd is deducted.
- G. Materials Source: Submit name of aggregate materials suppliers.
- H. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- I. Supplier shall submit certification data that aggregate base meets the requirements per Caltrans Testing Methods.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Materials Resources Certificates:
 - a. Certify source and origin for salvaged and reused products.
 - b. Certify recycled material content for recycled content products.
 - c. Certify source for regional materials and distance from jobsite.

1.6 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.
- B. Perform Work according to City Standards.

PART 2. PRODUCTS

2.1 SUSTAINABILITY CHARACTERISTICS

- A. Materials and Resources Characteristics:
 - 1. Recycled Content Materials: Furnish materials with maximum available recycled content.
 - 2. Regional Materials: Furnish materials extracted, processed, and manufactured within 250 miles of jobsite.

2.2 AGGREGATE MATERIALS

- A. Aggregate must be clean and consist of any combination of the following:
 - 1. Broken Stone
 - 2. Crushed Gravel
 - 3. Natural rough-surfaced gravel
 - 4. Sand
 - 5. Processed reclaimed asphalt concrete, Portland cement concrete, lean concrete base, or cement-treated base.
- B. Quality: Aggregate base furnished for the base material shall be free from vegetable matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm stable base.
- C. Maximum aggregate size shall be 3/4-inch maximum aggregate gradation unless specified otherwise.
- D. Class 2 Aggregate Base: ASTM D2940; graded type. Conform to Section 26 of the Caltrans Standard Specifications.

PART 3. EXECUTION

3.1 EXAMINATION

- A. Verify compacted subgrade is moisture conditioned and ready to support paving and imposed loads.
 - 1. Proof roll subgrade with minimum two perpendicular passes to identify soft spots.
 - 2. Remove soft subgrade and replace with compacted fill unless specified otherwise in the Project Geotechnical Report or as ordered by the Project Manager.
- B. Immediately before spreading aggregate base, the subgrade must comply with the specified compaction and elevation tolerance for the material involved and be free from loose or extraneous materials.
- C. Contractor may use aggregate base to fill areas of the subgrade that are lower than the proposed grade.

3.2 PREPARATION

- A. Correct irregularities in subgrade gradient and elevation by scarifying, moisture conditioning, reshaping, and re-compacting.
- B. Do not place fill on soft, muddy, or frozen surfaces.

3.3 AGGREGATE PLACEMENT

- A. Spread and shape the aggregate base to such thickness that after watering and compacting, the completed aggregate base is within the tolerances specified below in Section 3.5.
- B. Avoid material segregation. Segregated materials shall be re-mixed until uniform.
- C. Aggregate base must be free from pockets of coarse or fine material.
- D. If the aggregate base thickness shown is 0.50 foot or less, spread and compact the aggregate base in one layer. If the thickness shown is more than 0.50 foot, spread and compact the aggregate base in at least 2 approximately equal layers in thickness. The compacted thickness of any one layer must not exceed 0.50 foot.
- E. At locations inaccessible to spreading equipment, spread and compact aggregate base by any means that will attain the specified requirements; by hand compaction if needed.
- F. Apply water to moisture condition the aggregate base as needed for optimum moisture content for compaction.
- G. Compact each aggregate base layer to at least ninety-five (95) percent relative compaction unless otherwise noted elsewhere.
- H. Level and contour surfaces to elevations, profiles, and gradients indicated.
- I. Maintain optimum moisture content of fill materials to attain specified compaction density.
- J. Correct areas of aggregate base that do not comply with the described thickness.

3.4 TOLERANCES

- A. Section 014516 - Quality Control: Tolerances.
- B. Maximum Variation from Flat Surface: 1/4-inch measured with 10-foot straight edge.
- C. Maximum Variation from Thickness: 1/4-inch.
- D. Maximum Variation from Elevation: 1/4-inch.

END OF SECTION

SECTION 321216 – ASPHALT PAVING AND MISCELLANEOUS PAVING ITEMS

PART 1. GENERAL

1.1 DESCRIPTION

- A. Work included: Work covered in this section consists of performing all operations necessary for producing and placing hot mix asphalt (HMA) by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture.
- B. Hot mix asphalt overlay and deep lifts (at dig outs) shall be provided where shown on the plans and as marked in the field.
- C. Section includes:
 - 1. Quality Control Plan.
 - 2. Quality Control Testing.
 - 3. Acceptance Testing.
 - 4. Asphalt Binder and Tack Coat.
 - 5. Aggregate Materials.
 - 6. Hot Mix Asphalt.
 - 7. Utility Cover Adjustments
 - 8. Vehicle Detectors.
- D. Paving shall comply with the current State Standard Specifications and Standard Plans. HMA shall be provided in accordance with the Standard HMA construction process and conform to the latest Caltrans Section 39 of the Standard Specifications and as detailed in this specification.

1.2 RELATED SECTIONS

- A. Section 321723 – Traffic Striping, Pavement Markers, Pavement Markings & Signage

1.3 REFERENCES

- A. State Standard Specification:
 - 1. Section 39 Asphalt Concrete.
 - 2. Section 92 Asphalt Binder.
 - 3. Section 94 Asphaltic Emulsions
 - 4. Section 96 Geosynthetics
- B. American Association of State Highway and Transportation Officials: (AASHTO)
 - 1. AASHTO M17 - Standard Specification for Mineral Filler for Bituminous Paving Mixtures.
 - 2. AASHTO M29 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
 - 3. AASHTO M140 - Standard Specification for Emulsified Asphalt.

4. AASHTO M208 - Standard Specification for Cationic Emulsified Asphalt.
5. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
6. AASHTO M320 - Standard Specification for Performance-Graded Asphalt Binder.
7. AASHTO M324 - Standard Specification for Joint and Crack Sealant s, Hot Applied, for Concrete and Asphalt Pavements.
8. AASHTO MP1a - Standard Specification for Performance-Graded Asphalt Binder.
9. AASHTO T283-14 – Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage.
10. AASHTO T324 (Modified) -Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA).

C. Asphalt Institute:

1. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot- Mix Types.
2. AI MS-19 - Basic Asphalt Emulsion Manual.
3. AI SP-2 - Superpave Mix Design.

1.4 QUALITY CONTROL PLAN

- A. Establish, implement and maintain a Quality Control Plan (QCP) to ensure materials and work comply with the specifications and the corrective actions required to control the quality of work. The QCP shall comply with these specifications and Section 39-2 “Standard” of the Caltrans Standard Specifications.
- B. The Contractor shall submit a Quality Control (QC) plan for HMA.
- C. The QC plan shall describe the organization and procedures for:
 1. Controlling HMA quality characteristics
 2. Taking samples, including sampling locations.
 3. Establishing, implementing, and maintaining QC
 4. Determining when corrective actions are needed.
 5. Implementing corrective actions.
 6. Using methods and materials for backfilling core locations.
- D. The QC plan must address the elements affecting HMA Quality, including
 1. Aggregates
 2. Asphalt binder
 3. Additives
 4. Productions
 5. Paving
- E. For CIP projects, the Contractor shall permit the City’s certified testing laboratory to take samples of the aggregate and asphalt emulsion used in the project at the City’s discretion. Gradation and sand equivalent tests may be run on the

aggregate and residual asphalt tests on the emulsion. City will compare the test results with this Section and notify the Contractor if any test fails to meet specifications.

- F. The Contractor shall furnish all tools and equipment and employ sufficient trained personnel to operate all equipment and perform all handwork efficiently and skillfully.

1.5 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Job Mix Formula (JMF): Except for the Hot Mix Asphalt (HMA) to be used in miscellaneous areas (median island areas not including inside shoulders, island areas, sidewalk, gutters, ditches, over side drains and aprons at end of drainage structures) and dikes, submit the proposed JMF for Type A HMA.
- C. The JMF must be submitted on the Contractor Job Mix Formula Proposal form along with:
 - 1. Mix design documentation on Contractor's Hot Mix Asphalt Design data form dated with 12 months of submittal.
 - 2. Safety Data Sheets (SDS) for the following:
 - a. Asphalt Binder
 - b. Supplemental fine aggregate except fines from dust collectors
 - c. Antistrip additives.
- D. The Contractor's Hot Mix Asphalt Design Data form must show documentation on aggregate quality.
- E. Submit QC test results for Reclaimed Asphalt Pavement (RAP) gradation with the combined aggregate gradation within 2 business days of taking RAP samples during Type A HMA production.
- F. Contractor shall submit a new JMF if there are changes to any of the following:
 - 1. Target asphalt binder percentage greater than ± 0.2 percent.
 - 2. Asphalt binder supplier
 - 3. Combined aggregate gradation
 - 4. Aggregate sources
 - 5. Liquid antistrip producer or dosage
 - 6. Average binder content in a new processed RAP stockpile by more than ± 2.0 percent from the average RAP binder content reported on Contractor Hot Mix Asphalt Design Data form.
 - 7. Average maximum specific gravity in a new processed RAP stockpile by more than ± 0.060 percent from the average maximum specific gravity value reported on Contractor's Hot Mix Asphalt Design Data form.
 - 8. Any material in the JMF.
- G. Submit a current asphalt concrete mix design from two separate sources (primary source and backup source) for asphalt concrete proposed to be used.

- H. Contractor shall provide delivery tickets to the City at the time of delivery of each load of product, including asphalt concrete, tack coat, sealant, and paving reinforcement mat. Each delivery ticket shall include or be accompanied by appropriate batch information produced by the batching plant or factory of origin and information stating the mix or model number, total yield in tons, gallons, or square feet, and time, date, and location of delivery.
- I. Any asphalt concrete rejected by the Project Manager shall be deducted from the total quantity of asphalt concrete tonnage.
- J. Contractor shall submit a reference plan for utility facilities adjustment prior to lowering any utility facilities.
- K. Contractor shall submit a paving plan for longitudinal joints.

1.6 ENGINEER'S ACCEPTANCE

- A. In addition to the Quality Control Plan, the Contractor shall provide an independent quality control to perform independent sampling in accordance with Section 39-1.05 and Section 39-2.03 of the Standard Specifications. City will provide acceptance testing. Sampling shall be performed under California Test 125. Testing shall be performed as specified in this Section.
- B. Start-up evaluation will be performed in accordance with Section 39-1.07 of the Standard Specifications. Sampling and testing shall occur at a minimum for the following:
 - 1. Aggregate
 - 2. Asphalt binder
 - 3. RAP
 - 4. HMA
- C. Quality control sampling shall be performed by the Contractor's Independent Assurance Tester in accordance with the following schedule: and quality acceptance testing shall be performed by the City

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location of Sampling	Maximum Reporting Time Allowance
Aggregate Gradation	CT 202	1 per 750 tons	Plant	24 hours
Reclaimed Asphalt Pavement	LP-9	Daily	RAP System	24 hours
Asphalt Binder Content	CT 379 or CT 382	1 per 750 tons	Loose Mix Behind Paver	24 hours
Percent of Maximum Theoretical Density	CT 308	1 per 750 tons	Loose Mix Behind Paver	24 hours
Maximum Theoretical Density	CT 309	Per CT 375	Loose Mix Behind Paver	24 hours
Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants	CT 226 or CT 370	2 per day during production	Stock-piles or Cold Feed Belts	24 hours
Sand Equivalent (minimum)	CT 217	1 per 750 tons	Plant	24 hours

HMA Moisture Content (maximum)	CT 370	1 per 2,500 tons but not less than 1 per	Loose Mix Behind Paver	24 hours
Stabilometer Value (minimum) No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366	1 per 4,000 tons or 2 per five business days, whichever is	Loose Mix Behind Paver	48 hours
Air Voids Content (%)	CT 367	1 per 4,000 tons or 2 per five business days, whichever is	Loose Mix Behind Paver	48 hours
Percent of crushed particles coarse aggregate (% minimum) One fractured face Two fractured faces Fine aggregate (% minimum) (Passing No. 4 sieve and retained on	CT 205	1 every 6,000 tons	Plant	48 hours
Los Angeles Rattler (% maximum) Loss at 100 revolutions Loss at 500	CT 211	1 every 6,000 tons	Plant	48 hours
Fine aggregate angularity (% minimum)	AASHTO T-304, Method A	1 every 6,000 tons	Plant	48 hours

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location of Sampling	Maximum Reporting Time Allowance
Flat and elongated particle (% maximum at 5:1)	ASTM D 4791	1 every 6,000 tons	Plant	48 hours
Voids in mineral aggregate (% minimum)	LP-2	1 every 6,000 tons	Loose Mix Behind Paver	48 hours
Voids filled with asphalt (%)	LP-3	1 every 6,000 tons	None Calculation	48 hours
Dust proportion	LP-4	1 every 6,000 tons	None Calculation	48 hours
Moisture Sensitivity	CT-371	1 every 5,000 tons	Loose Mix Behind Paver	NA

- D. A minimum of one sample for Rice Specific Gravity shall be taken by Independent Assurance Tester each day at the plant during placement of HMA. The Rice Specific Gravity test shall be in accordance with ASTM D 2041. The results shall be submitted to the City within one working day of receiving them from the testing laboratory. Any change shall be noted and the Contractor shall take necessary measures to correct JMF or resubmit a new JMF for approval prior to continuing work.
- E. In place density tests per CT 375 Nuclear Gage field test shall be performed during HMA operations by Independent Assurance Tester to meet compaction requirements per Standard Specifications. The frequency of testing shall be in accordance with CT 375.
- F. Should any test specified in Paragraph 1.04 of this Section fail to meet density requirements, Independent Assurance Tester shall take density core samples every 500 feet of paved roadway per Section 39-2.03 of Standard Specifications to verify density results.
- G. Tests results outside the specifications shall be subject to reduced payment in accordance with the table of "Reduced Payment Factors for Percent of Maximum Theoretical Density" in Section 39-2.03.

1.7 PRODUCT HANDLING

- A. All products described herein shall be handled in conformance to the applicable provisions of the Caltrans Standard Specifications.

1.8 PROJECT CONDITIONS

- A. Weather Limitations:
 - 1. No HMA shall be placed when weather conditions prevent the proper handling, finishing, or compaction of the mixtures.
 - 2. Do not apply when underlying surface is muddy, frozen or wet.
 - 3. Do not place tack coat when temperature is below 45° F.
 - 4. Do not place hot mix asphalt when air temperature is below 45° F and surface temperature is below 50° F.

PART 2. PRODUCTS

2.1 TACK COAT

- A. Tack Coat, Type SS-1H, conforming to the provisions of Sections 39 and 94 of the Caltrans Standard Specifications shall be used for digouts (pavement repairs) and over asphalt concrete planed surfaces.

2.2 ASPHALT BINDER

- A. Asphalt binder for the Hot mix asphalt (HMA) shall be Grade PG 64-10, conforming to the provisions of Sections 92 of the Caltrans Standard Specifications.
- B. Asphalt dikes, asphalt ditches and miscellaneous areas the grade of the asphalt binder for the Hot mix asphalt (HMA) shall be PG 70-10.

2.3 AGGREGATE

- A. Aggregate shall be clean and free from deleterious substances and shall meet the gradation and quality for 1/2-inch and 3/8-inch HMA Type A in the Caltrans Standard Specifications.
- B. Reclaimed Asphalt Pavement (RAP) aggregate may be substituted for a part of virgin aggregate in a quantity not to exceed fifteen percent (15%) by weight of the aggregate blend.
 - 1. RAP shall conform to Section 39-2.02A (4) (b) (iii) – Reclaimed Asphalt Pavement of the State Standard Specifications.
 - 2. During Type A HMA production, sample RAP twice daily and perform QC testing for:
 - a. Aggregate gradation at least once a day under California Test 384.
 - b. Moisture content at least twice a day.

2.4 HOT MIX ASPHALT

- A. Hot Mix Asphalt shall be HMA Type A and conform to the latest provisions of Section 39 of the Caltrans Standard Specifications.
- B. Asphalt Concrete for the surface course shall be ½" Type A, in accordance with Section 39 of State Standard Specifications as modified in these Technical Provisions and the Special Conditions.
- C. HMA batch plant shall be Department-qualified under the Department's Materials Plant Quality Program of the Caltrans Standard Specifications.

PART 3. EXECUTION

3.1 GENERAL

- A. Approximate areas for digouts (pavement repairs) will be marked out in the field by City prior to the preconstruction conference. Areas marked out shall be cut along the perimeter, removed to depths indicated on the plans, cleaned, prepared with tack coat, filled with hot mix asphalt and compacted in accordance with these specifications.
- B. Hot mix asphalt overlay shall be placed to the limits shown on the Plans to the limits of conform and edge grinds.
- C. Hot mix asphalt shall be proportioned, mixed, placed, spread and compacted in layers in conformance with the Standard HMA Construction Process described in Section 39 of the Caltrans Standard Specifications.

3.2 PROTECTION OF EXISTING STREET SURFACE

- A. During the entire construction period, the Contractor shall take care to protect existing pavement and concrete surfaces. Surfaces scarred by cleanup or equipment shall be repaired in a manner satisfactory to the Engineer. Any and all damage caused by the Contractor's operations to existing roads and streets shall be repaired by the Contractor to at least the original condition and to the satisfaction of the Engineer, at no additional cost to the City.
- B. If pavement is damaged (excessive loading, grouser marking, scarring/scraping of pavement, etc.) outside the limits of the work, a full lane width grinding and overlay will be required as directed by the Engineer at no additional compensation to the Contractor.

3.3 PAVING REMOVAL (DIGOUTS)

- A. Saw cutting, grinding, and asphalt concrete removal shall be required for digouts and surface preparation on paved roads.
- B. Subgrade in digout areas shall be compacted in place to a firm and unyielding condition prior to placement of HMA.
- C. Clean and dry the dig out area and planed surfaces prior to commencing with

work.

3.4 TACK COAT

- A. Ensure the digout area is clean and dry. All material accumulations which would interfere with the adhesion of the tack coat or with the placing and performance of the hot mix asphalt shall be removed, including dust, loose aggregate, soil, leaves, and pieces or lumps of other foreign material deposited on the surface.
- B. A tack coat shall be applied to existing pavement including planed surfaces, between HMA layers, and to vertical surfaces of curbs, gutters and construction joints at the minimum residual rates specified in Section 39-1.09C "Tack Coat" of the Caltrans Standard Specifications.
- C. Before placing hot mix asphalt, a tack coat shall be furnished and applied uniformly to contact surfaces of all cold pavement joints, curbs, gutters, and all existing pavement to be surfaced in conformance with Section 39 of the Caltrans Standard Specifications.
- D. Asphalt binder tack coat shall be placed under reinforcing mat to the application rates in compliance with the manufacturer's recommendations.
- E. Asphaltic emulsion tack coat shall be placed over planed surfaces to the application rates in the Caltrans Standard Specifications.
- F. Tack coat shall be applied to any course in advance of spreading the next course unless the surface temperature is at least 140 °F.
- G. Hot mix asphalt shall not be placed until tack coat has cured. Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.
- H. Close areas receiving tack coat to traffic. Do not track tack coat onto pavement surfaces beyond the job site.

3.5 TRANSPORTING HOT MIX ASPHALT

- A. From mixing site in trucks having tight, clean compartments.
- B. Coat hauling compartments with lime-water mixture to prevent sticking.
- C. Elevate and drain compartment of excess solution before loading mix.
- D. Provide covers over asphalt concrete mixture to protect from weather and to prevent loss of heat.
- E. During periods of cold weather or for long distance deliveries, pre-insulation around entire truck bed surfaces.
- F. Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.

3.6 HOT MIX ASPHALT

- A. HMA surfacing shall conform to the provisions of Section 39 of the Standard Specifications. Placing HMA shall be done under suitable weather conditions for such operations. Rain, snow or other inclement weather will be cause for discontinuing paving Work. The Engineer shall have the authority for determining whether weather conditions are sufficient cause to postpone work.

3.7 ASPHALT INLAY/OVERLAY

- A. The quality control measures for the asphalt concrete shall be as outlined in Section 39 "Asphalt Concrete" of the State Standard Specifications.
- B. Certificates of Compliance, in accordance with Section 6-2.03C, "Certificates of Compliance" of the State Standard Specifications, shall be required from the supplier of the asphalt concrete and submitted to the Engineer not less than 10 working days prior to any scheduled asphalt concrete paving.
- C. The Contractor shall schedule his paving operations such that at the end of each working day, the distance between the ends of the layers of asphalt concrete on adjacent lanes shall not be greater than 10 feet nor less than 5 feet. Additional asphalt concrete shall be placed along the transverse edge at the end of each lane and along the exposed longitudinal edges between adjacent lanes, hand raked, and compacted to form temporary conforms. Kraft paper, or other approved bond breaker, may be placed under the conform tapers to facilitate the removal of the taper when paving operations resume.
- D. Half-width surfacing operations shall be conducted in such manner that, at the end of each day's work, the distance between the ends of adjacent surfaced lanes shall not be greater than can be completed in the following day of normal surfacing operations.
- E. All paving joints shall be on lane lines only.
- F. Prior to placing the surface course, the finished surface of the previous layer shall not vary at any point more than 0.05-foot above or below the grade established by the Engineer.
- G. All trimming of the surface shall be completed while the temperature of the mix is above 200 °F.
- H. The final lift of asphalt concrete (the top lift) shall be placed in one continuous operation over the entire street.
- I. The Contractor shall not perform paving operations when the weather is rainy or foggy. It shall be the Contractor's responsibility, based on weather predictions, to schedule his paving operations to avoid paving in the rain or fog. If the day's operations are canceled because of predicted rain or fog, a nonworking day will be allowed regardless of actual working conditions.
- J. Asphalt concrete shall not be placed on any surface which contains ponded

water or excessive moisture in the opinion of the City Engineer.

- K. If paving operations are in progress and rain or fog forces a shutdown, loaded trucks shall return to the plant and no compensation will be allowed therefor.
- L. The Contractor shall furnish and use canvas tarpaulins to cover all loads of asphalt concrete from the time that the mixture is loaded until it is discharged from the delivery vehicle, unless otherwise directed in writing by the Engineer.
- M. Immediately before Asphalt Concrete is placed, a tack coat shall be applied to all horizontal and vertical surfaces as specified in Section 39-1.02B "Tack Coat" of the State Standard Specifications.
- N. No traffic shall be allowed on the asphalt tack coat with the exception of vehicles unloading asphalt concrete. All vehicles involved with the Contractor's operations shall turn around within the road right-of-way. Driveways and other private property shall not be used without prior written consent of the involved property owner, a dated copy of which shall be delivered to the Engineer prior to the use thereof.
- O. The area to which the tack coat has been applied shall be closed to public traffic. Care shall be taken to avoid tracking the asphaltic emulsion material onto existing pavement surfaces beyond the limits of construction.
- P. All asphalt concrete spillage and/or tracking of tack coat (asphaltic emulsion) or other materials on public streets, driveways and gutters shall be removed or cleared within 48 hours of the AC pavement placement. If existing striping is marked by emulsion or other materials, it shall be repainted/restored. Alternatively, existing striping may be protected by a method approved by the Engineer.
- Q. Conform cuts between existing pavement and newly constructed pavement shall be made by cutting the existing pavement to a neat, smooth line at the limit lines and constructing a vertical-face butt joint.
- R. At cross streets where distinct limit lines exist due to previous treatments, the new conform limit line shall overlap the existing limit line a minimum of 6 inches.
- S. Batch data and load slips shall be presented to the Engineer as asphalt is delivered to the project site. Failure to do so may result in non-payment for questionable quantities or rejection of the load.

3.8 BASE FAILURE REPAIR

- A. Base failure repair of existing asphalt concrete shall be performed in accordance with Section 39-3.04, "Cold Planing Asphalt Concrete," of the 2018 Caltrans Specifications and these Special Provisions.
- B. The locations for the AC base repairs will be identified, marked and quantified by the Engineer after AC cold planning is completed. The Contractor shall notify the Engineer 48 hours in advance of the cold planning operation. The Contractor

shall allow the Engineer 24 hours to complete the identification of the AC base repairs. The Asphalt Concrete Pavement Repair that will be paid for shall be the actual square feet of repair that was marked-out by the by the Engineer in the field prior to asphalt concrete pavement repair construction.

- C. Existing asphalt concrete and base material shall be removed to a minimum depth of 6" below the grade of the existing surfacing at locations shown on the drawings. The resulting depression shall be filled with a deep lift of asphalt concrete in conformance with pertinent Technical Provisions.
- D. The base failure conform limits shall be saw cut or ground in neat, straight lines. Conform corners shall be square and any conform edges that are broken after saw cutting or grinding shall be re-cut at no additional charge.
- E. Prior to filling the areas with asphalt concrete, the subgrade shall be compacted to 95 percent relative compaction in accordance with Section 19-5.03B of the Standard Specifications of the State of California and to the satisfaction of the Engineer.
- F. If, in the opinion of the Engineer, excessively wet areas still exist at the subgrade that cannot obtain a relative compaction of 95 percent then all undesirable material then encountered will be removed and disposed of as directed by the Engineer. Quantities of removed, unsuitable material (including the material used as replacement) shall be paid for as extra work as provided for in these Specifications.
- G. The existing asphalt concrete vertical (and horizontal, if any) surfaces upon which new asphalt concrete will be placed shall be treated with asphaltic emulsion tack coat.
- H. Asphalt Concrete shall be placed in 2 lifts unless otherwise shown on the plans or as directed by the Engineer. Asphalt concrete shall be compacted to a relative compaction of 95 percent. Base failures shall be completed prior to any inlay/overlay activities on any given street.
- I. All base failure areas excavated in any one day shall be backfilled that same day. No excavated areas will be permitted to remain open overnight.
- J. Asphalt concrete shall be placed only when the atmospheric temperature is a minimum of 50 degrees Fahrenheit and rising.
- K. The locations for base failure repair shall be as shown on the drawings and/or will be marked in the field by the Engineer.

3.9 SPREADING AND COMPACTING

- A. Spreading and compacting shall be performed in accordance with Section 39-1.10 and Section 39-1.11 of the Standard Specifications.
- B. HMA shall be transferred from the trucks into the hopper of the paving machine by means of a shoulder machine equipped with a conveyor belt. Any equipment

used to transfer asphalt concrete to the paving machine shall not exceed the load capacity of any surface it is driven over and, therefore, shall not produce rutting or pumping of the existing roadway surface or newly placed HMA at any time. No trucks or other rubber-tired construction equipment are allowed on the subgrade at any time except when proof rolling in the presence of the Engineer. No trucks or other rubber-tired construction equipment are allowed on newly placed HMA until the day after the HMA is placed.

- C. Longitudinal joints in the top layer must match specified lane edges shown on the striping plans. Longitudinal joints in lower HMA layers shall be offset at least 0.5 feet from each side of the specified lane edges.
- D. Finish rolling shall be completed before pavement surface temperature is below 150 degrees F.
- E. Traffic shall not be allowed on HMA until mid-depth temperature is below 160 degrees F and the pavement surface temperature is below 140 degrees F.

3.10 ASPHALT CONCRETE DIKES, MISCELLANEOUS AREAS AND DITCHES

- A. Asphalt concrete for dikes shall be Type A, 3/8" maximum size aggregate.
- B. Prepare the areas to receive HMA for miscellaneous areas and dikes, including excavation, placing tack coat, and backfill as needed.
- C. Spread the HMA in miscellaneous areas in 1 layer and compact to the specified lines and grades.
- D. The finished surface must be:
 - 1. Textured uniformly
 - 2. Compacted firmly
 - 3. Without depressions, humps, and irregularities.

3.11 MANHOLE, VALVE BOX, CLEANOUT AND MONUMENT ADJUSTMENT

- A. All existing water valves, sewer clean-outs, monuments, manholes and public utility facilities shall be adjusted to finished grade by the Contractor within seven (7) calendar days after paving over each structure per Section 3.5 of the City Design Guidelines, Section 15-2.10B "Adjust Frames, Covers, Grates, and Manholes" of the State Standard Specifications, these Technical Provisions and as directed by the Engineer.
- B. Raise public utility facilities in coordination with the requirements of and in coordination with the various public utilities and as indicated on the Plans.
- C. Monument boxes, water value boxes and detector hand-hole boxes shall be adjusted to grade in conformance with the provisions in Section 15-2.05, "Reconstruction," of the Standard Specifications and in accordance with the City Design Guidelines.

- D. Gate valves shall be adjusted per City specifications, sewer cleanouts shall be adjusted per City Detail 17, and city monuments shall be adjusted per City Detail 30.
- E. Adjusting existing manholes to grade shall include adjusting cone sections as necessary. Adjusting existing valve boxes to grade shall include extension of valve stems.
- F. Prior to any work on the sewer manholes, the Contractor shall install false bottoms in the manholes impacted by the work. Upon completion of the work the false bottoms shall be removed.
- G. Except as approved by the Engineer, Contractor shall protect utility iron to be raised to grade while concrete collars are curing and keep traffic off of raised facilities for 48 hours or until concrete has reached a minimum strength of 1,000 psi. Any damage to utility iron, concrete collars or new HMA pavement shall be repaired or replaced at the Contractor's expense and to the satisfaction of the Engineer.
- H. Utility manhole frame, chimney and covers shall be removed and replaced per the Contract Documents.
- I. Coordinate the iron raising and patch paving so that no partially completed iron raising remains over the weekend.
- J. Replacement and/or adjustment of existing facilities to grade at all new curb ramps identified on the plans unless otherwise noted, shall be included in the contract price paid for "Remove & Replace PCC Curb Ramp", and no additional compensation will be allowed therefor.
- K. Replacement and/or adjustment of existing facilities to grade at all new sidewalk identified on the plans, shall be included in the contract price paid for "Remove & Replace PCC Sidewalk", and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 321313 – CONCRETE IMPROVEMENTS

PART 1. GENERAL

1.1 WORK INCLUDED

- A. Work shall consist of removing existing sidewalk, curb, gutter, access ramps and base material and installing new concrete sidewalk, curb and gutter, curb ramps, island passageway and aggregate base at locations indicated on the plans or as directed by the Engineer. New sidewalk and valley gutter concrete shall comply with City of San Carlos Standard Detail No. 6. All new curb ramps shall have detectable warning surfaces installed as part of the ramp in accordance with the plans and Caltrans Standard Details.

1.2 SUBMITTALS

- A. The Contractor shall furnish a concrete mix design to the Engineer at least ten (10) working days prior to the start of the work.

PART 2. MATERIALS

2.1 CONCRETE

- A. Concrete drainage structures shall comply with 51-7, "Minor Structures", of the State Standard Specifications. Concrete shall meet the following requirements:
Compressive Strength: 3000 psi @ 28 days
Maximum Slump: 4 inches
Lamp Black: 1 lb. / cy
- B. Concrete used in curbs and sidewalks shall comply with Section 73 of the State Standard Specifications and City Standard Detail.

2.2 REINFORCEMENT

- A. Reinforcement for concrete structures shall conform to City Standard Detail and Sections 52-1.01 through 52-1.04 inclusive of the Caltrans Standard Specifications except that Butt Welded Splices shall not be permitted.

2.3 DETECTABLE WARNING SURFACE

- A. Curb ramp detectable warning surface shall include of raised truncated domes constructed or installed on curb ramps in conformance with the details shown on the plans and these special provisions. Detectable Warning Surface (DWS) shall be brick red or clay red in color and a set-in-concrete style of truncated domes. The detectable warning surface shall be prefabricated, cast-in-place. No surface-applied matting systems (i.e. glued and screwed) style of DWS shall be allowed. Contractor shall neatly trim prefabricated dome panels to fit and conform to curb radius.
- B. Prefabricated detectable warning surface shall be in conformance with the requirements established by the Department of General Services, Division of

State Architect and be installed in conformance with the manufacturer's recommendations.

- C. The finished surfaces of the detectable warning surface shall be free from blemishes.
- D. Detectable Warning tiles shall incorporate an in-line pattern of truncated domes measuring nominal 0.2" height, 0.90" base diameter, and 0.45" top diameter, spaced center-to-center 2.35" as measured side by side. For wheelchair safety the field area shall consist of a high density, pyramid micro texture of raised points 0.05" high.
- E. Compressive Strength of the tiles shall be no less than 25,000 PSI when tested by ASTM D695.
- F. Tensile Strength of the tiles shall be no less than 12,500 PSI when measured by ASTM D 638
- G. Flexural Strength of the tiles shall be no less than 25,000 PSI when tested by ASTM D 790.
- H. Slip resistance of the Tile when tested by ASTM C 1028-96: The combined wet and dry static coefficients shall be no less than 0.80 on top of domes and field area.
- I. The manufacturer shall provide a written 5-year warranty for prefabricated detectable warning surfaces, guaranteeing replacement when there is defect in the dome shape, color fastness, sound-on-cane acoustic quality, resilience, or attachment. The warranty period shall begin upon acceptance of the contract.

2.4 HOT MIX ASPHALT CONFORM

- A. The hot mix asphalt conform material adjacent to concrete improvements shall comply with the Section 321216 Paving Systems in these specifications.

PART 3. EXECUTION

3.1 REMOVAL OF EXISTING CONCRETE

- A. Existing sidewalk, curb, gutter and base material shall be removal as necessary to construct the required improvements. Existing concrete shall be sawcut along existing score lines to full depth prior to removal. Existing concrete to be removed varies in thickness, no additional compensation shall be given for varying concrete thickness. Any concrete broken due to the Contractor's failure to comply with these requirements shall be removed and replaced at the Contractor's expense. Asphalt concrete shall be saw cut at least 12 inches from the lip of gutter in a neat straight line to accommodate form boards.
- B. The Contractor shall furnish and install a 6"-thick deep-lift asphalt concrete (Patch Pave) adjacent to concrete curb and gutter, valley gutter. The cost to install the 6"-thick deep-lift asphalt concrete (Patch Pave) shall be considered in the prices

paid for under "AC Conform @ Curb Ramp", and no additional compensation will be allowed therefor.

3.2 SUBGRADE AND BASE PREPARATION

- A. Subgrade shall be compacted to 90% relative compaction prior to placing base material. Base material shall be placed to the depths required by the plans and details and compacted to 95% relative compaction after mixing the material with water to achieve the optimum moisture content.

3.3 FORMS

- A. 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. Forms shall not be installed until after base material has been placed and compacted.

3.4 PROTECTION OF EXISTING FACILITIES

- A. 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.
- B. 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.
- C. Existing curb outlet drain pipes (under sidewalk drains) shall be protected, rerouted, or replaced and incorporated into the new curb & gutter and curb ramps as applicable. The cost to protect, reroute or replace the curb outlet drain pipes shall be included in the price paid for the various contract items of work involved and no additional compensation will be allowed therefor.

3.5 PLACING AND FINISHING CONCRETE

- A. No concrete shall be placed until the forms have been inspected and approved.
- B. Concrete shall be deposited on a moist grade in such a manner as to require as little re- handling as possible. In general, adding water to the surface of the concrete to assist in finishing operations shall not be permitted.
- C. Control joints and expansion joints shall be installed at locations noted on the plans, to match existing, as approved on the score line and expansion joint submittal or as directed by the Engineer. 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.

- D. Unless otherwise directed by the Engineer, a medium broom finish shall be applied to match existing facilities in texture and appearance. An approved white or clear liquid curing compound shall be applied to the newly placed concrete after finishing operations have been completed. Full compensation for applying curing compound to all exposed faces of the concrete surface shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.
- E. All new concrete sidewalk and curb & gutter shall be doweled and epoxied into the existing concrete sidewalk and curb & gutter using #4 rebar at 20" O.C. (minimum of 2). A minimum of 6" Class 2 aggregate base shall be placed and compacted in conformance with these Technical Provisions. Full compensation for furnishing and installing dowels, epoxy and Class 2 aggregate required for the concrete construction shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.
- F. The Contractor shall round-off all grade breaks on the curb & gutter with an algebraic difference of 3% and greater. The minimum round-off distance shall be five (5) feet.
- G. Full compensation to procure, deliver, place, spread, and compact imported topsoil material shall be considered as included in the contract prices for the various contract items of work involved, and no additional compensation shall be allowed thereof.

3.6 CONCRETE PROTECTION

- A. The Contractor shall 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.

3.7 CONCRETE CURB RAMPS

- A. The concrete curb ramps shall be constructed in conformance with Standard Plans A88A and A88B of the State Standard Plans unless otherwise shown in plans due to certain constraints from existing conditions (e.g. existing steeper longitudinal road slope, existing driveways, existing residential paths, existing walls, other obstructions, etc). Concrete curb ramps will be measured from the back of the curb and gutter to the grade break at the top of the ramp, the landing and the retaining curb (where applicable) as shown on the State Standard Plans. Areas outside of the defined curb ramp area shall be measured and paid as sidewalk. The curb and gutter shall be measured and paid as curb and gutter.
- B. All existing utility boxes, valve covers, street light base, sign posts and clean outs located in the sidewalk and curb ramps shall be adjusted to grade and shall be included in the price paid for the various contract items of work unless otherwise noted involved and no additional compensation will be allowed therefor.

- C. All existing traffic signal pole bases in the sidewalk and curb ramps identified in plans to be tied in to new grade with concrete work or repair shall be included in the price paid for the various contract items of work involved and no additional compensation will be allowed therefor.
- D. All landscape restoration including the restoration of any landscaping, irrigation, hardscape, brick work or walls shall be included in the price paid for the various contract items of work involved and no additional compensation will be allowed therefor.
- E. Topsoil shall be used as backfill behind the new sidewalk and curb ramps to fill the gap left from the form board and other work. Topsoil shall be procured and imported from a local supplier.

3.8 DETECTABLE WARNING SURFACE (DWS)

- A. All curb ramps shall have a detectable warning surface (DWS) installed in conformance with City Standards and the latest Caltrans Standard Details A88A and A88B. The color of the DWS shall be brick red or clay red.

3.9 HOT MIX ASPHALT CONFORM AT ACCESS RAMP

- A. Grinding and placement of HMA for the conform area in front of the concrete access ramps shall comply with the Section 321216 Paving Systems of these specifications.

3.10 CARE AND REPAIR OF CONCRETE

- A. Repair shall be per ACI 301 with the following requirements:
 - a. Patching mortar shall be Sikatop 123 Plus or approved equal.
 - b. Use Sikadur 32 HiMod bonding agent or approved equal.
 - c. Honey and defects deeper than 1.5 inches shall require approval by Engineer prior to commencing repair work.
 - d. Cracks wider than 0.02 inches for hydraulic structures shall be repaired prior to leak testing.
 - e. Cracks wider than 0.04 inches shall be repaired.

END OF SECTION

SECTION 321723 – TRAFFIC STRIPING, PAVEMENT MARKERS, PAVEMENT MARKINGS AND SIGNAGE

PART 1. GENERAL

1.1 SCOPE OF WORK

- A. This work consists of removal and replacement of traffic stripes, legends, and raised pavement markers on various roadway sections to their original configuration or as shown on the plans or directed by the engineer in the field. Any roads, driveways, walls, and curbs which are damaged during construction, shall be repaired to their original or better condition.
- B. Any existing traffic signs that are removed, shall be salvaged to the City Public Works Yard.
- C. Traffic signs, stripes, legends, and raised pavement markers shall conform to the latest edition of the California Manual on Uniform Traffic Control Devices, California Department of Transportation, Traffic Manual, Maintenance Manual, and Caltrans Standard Specifications as modified by these Special Provisions.
- D. The work includes striping, markings, markers, and signage on the roadway sections as shown on the project plans, located in San Carlos, California.
- E. Where traffic conditions are to remain, roadways shall be striped and marked to match existing except as noted in the plans.

1.2 REFERENCES

- A. California Department of Transportation (Caltrans):
 - 1. Maintenance Manual.
 - 2. Current Standard Specifications
 - a. Section 81 – Miscellaneous Traffic Control Devices
 - b. Section 84 – Markings
 - c. Section 95 – Epoxy
 - 3. California Manual on Uniform Traffic Control Devices

1.3 SUBMITTALS

- A. The Contractor shall submit a schedule for the performance of this work. The schedule shall include approximate dates of work on each roadway section.
- B. The Contractor shall submit a detailed traffic control plan for the performance of this work.
- C. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
- D. Product Data: Provide manufacturers specification, Safety Data Sheet and literature for materials furnished.

1.4 PROJECT CONDITIONS

- A. Do not apply pavement marking paint within 8 hours of fog or rain or when below 40 Degrees F or when pavement is wet.
- B. Contractor shall guarantee that all traffic lane pavement markers be in place and adhered to the pavement for a period of not less than 90 days from the date of acceptance of the work by the Owner.
- C. All new traffic striping and pavement markings shall be thermoplastic, unless otherwise shown on the plans.
- D. No pavement markings shall be applied to any roadway surface until new hot mix asphalt surface has cured for a minimum of seven (7) days when hot melt bituminous adhesive is used, and not less than 14 days when epoxy adhesive is used.

PART 2. PRODUCTS

2.1 GENERAL

- A. Unless otherwise specified in the Special Provisions or contract plans, all pavement striping and markings (except temporary) shall be thermoplastic.

2.2 THERMOPLASTIC MATERIAL

- A. Thermoplastic material and glass beads shall conform to the requirements of Caltrans Standard Specifications Section 84-2.
- B. Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification PTH-02ALKYD.
- C. Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of $250 \text{ mcd m}^{-2} \text{ lx}^{-1}$. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of $150 \text{ mcd m}^{-2} \text{ lx}^{-1}$.
- D. Thermoplastic material shall be white, unless otherwise shown on the plans.

2.3 PREFORMED THERMOPLASTIC BIKE LANE GREEN PAVEMENT MARKINGS

- A. USE: A durable, high skid and slip resistant pavement marking material suitable for use as, bike lane, roadway, intersection, airport, commercial or private pavement delineation and markings. For use on asphalt or portland cement concrete pavement surfaces.
 - A1. The material shall be a resilient light green color thermoplastic product containing a minimum thirty percent (30%) intermix of anti-skid/anti-slip

elements and where the top surface contains anti-skid/anti-slip elements. These anti-skid/anti-slip elements must have a minimum hardness of 8 (Mohs scale).

A2. The material shall be resistant to the detrimental effects of motor fuels, antifreeze, lubricants, hydraulic fluids etc.

A3. The material shall be capable of being affixed to bituminous and/or Portland cement concrete pavements by the use of the normal heat of a propane torch, infrared heater, or a blue radiant heater.

A4. The material shall be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures (i.e. without preheating the application surface to a specific temperature). The markings shall have resealing characteristics, such that it is capable of fusing with itself and previously applied thermoplastic.

A5. The material shall not have minimum ambient and road temperature requirements for normal application, storage, or handling. When manufacturer's standard application procedures require the use of a 2-component sealer, the material shall be capable of being applied with a compatible 2-component sealer recommended by the manufacturer, at minimum ambient and surface temperatures of 45°F without any special storage, preheating or treatment of the material before application.

A6. The material shall contain heating indicators evenly distributed on the surface that shall act as visual cues during both the application process and post-application.

B. **MANUFACTURING CONTROL AND ISO CERTIFICATION:** The manufacturer must be ISO 9001:2008 certified for design, development and manufacturing and provide proof of current certification. The scope of the certification shall include the design, development, and manufacture of preformed thermoplastic reflective highway markings.

C. **MATERIAL:** Must be composed of an ester modified rosin resistant to degradation by motor fuels, antifreeze, lubricants, etc. in conjunction with aggregates, pigments, binders, abrasives, and anti-skid/anti-slip elements (uniformly distributed throughout the material) which have been factory produced as a finished product, and meets the requirements of the current edition of the Manual on Uniform Traffic Control Devices for Streets and Highways. The thermoplastic material conforms to AASHTO designation M249-79 (98), with the exception of the relevant differences due to the material being supplied in a preformed state.

C1. **Pigment: 3.2.2. Light Green:** The material shall be manufactured with appropriate pigment to ensure that the resulting colors complies with the Light Green color as specified in the FHWA Memorandum dated April 15th, 2011: Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14).

Daytime chromaticity coordinates for the color used for green colored pavement shall be as follows:

1		2		3		4	
X	Y	X	Y	X	Y	X	Y
0.230	0.754	0.266	0.500	0.367	0.500	0.444	0.555

Nighttime chromaticity coordinates for the color used for green colored pavement shall be as follows:

1		2		3		4	
X	Y	X	Y	X	Y	X	Y
0.230	0.754	0.336	0.540	0.450	0.500	0.479	0.520

- C2. The pigments shall contain no lead chromate nor heavy metals or any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.
- C3. Heating indicators: The top surface of the material shall have regularly spaced indents. The closing of these indents during application, shall act as a visual cue that the material has reached a molten state allowing for satisfactory adhesion and proper bead embedment, and as a post-application visual cue that the application procedures have been followed.
- C4. Skid Resistance: The surface of the preformed thermoplastic marking materials shall contain factory applied elements with a minimum hardness of 8 (Mohs scale). Upon application, the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM: E 303.
- C5. Slip Resistance: The surface of the preformed thermoplastic marking materials shall contain factory applied anti-skid elements with a minimum hardness of 8 (Mohs scale). Upon application, the material shall provide a minimum static coefficient of friction of 0.6 when tested according to ASTM: C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM: D 2047.
- C6. Thickness: The material must be supplied at a minimum thickness of 90 mils (2.29 mm).
- C7. Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

D. APPLICATION:

- D1. Asphalt: The material shall be capable of being applied using the propane torch method recommended by the manufacturer, without minimum requirements for ambient and road temperatures down to 45°F, and without any preheating of the pavement to a specified temperature. The material shall be capable of being applied without the use of a thermometer. The pavement

shall be clean, dry and free of debris. Supplier must enclose application instructions with each box/package.

D2. Portland Concrete: The same application procedure shall be used as described under Section 4.1, however, a compatible primer sealer, recommended by the manufacturer, shall be applied to the surface prior to the application of material to ensure proper adhesion.

- E. PACKAGING: The preformed thermoplastic markings shall be placed in protective plastic film with cardboard stiffeners where necessary to prevent damage in transit. Linear material must be cut to a maximum of 3' long pieces. Legends and symbols must also be supplied in flat pieces. The cartons in which packed shall be non-returnable and shall not exceed 40" in length and 25" in width, and be labeled for ease of identification. The weight of the individual carton must not exceed fifty (50) pounds. A protective film around the box must be applied in order to protect the material from rain or premature aging.
- F. TECHNICAL SERVICES: The successful bidder shall provide technical services as required.
- G. PERFORMANCE: The preformed thermoplastic markings shall meet state specifications and be approved for use by the appropriate state agency.
- H. A sample of the green bike lane pavement marking material that shows the color when dry (not a color chip) must be provided to the City for review and written approval at least seven (7) calendar days prior to ordering materials or installing any green markings.

2.4 GLASS BEADS

- A. Glass beads to be applied to surface of the paint and thermoplastic shall conform to the requirements of State Specification 8010-11E-22 (Type II).

2.5 PAVEMENT MARKERS AND ADHESIVES

- A. Pavement markers shall conform to Section 81-3, "Pavement Markers," of the Caltrans Standard Specifications, as specified herein, and in the Special Provisions.
- B. Fire Hydrant markers shall be two-way, reflective blue markers.
- C. Adhesive for pavement markers shall be Rapid Set Type epoxy conforming to Section 95-2.04 of the Caltrans Standard Specifications or hot melt bituminous adhesive conforming to Section 81-3 of the Caltrans Standard Specifications.

2.6 TEMPORARY PAVEMENT DELINEATION

- A. Temporary Pavement Delineation shall conform to Section 12-6, "Temporary Pavement Delineation," and Section 84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specifications.

PART 3. EXECUTION

3.1 LAYOUT

- A. The Contractor shall furnish the necessary control points for all striping, painting and markings and shall be responsible for the completeness and accuracy thereof to the satisfaction of the Engineer.
- B. The Contractor shall perform all layout, alignment, and spotting for traffic stripes and markings. Traffic striping shall match the striping prior to the treatment except as shown on the plans or directed by the engineer. When indicated on the plans, striping and marking shall not vary by more than 2 inches in 50 feet from the alignment shown on the plans. Where markings will match existing markings, striping and marking shall not vary by more than 2 inches in 50 feet from the existing markings. The dimensional details of the stripes and markings shall conform to the provisions set forth in the Traffic Manual and Maintenance Manual available for Caltrans.
- C. Cat tracks shall consist of spots of paint not more than 3 inches in width and not more than 5 feet apart along the alignment of the stripe. Paint for the cat tracks shall be the same as that for the intended stripe. Paint for the dribble lines shall be neutral color obtained by mixing approximately two parts white paint with one-part black paint.
- D. Existing stripes and markings shall be removed prior to painting new ones, but in no case shall any section of street be left without the proper striping for more than 24 hours, or over weekends or holidays.
- E. NO STRIPING SHALL BE PAINTED UNTIL THE LAYOUT AND SPOTTING HAVE BEEN SPECIFICALLY APPROVED BY THE ENGINEER. Allow 3 working days for approval.

3.2 TRAFFIC PAINT AND GLASS BEADS

- A. Traffic markings shall be placed in conformance with the provisions in Section 84, "Pavement Markings," of the Standard Specifications, per Volume 1, Section 2-A through 2-D, and 2-G of the City Traffic Design Standards, and these special provisions.
- B. All lines stop bars and crosswalks to be painted on street surfaces shall be thermoplastic material Pavement markings of test symbols and arrows shall be formed per Caltrans Standards and shall be thermoplastic material.
- C. Thermoplastic traffic stripes (traffic lines) and pavement markings shall be applied in conformance with the provisions in Section 84, "Markings" of the Caltrans Standard Specifications and these special provisions.
- D. Thermoplastic material for traffic stripes shall be applied at a minimum rate of 0.20-lb/ft. The minimum application rate is based on a solid stripe of four (4) inches in width.

- E. All new surfaces shall have the traffic paint applied in two applications in accordance with Section 84-3 of the Caltrans Standard Specifications. The first or priming coat shall be in light applications without glass beads to seal the pavement. The first coat shall be dry before application of the second coat.
- F. All striping and marking shall be laid out by the Contractor and field reviewed by the City prior to final placement of the Thermoplastic material. Failure to obtain this field review shall be basis for rejection of the work by the City. Any work rejected shall be completely removed, the surface of the pavement restored to the satisfaction of the City, and new striping and marking placed at the Contractor's expense.
- G. Restriping except where indicated on the drawings, shall coincide with the original painting and shall be applied in one application in accordance with Section 84-3 of the Caltrans Standard Specifications.
- H. Striping for 24" bars, 12" stop bars, and crosswalk lines shall coincide with the original painting except where indicated otherwise on the plans and shall be installed using Thermoplastic material. Stop bars shall be installed behind the pedestrian path of travel.
- I. The pavement markings of the legend (text) and symbols (arrows) shall be furnished and installed, and shall coincide with the original painting except where indicated otherwise on the plans and shall be installed using Thermoplastic material.
- J. Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.
- K. All surfaces to be painted shall be clean and dry prior to painting. Ample time shall be allowed between placement of the asphalt pavement and the initial painting application. There shall be a minimum drying time between paint applications of approximately twenty (20) minutes.
- L. Glass beads shall be placed on all traffic stripes (except black stripes) and pavement markings except for the first or priming coat on new asphalt surfaces. All glass beads shall be applied directly to the wet traffic paint with a method that provides uniform distribution.
- M. Striping shall not be applied at temperatures below 50° F or if pavement surfaces are wet.
- N. Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.
- O. All painted pavement markings shall be clean and sharp as to dimensions. Ragged ends of segment or foginess along the sides shall not be permitted.
- P. The alignment of all striping shall be accurately laid out. Lines which have a wavy appearance shall be removed and replaced by the Contractor at its expense.

3.3 THERMOPLASTIC MATERIAL AND GLASS BEADS

- A. Thermoplastic material and glass beads shall be applied in accordance with Caltrans Standard Specifications Section 84-2.04. Minimum application thickness shall be 0.1- inch for traffic stripes and 0.15-inch for pavement markings.

3.4 REMOVAL OF STRIPING, MARKERS AND MARKINGS

- A. All stripes and pavement markings not in conformance with the proposed striping plan shall be removed by grinding or sandblasting. Black paint will not be allowed unless specifically indicated on the drawings. All thermoplastic material and raised pavement markers shall be removed prior to slurry seal operations.
- B. All striping to be removed as shown on the Plans shall be covered under various contract items of work, and no additional compensation will be allowed therefor.

3.5 PAINTED CURBS

- A. All The painted curbs (by color) shall comply with Section 84-3 "Painted Traffic Stripes and Pavement Markings" of the State Standard Specifications. The painted curbs (by color) shall have "SC ★ PD" stenciled in white where shown on the plans.
- B. Payment for replacement of painted address number at curb removed due to improvements shall be included in the price paid for other items and no separate payment shall be made therefor.

3.6 PAVEMENT MARKERS

- A. Pavement markers shall be placed in conformance with the provisions in Section 85, "Pavement Markers," of the Standard Specifications, per Volume 1, Section 2-E of the City Traffic Design Standards, and these special provisions.
- B. All surfaces shall be clean and dry prior to application of the markers.
- C. Installation of pavement markers shall conform to the requirements of Section 85-1.06 of the Caltrans Standard Specifications.
- D. Blue reflective pavement markers shall be furnished and installed at the street centerline to mark the location of each existing fire hydrant.
- E. The adhesive material used in the installation of pavement markers will cause severe dermatitis if it is allowed to come in contact with the skin or eyes. Use gloves and protective creams on the hands. Should this material contact skin, wash thoroughly with soap and water. Do not attempt to remove this material from the skin with solvents. If any adhesive material gets into the eyes, flush for 10 minutes with water and secure immediate medical attention.

3.7 TEMPORARY MARKING

- A. Temporary Pavement markings shall be placed in conformance with the provisions in Section 84, "Pavement Markings," of the Standard Specifications, per the City Design Guidelines, and these special provisions.
- B. Temporary pavement delineation shall be furnished, placed, maintained, and removed in conformance with the provisions in Section 12-3.01, "General," of the State Standard Specifications and these special provisions. Nothing in these special provisions shall be construed as reducing the minimum standards specified in the California MUTCD or as relieving the Contractor from the responsibilities specified in Section 7-1.09, "Public Safety," of the State Standard Specifications.
- C. Whenever the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic. Lane line or centerline pavement delineation shall be provided at all times for traveled ways open to public traffic.
- D. All work necessary, including any required lines or marks, to establish the alignment of temporary pavement delineation shall be performed by the Contractor. Surfaces to receive temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with a new pattern of temporary pavement delineation or permanent pavement delineation.
- E. Temporary pavement markers and removable traffic type tape which conflicts with a new traffic pattern or which is applied to the final layer of surfacing or existing pavement to remain in place shall be removed when no longer required for the direction of public traffic, as determined by the Engineer.
- F. Whenever lane lines and centerlines are obliterated, the minimum lane line and centerline delineation to be provided shall be temporary reflective raised pavement markers placed at longitudinal intervals of not more than fifteen (15) feet. The temporary reflective raised pavement markers shall be the same color as the lane line or centerline the markers replace.
- G. Temporary reflective raised pavement markers shall be placed in accordance with the manufacturer's instructions and shall be cemented to the surfacing with the adhesive recommended by the manufacturer, except epoxy adhesive shall not be used to place pavement markers in areas where removal of the markers will be required.
- H. Temporary lane line or centerline delineation consisting entirely of temporary reflective raised pavement markers placed on longitudinal intervals of not more than twenty-four (24) feet shall be used on lanes opened to public traffic for a maximum of fourteen (14) days. Prior to the end of the fourteen (14) days the permanent pavement delineation shall be placed. If the permanent pavement delineation is not placed within the fourteen (14) days, the Contractor shall

provide, at his expense, additional temporary pavement delineation. The additional temporary pavement delineation to be provided shall be equivalent to the pattern specified for the permanent pavement delineation for the area, as determined by the Engineer.

3.8 SIGNAGE

- A. All existing sign posts, signs, beacons, sign panels & bases located in the sidewalk, curb ramp and roadway shown on plans to be removed shall include existing post/foundation/sign removal & disposal, and shall be included in the price paid for the various contract items of work and no additional compensation will be allowed therefor.
- B. Signage installation shall conform to Section 56 of the Caltrans Standard Specifications. In addition, Contractor shall reference City signage standards for post, foundation, and sign. Signs to be relocated as shown on the plans shall be covered under various contract items of work and no additional compensation will be allowed therefor.
- C. Mailbox coordination and relocation as shown on the Plans shall be covered under various contract items of work, and no additional compensation will be allowed therefor

END OF SECTION

SECTION 332250 – SHORING AND TRENCH SAFETY

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Shoring required for general safety, worker protection, and protection of adjacent property and pipelines from the hazards of caving ground.
- B. Shoring for trench excavations.
- C. Shoring for structural excavations.
- D. Shoring for tunneling pits.
- E. Contractor's responsibilities.
- F. Contractor's trench safety plan.
- G. Contractor's supervisor.

1.2 RELATED SECTIONS

- A. Section 020010 – Site Conditions
- B. Section 020030 – Existing Utilities and Underground Structures
- C. Section 021100 – Site Preparation
- D. Section 332315 – Excavation and Backfill

1.3 CONTRACTOR'S RESPONSIBILITIES FOR SAFETY

- A. The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.
- B. Minimum Requirements for Project Shoring Systems:
 - 1. Comply with all governing regulations pertaining to excavation safety including the most current edition of Cal/OSHA Construction Safety Order, Article 6;
 - 2. Be compatible with the surface and subsurface soil and groundwater conditions mapped and encountered in test borings for the project and resist lateral earth pressures and hydrostatic pressures (where not dewatered);
 - 3. Protect personnel that enter the excavation;
 - 4. Protect existing utilities, pavements, and structures;
 - 5. Excavation and installation of the shoring system must occur in a manner and sequence that does not damage existing structures, pavements, and

- 6. utilities including through settlement, heave, or vibrations;
 - 7. Provide stable excavation walls and bottom (e.g., prevent bottom heave);
 - 8. Be designed to operate in conjunction with dewatering and soil stabilization systems also provided by the Contractor.
 - 9. As permitted by the specifications, allow for removal or abandonment of shoring in a manner and sequence that is instep with the backfilling sequence (i.e., shoring shall not be removed ahead of backfilling) and does not damage the finished pipeline or structures or existing structures, pavements, and utilities including through settlement, heave or vibrations (Contractor to address removal/abandonment concerns specific to the type of shoring proposed in the shoring submittal). Any void space created by shoring removal shall be completely filled with a material approved by the City Engineer;
 - 9. Resist lateral live loads from vehicular and/or train traffic, construction equipment and spoils, if any;
- C. Safety provisions shall conform to U.S. Department of Labor (OSHA), the California Occupational Safety and Health Act, and all other applicable Federal, State, county, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Specifications.
- D. Contractor is advised that Part 1926 of 29 CFR, subpart P, has been revised. This regulation governs excavations, trenching and protective systems, sloping, benching, wood, and aluminum shoring for various types of soils, and depths of excavations. The Contractor shall follow these regulations (including the latest revisions) for this project.
- F. Where any of these requirements are in conflict, the more stringent requirement shall be followed.
- G. The Contractor shall cease work immediately and notify the Engineer if they determine their shoring method is unsafe.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. The Contractor, prior to beginning any trench or structure excavation 5 feet deep or over, shall submit to the Engineer for review for compliance with Section 6705 the Contractor's detailed plan showing design of all shoring, bracing, sloping of the sides of excavation, or other provisions for worker protection against the hazard of caving ground during the excavation of such trenches or structure excavation. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative system plans shall be prepared, stamped and signed by a civil or structural engineer licensed in the State of California at the Contractor's expense.
- B. A professional Civil or Structural Engineer licensed in the State of California shall design, sign, and stamp the Contractor's proposed shoring systems for review by

the Engineer prior to construction. Submit shoring system submittal in conjunction with dewatering plan and soil stabilization plan.

- C. The shoring system submittal shall address open cut trenching, each storm drain catch basin, manholes, and for all excavations located in close proximity to unlined drainage channels or in close proximity to critical structures, utilities, or granular non-cohesive materials. Individual submittals are required for all open-cut trenching and for each major underground structure (sewer tie-in locations) as well as existing critical utilities including those in close proximity to drainage channels or those that penetrate a 1.5H:1V plane projected down from the utility.
- D. The use of speed shores or trench box shoring in flowing, running or raveling ground conditions shall not be allowed. The Contractor shall be aware that flowing, running or raveling ground conditions are anticipated throughout the project and shall design their shoring system accordingly.
- F. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
- G. For all materials that are not pre-approved by the City the Contractor shall designate the source and/or submit samples of all materials in advance of their use for required testing and Engineer's approval. All testing costs shall be at the Contractor's expense.
- H. Contractor shall design shoring system to protect nearby utilities that may not daylight into trench excavation but limits of existing backfill in close proximity can become unstable due to the effects of ground disturbance and reduced strength caused by past nearby excavations and backfill. Past trench backfill has consisted of granular non-cohesive materials (including pea- gravel) and have little to no stand-up time. Full face, continuous excavation wall support shall be required in these areas.

1.5 SAFETY ORDERS

- A. The Contractor shall have at the work site, copies or suitable extracts of the Construction Safety Orders of Cal-OSHA, and Part 1926 of 29 CFR, subpart P.
- B. All work shall comply with the provisions of these and all other applicable laws, ordinances and regulations.
- C. The Contractor is prohibited in the use of unrestricted speed shores or trench box shoring in flowing, running, or raveling ground conditions.

1.6 CONTRACTOR'S SUPERVISOR

- A. The Contractor shall appoint a qualified and competent supervisory employee who shall be responsible to determine the sloping or shoring system which shall be used depending on local soil type, water table elevation, stratification, depth, and any other pertinent factors including the safety of the workers.

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

Not Used.

END OF SECTION

SECTION 332315 – EXCAVATION AND BACKFILL

PART 1. GENERAL

1.1 THE REQUIREMENT

- A. The Contractor shall provide all materials, equipment, and labor necessary to perform and complete all utility earthwork as shown on the Drawings and as specified herein.
- B. The work of this Section includes all utility earthwork required for construction of the project. Such utility earthwork shall include, but may not necessarily be limited to, the loosening, removing, loading, transporting, depositing, and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work, which shall include, but not necessarily be limited to, the furnishing, placing, and removing of sheeting, shoring and bracing necessary to safely support the sides of all excavations; all pumping, ditching, draining and other required measures for the removal or exclusion of water from the excavation; soil stabilization; the supporting of structures above and below the ground; all backfilling around structures and all backfilling of trenches; the disposal of excess excavated materials; borrow of materials to make up deficiencies for fills; and all other incidental earthwork.
- C. Hazardous materials shall be handled in accordance with all regulatory agency requirements.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 332250 – Shoring and Trench Safety
- B. Section 334000 – Storm Drainage Utilities
- C. Section 333600 – Grout

1.3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. **State Codes:**
California Labor Code.
Construction Safety Orders of the State of California.
- B. **State of California (Caltrans) Standards:**
 - 1. Standard Specifications:
 - Section 25 Aggregate Subbases.
 - Section 26 Aggregate Bases.

Section 68
Section 88

Subsurface Drains.
Engineering Fabrics

C. Commercial Standards:

ASTM D 422	Test Method for Particle-Size Analysis of Soils.
ASTM D 1556	Test Method for Density of Soil in Place by the
Sand-	Cone Method.
ASTM D 1557	Test Methods for Moisture-Density Relations of Soils
and	Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer
	and 18-in. (457-mm) Drop.
ASTM D 1633	Test Method for Compressive Strength of Molded
Soil-	Cement Cylinders.
ASTM D 2419	Method for Sand Equivalent Value of Soils and
Fine	Aggregate.
ASTM D 2487	Test Method for Classification of Soils for Engineering
	Purposes.
ASTM D 2922	Test Methods for Density of Soil and Soil-Aggregate in
	Place by Nuclear Methods (Shallow Depth).
ASTM D 3017	Test Method for Water Content of Soil and Rock in
Place	by Nuclear Methods (Shallow Depth).
ASTM D 3776	Test Methods for Mass Per Unit Area (Weight) of Woven
	Fabric.
ASTM D 3786	Method of Hydraulic Bursting Strength of Knitted Goods
	and Nonwoven Fabrics: Diaphragm Bursting Strength
	Tester Method.
ASTM D 4253	Test Methods for Maximum Index Density of Soils Using
	a Vibratory Table.
ASTM D 4254	Test Methods for Minimum Index Density of Soils and
	Calculation of Relative Density.
ASTM D 4318	Test Method for Liquid Limit, Plastic Limit,
	and Plasticity Index of Soils.
ASTM D 4491	Test Methods for Water Permeability of Geotextiles
by	Permittivity.
ASTM D 4632	Test Method for Grab Breaking Load and Elongation
of	Geotextiles.
ASTM D 4751	Test Method for Determining the Apparent Opening
Size	of a Geotextile.
ASTM D 6023	Standard Test Method for Density, Yield,
Cement	Content, and Air Content of Controlled Low-Strength
	Material (CLSM).
OSHA	Occupational Safety and Health Administration.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. The Contractor, prior to beginning any trench or structure excavation five (5) feet deep or over, shall submit to the Engineer for review for compliance with Section 6705 the Contractor's detailed plan showing design of all shoring, bracing, sloping of the sides of excavation, or other provisions for worker protection against the hazard of caving ground during the excavation of such trenches or structure excavation. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative system plans shall be prepared, stamped and signed by a civil or structural engineer licensed in the State of California at the Contractor's expense.
- B. For all materials that are not pre-approved by the City the Contractor shall designate the source and/or submit samples of all materials in advance of their use for required testing and Engineer's approval. All testing costs shall be at the Contractor's expense.
- C. Submit soil stabilization plan stamped and signed by a California registered civil engineer with minimum five (5) years experience with such work.
- D. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.

1.5 QUALITY ASSURANCE

- A. General: All soils and compaction testing will be done by a testing laboratory at the Contractor's expense and as specified in Section 2, "Special Provisions". The Engineer shall approve use of the Contractor-selected laboratory prior to the work.
- B. Where soil material is required to be compacted to a percentage of maximum density the maximum density at optimum moisture content will be determined in accordance with ASTM D 1557. Where cohesionless, free draining soil material is required to be densified to a percentage of relative density the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. Field density in-place tests will be performed in accordance with ASTM D 2922, or by such other means acceptable to the Engineer.
- C. The Contractor shall notify the Engineer at least forty-eight (48) hours prior to performing any utility excavation.

PART 2. PRODUCTS

2.1 BACKFILL MATERIALS

- A. Backfill shall be a selected or processed clean, fine earth, rock, or sand, free from objectionable material, vegetation, or other deleterious substances.
- B. The following TYPES of backfill materials are designated and defined as follows:

TYPE 1. **Sand** shall be material with 100 percent passing a 3/8-inch sieve, at least 90 percent passing a No. 4 sieve, and a sand equivalent value not less than 30.

TYPE 2. **Class 2 Aggregate Base** shall be crushed rock aggregate base material meeting the requirements of Section 26, "Aggregate Bases," for 19 millimeter (3/4 inch) maximum grading, of the Caltrans Standard Specifications.

TYPE 3. **Class 1, Type A or B, Permeable Material** shall be crushed stone, or gravel, durable and free from slaking or decomposition under action or alternate wetting or drying, uniformly graded, and shall meet the requirements of Section 68-2.02F(2) for Class 1, "Permeable Material," of the Caltrans Standard Specifications.

TYPE 4. **Class 2 Permeable Material** shall be crushed rock or gravel, durable and free from slaking or decomposition under the action of alternate wetting or drying, uniformly graded, and shall meet the requirements of Section 68-2.02F(3) for Class 2 "Permeable Material," of the Caltrans Standard Specifications.

TYPE 5. **Structure Backfill Material** shall meet the requirements of Section 19- 3.02B Type D of the Caltrans Standard Specifications.

TYPE 6. **Class 3 Permeable Material** shall be 3/4" crushed rock or gravel, durable and free from slaking or decomposition under the action of alternate wetting or drying, uniformly graded, and shall meet the requirements of Section 68-2.02F(4) for Class 3 "Permeable Material," of the Caltrans Standard Specifications.

TYPE 7. **Manufactured Backfill** shall be manufactured, angular, granular, crushed stone, rock, or slag with 100 percent passing a one-inch sieve and less than one percent passing a No. 4 sieve.

TYPE 8. **Controlled Low Strength Materials (CLSM)** shall conform to the requirements of Section 02320, "Controlled Low Strength Materials (CLSM)."

TYPE 9. **Native** material shall be material obtained from on-site excavations, provided the materials are not classified as unsuitable. Native material shall be free of stones, lumps, broken concrete or bituminous surfacing over 4 inches in diameter, objectionable material, vegetation, and deleterious substances.

TYPE 10. **Topsoil** material may be material which has been obtained at the site or may be imported. Removal of the topsoil shall be done after the area has been stripped of vegetation and debris as specified.

TYPE 11. **Aggregate Subbase** shall conform to the grading and quality

requirements of Section 25, "Class 2 Aggregate Subbase" of the Caltrans Standard Specifications.

TYPE 12. **Trench Foundation** shall be 3/4-inch crushed, angular rock meeting the following gradation:

Sieve	Percent Passing
1 1/2"	100%
1"	95-100%
1/2"	0-30%
#4	0-4%

2.2 UNSUITABLE BACKFILL MATERIAL

- A. Any material as determined by the Engineer.
- B. Any material determined to be hazardous is defined as unsuitable material.
- C. Washed, smooth rock (pea gravel) is classified as unsuitable material.

2.3 USE OF BACKFILL MATERIAL TYPES

- A. Backfill material types shall be used in conformance with City standards.
- B. Finish surfacing of landscape areas where shown on plans shall be mulch in conformance with Section 20 "Erosion Control and Highway Planting" of the Standard Specifications, all Amendments and these special provisions.

PART 3. EXECUTION

3.1 GENERAL

- A. Where abandoned underground structures are encountered in the street areas, remove to sufficient depth to allow underground lines to cross, backfill and compact during rough grading. The Engineer may require further work to be done if visual inspection indicates during construction.

3.2 STRUCTURE EXCAVATION

- A. **General:** Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the work. The removal of said materials shall conform to the lines and grades shown on the Drawings or ordered by the Engineer. The Contractor shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations, and all pumping, ditching, or other measures required for the removal or exclusion of water, including storm water, groundwater, and wastewater reaching the site of the work from any source so as to prevent damage to the work or adjoining property. Excavations shall be supported in a safe manner in accordance with applicable State safety

requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926) and Section 02250, "Shoring and Trench Safety." The limits of structure excavation shall be a minimum of 12 inches beyond the outside edge of the structure, and at a minimum no larger than necessary to facilitate backfill, compaction and testing operations.

3.3 PIPELINE AND UTILITY TRENCH EXCAVATION

- A. **Trench Width:** Unless otherwise shown or directed, excavation for pipelines and utilities shall be open-cut trenches. Trench widths shall be as noted on the plans.
- B. **Subgrade:** The surface of the subgrade after compaction shall be hard, uniform, smooth, self draining, and true to grade and cross section.
- C. **Trench Bottom:** The pipe bedding shall be given a final trim establishing grade such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe. Rounding out the trench bottom or bedding to form a cradle for the pipe will not be allowed. The Contractor shall excavate for bell holes and fittings.
- D. **Open Trench:** The maximum amount of open trench permitted in any one location shall be the length necessary to accommodate the amount of pipe installed and backfilled in a single day. All trenches shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic in those locations where it is impractical to backfill at the end of each day.
- E. **Over-Excavation:** Contractor shall notify Engineer if any unstable trench conditions develop in trench bottom. When ordered by the Engineer, whether or not indicated on the Drawings, trenches, tunneling pits and/or structure excavations shall be over-excavated beyond the depth shown in order to provide a firm and unyielding trench base.

3.4 OVER-EXCAVATION NOT ORDERED, SPECIFIED, OR SHOWN

- A. Any over-excavation carried below the grade ordered, specified, or shown, shall be backfilled to the required grade and densified with the specified material and compaction. Such work shall be performed by the Contractor at its own expense.

3.5 EXCAVATION IN LAWN AREAS

- A. Where excavation occurs in lawn areas, the sod shall be carefully removed, stockpiled, watered and preserved for replacement, unless specifically approved by Engineer in writing before Work is performed. Excavated material may be placed on the lawn provided that a tarp or other suitable method is employed to protect the lawn from damage. The lawn shall not remain stockpiled for more than 48 hours. Immediately after completion of backfilling and testing of the pipeline, the sod shall be replaced in a manner so as to restore the lawn as near as possible to its original condition. Contractor shall provide new sod, in kind, if removed sod has remained stockpiled for more than 48 hours.

- B. All other landscaping shall be replaced in kind as shown on the Drawings or as directed by the Engineer. All damaged irrigation systems, including piping and electrical wiring, shall be repaired and operating properly the same day they are damaged.

3.6 EXCAVATION IN VICINITY OF TREES

- A. Except where trees are shown to be removed, Contractor shall protect trees from injury during construction operations. Remaining trees shall be protected by installing protective fencing outside the dripline. No tree roots over 2 inches in diameter shall be cut without express permission of the Engineer. Trees shall be supported during excavation by any means previously reviewed by the Engineer.
- B. If existing roots over one inch in diameter are cut during the course of the work, the cut faces shall be thoroughly coated with root sealer and growth inhibitor. Exposed roots shall be covered with wet burlap to prevent them from drying out.
- C. The City shall retain an arborist to evaluate the health of the trees prior to construction, formulate site-specific recommendations to maintain the health of trees during and after construction, and monitor construction near the trees at appropriate intervals.

3.7 DISPOSAL OF EXCESS EXCAVATED MATERIAL

- A. The Contractor shall remove and dispose of all excess excavated material to a suitable site. The proper and legal disposal and associated costs shall be the responsibility of the Contractor.

3.8 BACKFILL - GENERAL

- A. Backfill shall not be dropped directly upon any structure or pipe.
- B. Unless specifically excepted by the Engineer, backfill shall not be placed until after all water is removed from the excavation.

3.9 PIPE AND UTILITY TRENCH ZONES AND BACKFILL

- A. **Pipe Zone:**
 - 1. The limits of Pipe Zone are shown on the plans.
 - 2. The Pipe Zone shall be backfilled with the specified backfill material. The Contractor shall exercise care to prevent damage to the pipeline coating, cathodic bonds, or the pipe itself during the installation and backfill operations.
 - 3. Verify pipe and manhole line and grade prior to installing Pipe Zone material.
 - 4. Prevent flotation of sewer pipe during backfill operations.
 - 5. Pipe Zone material to be compacted to 90% RC, with a maximum 6-inch lifts.
 - 6. Demonstrate in the field and through compaction test results that

installation and compaction efforts achieve proper compaction under the pipe haunches. This includes after the removal of shoring devices from the trench.

- B. **Trench Bedding:** The limits of Bedding are shown on the plans.
 - 1. After placement and compacting of the bedding material the Contractor shall perform a final trim for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe.
 - 2. Contractor shall support and/or hold-down the pipe during placement as necessary.
 - 3. Bedding shall be placed to form a smooth, uniform, horizontal plane to match pipe slope.
 - 4. Hand-excavate flanges or bell holes at each pipe joint to provide uniform support for all sections of pipe.
- C. **Trench Zone:** After the Pipe Zone backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the Trench Zone may proceed. The limits of Trench Zone are shown on the plans.
- D. **Utility Crossing:** For any new pipeline installation that crosses under an existing electric, gas, telephone, or cable TV utility pipe(s) or conduit(s) the Contractor shall replace the existing backfill material around the existing utility pipe(s) or conduit(s) with CLSM or as directed by the Engineer. For any new pipeline installation crossing under existing storm or sanitary sewer, the contractor shall replace existing backfill material with CLSM or as directed by the Engineer. Use a concrete vibrator during backfilling operations.

3.10 PLACING AND SPREADING OF BACKFILL MATERIALS

- A. Backfill materials shall be placed and spread evenly in horizontal layers. The backfill layers shall be evenly spread so that when compacted, each layer shall not exceed 6-inches in thickness. Material for mechanically compacted backfill shall be placed in 8-inch maximum lifts prior to compaction.
- B. Where the backfill material moisture content is below the optimum moisture content water shall be added before or during spreading until the proper moisture content is achieved.
- C. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be dried or replaced until the moisture content is satisfactory.
- D. Backfill shall be mechanically compacted by means of tamping rollers, sheepfoot rollers, pneumatic tire roller, vibrating rollers, or other mechanical tampers. All such equipment shall be of a size and type subject to review by the Engineer. Impact-type pavement breakers (stompers) will not be permitted. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or new improvements. The Contractor shall make

its own determination in this regard.

3.11 COMPACTION OF BACKFILL MATERIALS

- A. Each layer of backfill material as defined herein, shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content range.
- B. Flooding, ponding, or jetting shall not be used.
- C. Equipment weighing more than 10,000 pounds shall not be used closer to structure walls than a horizontal distance equal to the depth of the fill against the structure wall at that time. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.
- D. **Trench Backfill Requirements:** Per City standards.
- E. **Compaction Requirements for Trench Bedding:** Per City standards.
- F. **Compaction Requirements for Pipe Zone:** Contractor shall conduct compaction testing, at a minimum, as follows for Pipe Zone. Additional tests will be required depending on test results and field conditions.
 - 1. Contractor shall demonstrate successful means and methods to meet compaction required.
 - 2. Passing tests are required at one every 300 linear feet of trench.

3.12 SOIL STABILIZATION

- A. The Contractor shall install soil stabilization materials to stabilize excavations where not completely and continuously shored.
- B. Additional stabilization of existing utility trench backfill and bedding materials via permeation grouting is required to prevent raveling of materials during excavation operations including coarse, granular, non-cohesive trench backfill and pipe embedment materials.
- C. Utilities parallel to new sewer or storm drain mains:
 - 1. Minimum limits of grouting shall be per the following:
 - a. Where separation is less than 4 feet.
 - b. Vertical limits shall apply to any areas disturbed by excavation and as directed by the Engineer.
- D. Utilities crossing new sewer or storm drain main:
 - 1. Minimum limits of grouting shall be per the following:
 - a. 2 feet beyond edge of existing utility.
 - b. Vertical limits shall apply to any areas disturbed by excavation and as shown directed by the Engineer.

- E. For utilities not shown on the Plans, the minimum limits described for existing utilities parallel to or crossing the new sewer main shall apply.
- F. The Contractor shall submit a soil stabilization plan for review.
- G. Existing gravity utilities shall be protected from grout intrusion into the utility. To protect City storm drains and existing sewers to remain in service against damage from grouting, such utilities shall be inspected using CCTV after soil stabilization to determine whether grout has penetrated the gravity utility. If grout is found in the utility, Contractor shall remove all grout and re-inspect said utility to demonstrate grout removal, at no additional cost to the owner. If desired, Contractor shall be allowed to inspect the existing gravity utilities prior to grouting to establish existing condition and at no additional cost to the City.

END OF SECTION

SECTION 333600 – GROUT

PART 1. GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide all materials, equipment, and labor necessary to furnish and place grout and shall form, mix, place, cure, repair, finish, and do all other work as necessary to produce finished grout as shown on the Drawings and as specified herein.
- B. The following types of grout shall be covered in this Section:
 - 1. Non-Shrink Grout: Non-Shrink grout is to be used unless another type is specifically referenced or as shown on the Drawings.
 - 2. Epoxy Grout
 - 3. Cement Grout
 - 4. Flowable Cement Grout
 - 5. Low Viscosity (Permeation) Grout and Fast Setting Injected Grout
 - 6. Polymer Grout
 - 7. Neat Cement Grout

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 013300 – Contractor Submittals
- B. Section 015600 – Protection of Existing Facilities
- C. Section 332315 – Excavation and Backfill
- D. Section 333400 – Storm Drainage Utilities
- E. Division 1 – General Requirements.

1.3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Commercial Standards:

ASTM C109	Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-In. or 50-mm Cube Specimens).
ASTM C531	Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacing.
ASTM C579	Test Methods for Compressive Strength of Chemical- Resistant Mortars, Grouts, and Monolithic Surfacing.

ASTM C827	Test Method for Change in Height of Early Ages of Cylindrical Specimens from Cementitious Mixtures.
ASTM D696	Test Method for Coefficient of Linear Thermal Expansion of Plastics.
CRD-C 621 Grout.	Corps of Engineers Specification for Non-shrink

1.4 CONTRACTOR SUBMITTALS

- A. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.

PART 2. PRODUCTS

2.1 PREPACKAGED GROUTS

- A. Non-Shrink Grout:
 - 1. Non-shrink grout shall be a prepackaged, inorganic, non-gas-liberating, non-metallic, cement-based grout requiring only the addition of water. Manufacturer's instructions shall be printed on each bag or other container in which the materials are packaged. The specific formulation for each class of non-shrink grout specified herein shall be that recommended by the manufacturer for the particular application.
 - 2. Class A non-shrink grouts shall have a minimum 28-day compressive strength of 5,000 psi; shall have no shrinkage (zero percent) and a maximum 4.0 percent expansion in the plastic state when tested in accordance with ASTM C 827; and shall have no shrinkage (zero percent) and a maximum of 0.2-percent expansion in the hardened state when tested in accordance with CRD C 621.
 - 3. Class B non-shrink grouts shall have a minimum 28-day compressive strength of 5,000 psi and shall meet the requirements of CRD C 621.
 - 4. Application:
 - a. Class A non-shrink grout shall be used for the repair of all holes and defects in concrete members which are water bearing or in contact with soil or other fill material, grouting under all equipment base plates, and at all locations where grout is specified; except, for those applications for Class B non-shrink grout and epoxy grout specified herein. Class A non-shrink grout may be used in place of Class B non-shrink grout for all applications. Apply Class A grout to annular spaces, specifically where PVC sanitary sewer connects to pre-cast manholes.
 - b. Class B non-shrink grout shall be used for the repair of all holes and defects in concrete members which are not water-bearing and not in contact with soil or other fill material.
- B. Epoxy Grout:
 - 1. Epoxy grout shall be a pourable, non-shrink, 100-percent solids system.

The epoxy grout system shall have 3 components: resin, hardener, and specially blended aggregate, all premeasured and prepackaged. The resin component shall not contain any non-reactive diluents. Resins containing butyl glyceryl ether (BGE) or other highly volatile and hazardous reactive diluents are not acceptable. Variation of component ratios is not permitted unless specifically recommended by the manufacturer. Manufacturer's instructions shall be printed on each container in which the materials are packaged.

2. The chemical formulation of the epoxy grout shall be that recommended by the manufacturer for the particular application.
3. The mixed epoxy grout system shall have a minimum working life of 45 minutes at 75 degrees F.
4. The epoxy grout shall develop a compressive strength of 5,000 psi in 24 hours and 10,000 psi in 7 days when tested in accordance with ASTM C 579, Method B. There shall be no shrinkage (zero percent) and a maximum 4.0 percent expansion when tested in accordance with ASTM C 827.
5. Application: Epoxy grout shall be used to embed all anchor bolts and reinforcing steel required to be set in grout, and for all other specified applications.

2.2 CEMENT GROUT

- A. Cement Grout: Cement grout shall be composed of one part cement, 3 parts sand, and the minimum amount of water necessary to obtain the desired consistency. Where needed to match the color of adjacent concrete, white portland cement shall be blended with regular cement as needed. The minimum compressive strength at 28 days shall be 4,000 psi.
- B. Cement shall be as specified in Section 02537, "Precast Concrete Manholes."
- C. Cement Grout shall not be used as Contact Grout for filling voids created during a tunnel or shaft excavation.

2.3 FLOWABLE CEMENT GROUT

- A. Flowable Cement Grout: Minimum penetration resistance of 10 psi in 24 hours when tested in accordance with ASTM C403 and a 28-day unconfined compressive strength of 45-165 psi.
- B. Application:
 1. Void spaces between the earth and the casing pipe.
 2. Interstitial space between the casing pipe and carrier pipe.

2.4 LOW VISCOSITY (PERMEATION) GROUT AND FAST SETTING INJECTED GROUT

- A. Low viscosity grout shall be injected to provide stabilization for the following conditions:
 1. Stabilize existing utility pipelines during trenching and excavation activities to prevent destabilization of materials when exposed in

- vertical excavations.
 - 2. Stabilize materials that would be subject to vibration densification during nearby sheet pile driving or construction activity.
 - 3. Prevent porous and permeable materials from transmitting perched groundwater into project excavations.
- B. The low viscosity grout shall consist of Portland cement, water and fluidizer additives.
- C. Grouting should completely bind the granular material into a single coherent grouted mass (grouted prism).
- D. Grout batch records shall include time of mix, amount and type of components used, and anticipated set times.
- E. Fast Setting Injected Grout shall be used in establishing bulkheads to limit the spread/flow of low viscosity grout. Mix according to the following proportions:
- 1. Component A:
 - a. Portland Cement Type I-II 8 sacks @ 94 lbs. per sack
 - b. Bentonite suspending agent 0-50 lbs.
 - c. PGA expansion agent 0-3 lbs.
 - 2. Component B:
 - a. Sodium silicate 40 gallons
 - b. Water

2.5 NEAT CEMENT GROUT

- A. Application: Use for dewatering well abandonment.
- B. Mix according to the following ratio:
- 1. 94 lbs. Portland Type II cement.
 - 2. 5 gallons clean water.
 - 3. Up to 5% bentonite powder or chips.

2.6 PRESSURE GROUTING EQUIPMENT

- A. Pressure grouting equipment shall include a mixer and holdover agitator tanks. Gages shall be provided to indicate pressure used. The mixer shall be provided with a meter capable of indicating to one-tenth of a cubic foot the volume of grout used. The grout pump shall be capable of pumping low viscosity grout.

2.7 CONSISTENCY

- A. The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is such that the grout is plastic and moldable but will not flow. Where "dry pack" is specified, it shall mean a grout of that consistency; the type of grout to be used shall be as specified herein for the particular application.

2.8 MEASUREMENT OF INGREDIENTS

- A. Measurements for cement grout shall be made accurately by volume using appropriate containers. Shovel measurement will not be allowed.
- B. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.

PART 3. EXECUTION

3.1 GENERAL

- A. All surface preparation, curing, and protection of cement grout shall be as specified in Section 334000, "Storm Drainage Utilities". The finish of the grout surface shall match that of the adjacent concrete.
- B. The manufacturer of Class A non-shrink grout and epoxy grout shall provide on-site technical assistance upon request.
- C. All mixing, surface preparation, handling, placing, consolidation and other means of execution for prepackaged grouts shall be done according to the printed instructions and recommendations of the manufacturer.

3.2 CONSOLIDATION

- A. Grout shall be placed in such a manner, for the consistency necessary for each application, so as to assure that the space to be grouted is completely filled.

3.3 APPLICATION

- A. Prior to placement of any subsurface grout, Contractor shall notify USA to mark subscribing subsurface utilities in the vicinity of planned excavations and grouting. Use project drawings and make detailed site inspections to locate existing subsurface utilities prior to beginning grouting/excavation operations.
- B. Grouting is to be done prior to shoring installation and prior to any dewatering.
- C. Grout mix shall be designed and injected at pressures that will not damage adjacent utilities. No heave of ground surface shall be allowed and all existing utilities, pipelines, and structures shall be protected from damage during application and curing of grout. Install temporary elevation benchmarks in grouting areas and at suitable distances outside of grouting areas to provide reference checks against existing elevations. Monitor elevations of existing improvements including utilities during all grouting operations and maintain daily logs of cumulative changes in benchmark elevations.
- D. Provide constant monitoring of existing gravity utilities to verify no inflow of grout during grout pumping operations. Immediately cease grout pumping if intrusion occurs. Contractor is responsible to remove grout from any affected utilities.

- E. Notify the City immediately if elevation changes greater than 0.25-inches occur and immediately cease all work in and around the affected area. Revise and resubmit grouting plan for review by the Engineer prior to continuation of work in the affected area.
- F. Pump grout through grout injection casings until grout returns are noted in the next adjacent pre-drilled/drive grout injection casing.
- G. Coordinate grout injection pressures (always to be less than pressures that could damage existing utilities), grout fluidity/set times and grout injection casing layout dimensions.
- H. Maintain daily log of grouting operations including grout injection casing number, location, grouting pressure and rate, stage depth and grout quantity and batch used.
- I. Samples shall be taken from each batch mixed and properly identified, stored and tested to verify that compressive strength is within specified range.
- J. During and upon completion of grouting, the work area shall be cleaned and restored to original condition including adequate disposal of all generated waste and wastewater.
- K. Repair the top of each grout injection hole to match existing pavement grade.

END OF SECTION

SECTION 344133 – PEDESTRIAN WARNING LIGHTS

PART 1. GENERAL

1.1 WORK INCLUDED

- A. PEDESTRIAN WARNING LIGHTS consists of furnishing transportation, labor, materials, and equipment to:
1. Mount Rectangular Rapid Flashing Beacon components onto pole or overhang.
 2. Wire components including solar panel, push button, control panel, and battery together.
 3. Mount separate pedestrian push button to pole and trench wire connection to Rectangular Flashing Beacon unit.
 4. Install appropriate signage with RRFB system.
 5. Relocation of Street Light from Street light Pole to New RRFB Pole.
 6. Removal of existing Street light pole.

1.2 REFERENCES

- A. California Manual on Uniform Traffic Control Devices (current edition):
- California Regulatory Signs:
W16-7
S1-1
R62E(CA)
 - Pushbutton Location Area Figure 4E-3/4E-4
- B. Caltrans Standard Details
- ES-7A
 - ES-7B
 - ES-7C
 - ES-7M
 - ES-11
- C. Carmanah SC315 Solar User Manual
- D. Caltrans Standard Specifications

1.3 QUALITY ASSURANCE

- A. The Engineer reserves the right to inspect the manufacture or fabrication. The Engineer's inspection of the work does not relieve the Contractor of the responsibility for the work. Errors or faults that are discovered during fabrication shall be corrected by the Contractor prior to installation.

PART 2. PRODUCTS

2.1 MATERIALS

A. 1B Pole:

1. Conform to Caltrans ES-7B

B. Push Button Post:

1. Conform to Caltrans ES-7A

C. Rectangular Rapid Flashing Beacon Hardware:

1. Carmanah SC315 Solar System (Optional push button with sign and sign mount and no confirmation light on light bar)

2.2 FABRICATION

- A. Signage and RRFB system shall be complete for proper installation as shown on project plans and user manual.
- B. Finished work shall be firm, well anchored, in true alignment, properly squared, with smooth clean uniform appearance, without holes, cracks, discoloration, distortion, stains, or marks
- C. Construct work to eliminate burrs, dents, cutting edges, and sharp corners.
- D. Except as indicated or directed otherwise, finish all surfaces smooth
- E. Surfaces which are intended to be flat shall be without dents, bulges, oil canning, gaps, or other physical deformities
- F. Surfaces which are intended to be curved shall be smoothly free-flowing to required shapes
- G. Conceal all fasteners
- H. Make access panels tight-fitting, light proof, and flush with adjacent surfaces
- I. Carefully follow manufacturer's recommended fabricating procedures regarding expansion or contraction, fastening, and restraining of acrylic plastic
- J. Exercise care to ensure that painted, polished, and plated surfaces are unblemished in the finished work
- K. Isolate dissimilar materials. Exercise particular care to isolate nonferrous metals from ferrous metals
- L. All illumination shall be even and without hot spots

- M. Ease all exposed metal edges.
- N. Provide miscellaneous metal items required for completion of the work even though not shown or specified

PART 3. EXECUTION

3.1 INSTALLATION

- A. Guard against damaging existing pavements and planting where signage is to be installed.
- B. Mount each light bar per manufacturer standards, mount pedestrian activated push buttons per MUTCD standards
- C. Flashing beacons to be aimed toward drivers
- D. Wirelessly connect RRFBS in the same area
- E. Set up flash duration time per push button activation
- F. For any pole foundation installations, sonotubes shall be used as necessary for protection of any existing utilities. Compensation for this work shall be included in the various other items of work and no separate payment will be made therefor.

3.2 CLEAN UP

- A. Keep areas of work clean, neat and orderly at all times. Clean surfaces, inside and out. Use approved cleaners if necessary to remove dirt.
- B. Protective coverings and strippable films shall be removed at a time that will afford the greatest protection of the signage. Surfaces shall be cleaned to remove excess glazing and sealant compounds, dirt, and other substances.
- C. Upon completion of work and before final acceptance, remove tools, surplus materials, apparatus, and debris from the site. Leave the site in a neat, and clean condition. Wash, clean, and leave paved areas without stains.

3.3 FINAL INSPECTION AND ACCEPTANCE

- A. Upon completion of work, a final inspection for acceptance will be performed by the Engineer.

END OF SECTION

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