



**DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION**

**GENERAL PROVISIONS, NOTICE TO BIDDERS,
SPECIAL PROVISIONS, PROPOSAL AND CONTRACT
FOR**

**Valley Avenue and Northway Road Intersection Improvements
Project No. 23532**

Bid Opening Date – February 21, 2024

2:00 p.m.

To be used in conjunction with the City Standard Specifications and Details dated November 2016, the State Standard Specifications and Plans dated 2015 and all updates at the time of bid, and the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished.

APPROVED



Adam Nelkie
City Engineer
No. 78830
Expires: 9/30/2025



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NOTICE TO BIDDERS

Proposals Sought; Time for Receipt

Sealed Bid Proposals will be received by the City Clerk's Office of the City of Pleasanton, Civic Center, in-person at 123 Main Street (or by mail to P.O. Box 520), Pleasanton, CA 94566, until 2:00 p.m., **FEBRUARY 21, 2024**, for work as described in the Plans and Specifications entitled:

Valley Avenue and Northway Road Intersection Improvements Project No. 23532

At the above-mentioned time, date and address, the Bid Proposals will be publicly opened and read.

Please review the City website and/or bidnetdirect.com for addendum(s) prior to submission.

Scope of Work and Project Location

This work will consist of removing existing southeast and southwest concrete channelizing medians, removing an existing flashing crosswalk, construction of concrete curb extensions (bulb-outs) at the southeast and southwest curbs, installing minor landscaping and irrigation, constructing Americans with Disabilities Act (ADA) curb ramps, and installing a traffic signal. Electrical work would compose of: protection of existing utilities and appurtenances; the installation of foundations, pole standards, mast arms, signal display equipment, luminaires, lamps, underground conduits, pull boxes, cables and conductors; the bonding and grounding of circuitry, the installation of electrical services; excavating and backfilling, installing signing on traffic signal standards; traffic control; and all other necessary an any other not of work not mentioned above that are required by the Plans and these Special Provisions.

The Engineer's cost estimate for the project is \$1,053,333.

Copies of Plans and Specifications

In order to be an eligible bidder, plans, specifications and all bid proposal and contract documents must adhere to the latest version of all bid documents as amended through any addendums. Plans may be purchased from the Engineering Division of the City of Pleasanton, Civic Center, 200 Old Bernal Avenue, at a cost of **\$25 per set** plus shipping. Plans will be electronically available on the City's website and bidnetdirect.com at no charge. The City requires all parties interested in this bid opportunity to email the City and request to be added to the plan holder list. Any addenda will be sent electronically to those on the plan holder list prior to the bid opening date. To request plans or to be added to the plan holder list, please email: cnovenario@cityofpleasantonca.gov and lhattton@cityofpleasantonca.gov.

Bid Security and Contract Bonds

Each Bid Proposal shall be accompanied by either cash, a cashier's check or a certified check, amounting to not less than ten percent of the bid, payable to the order of the City of Pleasanton or by a bond for that amount and payable in the form contained in this bid package. The successful Bidder will be required to furnish performance and payment bonds, each in an amount not less than one hundred percent (100%) of the contract price, and a maintenance bond not less than ten percent (10%) of the contract price.

Bid Forms

The Contractor is responsible for reviewing the City of Pleasanton's City Bids website (and/or bidnetdirect.com) to ensure they have the latest addendums and utilize all updated documents issued through addendum. Bidders must complete bid proposal and submit it in its entirety. Failure to do so will cause the bid to be deemed nonresponsive.

City of Pleasanton's City Bids Website:
<http://www.cityofpleasantonca.gov/business/bids.asp>

Bids Received After Deadline

Bids received after the time established for receiving bids will not be considered. Except as provided in Section "Instruction to Bidders," no Bidder may withdraw a bid after the time established for receiving bids or before the award and execution of the contract, unless the award is delayed for a period of ninety (90) calendar days after the date of the City's opening of bids.

Rejection of Bids

The City reserves the right to reject any or all bids and to determine which bid is, in the City's judgment, the lowest responsive and responsible bid of a Bidder or group of Bidders. The City also reserves the right to waive any inconsequential omissions or discrepancies in any bid and to delete certain items listed in the bid as set forth therein. Costs for developing, submitting, and presenting bids are the sole responsibility of the Bidder and claims for reimbursement will not be accepted by the City.

Contractor's License Classification

As provided in California Business & Professions Code Section 7028.15, the City has determined that at the time of bid, the Contractor shall possess a valid **Class A General Engineering Contractor or C - 10** Contractor license. The Contractor's failure to possess the specified license shall render the Bid as non-responsive and shall act to bar award of the contract to any Bidder not possessing said license at the time of bid, unless exempted by federal or state law.

Contractor's Department of Industrial Relations Registration

Bidder and its Subcontractors must be registered and qualified to perform public work pursuant to section 1725.5 of the Labor Code, subject to limited legal exceptions under Labor Code section 1771.1.

This Contract will be subject to compliance monitoring and enforcement by the California Department of Industrial Relations, pursuant to Labor Code section 1771.4.

Substitution of Securities in Lieu of Retention

At the successful Contractor's option, securities may be substituted for the required retention, in accordance with provisions of Section 22300 of California Public Contract Code.

Prevailing Wage

In accordance with California Labor Code Sections 1770 et seq., the Contractor shall pay general prevailing rate of per diem wages to all workers employed under this contract.

Labor Nondiscrimination

The awarded Contractor shall comply with the requirements of the State of California's Standard Specification Code Section 7-1.01A(4) "Labor Nondiscrimination" under this contract.

Milestone #1 and Liquidated Damages

The Bidder shall agree to complete all work required and specified within the areas identified as Civil Engineering which includes concrete/storm drain/asphalt paving/landscape, as described in Section 1-18 Progress Schedule no later than August 2, 2024 as defined as Milestone #1. The City will be awarding the contract on April 16, 2024, and will issue the Notice to Proceed no later than May 10, 2024. Bidder shall pay liquidated damages in the sum of \$1,500 per calendar day for Milestone #1 should the successful Bidder fail to complete the required work of the Milestones as described herein.

Bidder shall agree to commence work under this Contract within fifteen (15) calendar days after the date of written "Notice to Proceed" (NTP) and fully complete the project within 130 working days after start of work. Bidder shall pay as liquidated damages in the sum of \$1,500.00 per working day should the successful Bidder fail to complete the work within this time limit unless the successful Bidder is granted a time extension.

Questions

Questions should be directed to the project engineer either in-person at 200 Old Bernal Avenue, Pleasanton, California, by mail at P.O. Box 520, Pleasanton, California 94566-0802, by phone at (925) 931-5667, or by email at cnovenario@cityofpleasantonca.gov. Questions will only be answered by reference to particular sections of these bid documents. If interpretation is deemed necessary, then the question shall be addressed in writing and a clarification shall be given to all prospective Bidders through addenda. To allow time for issuance of addenda, questions shall only be accepted prior to seven (7) calendar days before the bid opening date.

CITY OF PLEASANTON

Date: 1/29/2024

DocuSigned by:

By: 7E049A5394294DE...
Jocelyn Kwong, City Clerk

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BID PROPOSAL

VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS PROJECT NO. 23532

DATE: _____

Proposal of _____ (hereinafter called "Bidder") a _____ organized and existing under the laws of the State _____, doing business as _____, to the City of Pleasanton, City Clerk, 123 Main Street, Pleasanton, California (hereinafter called "City").

Ladies and Gentlemen:

The Bidder, in compliance with the invitation for bids for the **VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS, PROJECT NO. 23532**, City of Pleasanton, having examined the Plans and Specifications and related documents and the premises of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and supplies, declares that this proposal is made without collusion with any other person, firm or corporation and agrees to construct the project in accordance with the contract documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this Bid Proposal is a part.

1) Civil Engineering Preparation (Milestone #1)

The Bidder shall agree to complete all work required and specified within the areas identified as Civil Engineering which includes concrete/storm drain/asphalt paving/landscape, as described in Section 1-18 Progress Schedule no later than August 2, 2024 as defined as Milestone #1. The City will be awarding the contract on April 16, 2024, and will issue the Notice to Proceed no later than May 10, 2024. Bidder shall pay liquidated damages in the sum of \$1,500 per calendar day for Milestone #1 should the successful Bidder fail to complete the required work of the Milestones as described herein.

2) General Contract Liquidated Damages.

Bidder shall agree to commence work under this Contract within fifteen (15) calendar days after the date of written "Notice to Proceed" (NTP) and fully complete the project within 130 working days after start of work. Bidder shall pay as liquidated damages in the sum of \$1,500.00 per working day should the successful Bidder fail to complete the work within this time limit unless the successful Bidder is granted a time extension.

Bidder acknowledges receipt of the following addendum:

<u>No.</u>	<u>Date</u>	<u>No.</u>	<u>Date</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Bidder to perform all of the work described in the Contract Documents for the total bid amount entered.

Item No.	Quantity (Approximate)	Unit of Measure	Item Description	Unit Price	Total
1.	1	LS	Mobilization		
2.	1	LS	Traffic Control		
3.	1	LS	Water Pollution Control (Includes Preparing SWPPP)		
4.	1	LS	Develop Water Supply		
5.	690	SF	Remove Landscape and Irrigation		
6.	3000	SF	Remove Concrete Sidewalk		
7.	160	LF	Remove Concrete Curb		
8.	410	LF	Remove Concrete (Curb & Gutter)		
9.	31	SF	Remove Concrete Median		
10.	120	CY	Roadway Excavation (Export)		
11.	2	EA	Protect Existing Tree		
12.	3	EA	Remove Existing Tree		
13.	2	EA	Curb Ramp – Case A		
14.	1	EA	Curb Ramp – Case C		
15.	450	LF	Concrete Curb & Gutter (Type A)		
16.	45	LF	Concrete Median Curb		
17.	217	LF	Concrete Retaining Curb		
18.	49	CY	Concrete Sidewalk		
19.	35	LF	Metal Guardrail		
20.	37	CY	Class 2 Aggregate Base (Sidewalk)		
21.	105	TON	Roadway HMA Plug		
22.	1	EA	Curb Inlet		
23.	80	LF	12” RCP		
24.	1	LS	Planting and Irrigation		
25.	1	LS	Install Traffic Signal at Valley Ave at Northway Rd.		
26.	1	LS	Install Intersection Striping at Valley Ave at Northway Rd.		
TOTAL				\$	

Note: The Bidder acknowledges that the total amount set forth above is for the entire project as represented by the Contract Documents regardless of itemization.

Attached is a bid guaranty bond duly completed by a guaranty company authorized to carry on business in the State of California in the amount of at least ten percent (10%) of the total amount of the bid, or alternately, there is attached a certified or cashier's check payable to the City in the amount of at least ten percent (10%) of the total amount of the bid.

If this Bid Proposal is accepted, bidder agrees to sign the contract and to furnish the performance bond, labor and materials bond, maintenance bond, and the required evidences of insurance within ten (10) working days after receiving written notice of the award of the contract. If bidder fails to contract as provided herein or fails to provide the bonds and/or evidence of insurance, the City may at its option, determine the acceptance thereof shall be null and void, and the forfeiture of such security accompanying this Bid Proposal shall operate and the same shall be the property of the City of Pleasanton.

This Bid Proposal shall be good and may not be modified, withdrawn or canceled for a period of ninety (90) calendar days after the date of the City's opening of bids.

Bidder hereby certifies that the licensing information hereinafter stated is true and correct. Bidder further agrees, if the bid is accepted and a contract for performance of the work is entered into with the City, to so plan work and to prosecute it with such diligence that the work shall be completed within the time stipulated in the agreement. Under the penalty of perjury bidder affirms that, to the best of bidder's knowledge, the representations made in this bid are true.

Bidders are required by law to be licensed and regulated by the contractors' State License Board. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board.

It is a misdemeanor for any person to submit a bid to a public agency in order to engage in the business or act in the capacity of a contractor within this state without having a license therefor, except for specific cases outlined in Business and Professions Code, Section 7028.15.

_____	_____
Name of Bidder	Contractor's License Number
_____	_____
Signature of Bidder	Expiration Date
_____	_____
Print Name	Address of Bidder
_____	_____
Title of Signatory	(____)_____
_____	Telephone Number
State of Incorporation	_____
_____	_____
DIR Registration Number	Contractor's Email Address

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BID BOND FORM

Note: Bidders must use this form if a bid bond is to be used as bidder’s security. This form is not necessary if cash, cashier’s check made payable to the City, or certified check made payable to the City, accompanies the bid.

We, the undersigned, _____ (“Principal”), and _____ a corporation organized and existing under and by virtue of the laws of the State of _____ and authorized to do business in the State of California as a surety, (“Surety”), acknowledge ourselves jointly and severally bound to the CITY OF PLEASANTON for ten percent (10%) of the total bid amount.

Contractor’s Bid \$ _____
10% Bid Bond \$ _____

The above amount to be paid to the CITY OF PLEASANTON as follows: If Principal’s bid for the work required for the project, described below,

**VALLEY AVENUE AND NORTHWAY ROAD
INTERSECTION IMPROVEMENTS
PROJECT NO. 23532**

shall be accepted and the proposed contract awarded to Principal, and if Principal shall fail to execute the contract within the time specified in the Award and Execution of Contract section of this Contract Document, and to furnish the required faithful performance and labor and material bonds; otherwise, the obligation shall be void. Bid errors shall not constitute a defense to forfeiture.

If the City of Pleasanton brings suit upon this bond and judgment is recovered, Surety shall pay all costs incurred by the CITY OF PLEASANTON in bringing such suit, including reasonable attorney’s fees.

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

Principal

By:

Surety:

By:

(Notarization of Surety’s signature required)

(corporate seal)

CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS

The undersigned Bidder certifies that the Bidder is, at the time of the bidding, and shall be, throughout the period of the contract, licensed by the State of California to do the type of work required under the terms of the contract documents. Bidder further certifies that the Bidder is skilled and regularly engaged in the general class and type of work called for in the contract documents.

The Bidder represents that the Bidder is competent, knowledgeable and has special skills in the nature, extent and inherent conditions of the work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the particular facilities which may create, during the construction program, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder expressly acknowledges that the Bidder is aware of such peculiar risks and has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the construction work with respect to such hazards.

Bidder has been engaged in the contracting business, under the present business name, for _____ years. Experience in work of a similar nature to that called for in the contract documents extends over a period of _____ years.

BIDDER'S CONTRACT EXPERIENCE

The Bidder shall list below three projects completed in the last seven (7) years of similar size and complexity that indicate the Bidder's experience as a Contractor.

1.

Project	Amount
Owner	Contact
Telephone	Completion Date

2.

Project	Amount
Owner	Contact
Telephone	Completion Date

3.

Project	Amount
Owner	Contact
Telephone	Completion Date

Name of Bidder _____

Signed this _____ day of _____, 20_____.

BIDDER'S Labor Classifications

The Bidder shall list below the anticipated labor classifications completed by Bidder. List Subcontractor's classifications under List of Subcontractors.

- | | | | |
|------------------------------------------|--------------------------------------------|-------------------------------------------|------------------------------------------|
| <input type="checkbox"/> ASBESTOS | <input type="checkbox"/> BOILERMAKER | <input type="checkbox"/> BRICKLAYERS | <input type="checkbox"/> CARPENTERS |
| <input type="checkbox"/> CARPET/LINOLEUM | <input type="checkbox"/> CEMENT MASONS | <input type="checkbox"/> DRYWALL FINISHER | <input type="checkbox"/> DRYWALL/LATHERS |
| <input type="checkbox"/> ELECTRICIANS | <input type="checkbox"/> ELEVATOR MECHANIC | <input type="checkbox"/> GLAZIERS | <input type="checkbox"/> IRON WORKERS |
| <input type="checkbox"/> LABORERS | <input type="checkbox"/> MILLWRIGHTS | <input type="checkbox"/> OPERATING ENG | <input type="checkbox"/> PAINTERS |
| <input type="checkbox"/> PILE DRIVERS | <input type="checkbox"/> PIPE TRADES | <input type="checkbox"/> PLASTERERS | <input type="checkbox"/> ROOFERS |
| <input type="checkbox"/> SHEET METAL | <input type="checkbox"/> SOUND/COMM | <input type="checkbox"/> SURVEYORS | <input type="checkbox"/> TEAMSTER |
| <input type="checkbox"/> TILE WORKERS | <input type="checkbox"/> _____ | <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

B. BIDDER'S FINANCIAL RESPONSIBILITY

Reference is hereby made to the following banks and surety companies as to the financial responsibility and general reliability of the Bidder:

1. Name of Bank _____
Address _____
2. Name of Bank _____
Address _____
3. Surety Company _____
Address _____
4. Surety Company _____
Address _____

C. LIST OF SUBCONTRACTORS

In conformance with Section 2.1 – 1.10 of the Caltrans Standard Specifications and § 4100 of California Public Contract Code, the Bidder shall provide the following information for each Subcontractor to whom the Bidder proposes to subcontract portions of the work in an amount in excess of one-half of one percent of the total Bid Proposal OR \$10,000, whichever is greater.

1. Name of Subcontractor _____
Contractor License Number _____
Address _____ Phone No. _____
Individual, Partnership or Corporation _____
Dollar Value of work to be Performed _____
Work to be Performed _____
Labor Classification/s _____
DIR Registration # _____
CSLB# _____ Email _____

2. Name of Subcontractor _____

Contractor License Number _____

Address _____ Phone No. _____

Individual, Partnership or Corporation _____

Dollar Value of work to be Performed _____

Work to be Performed _____

Labor Classification/s _____

DIR Registration # _____

CSLB# _____ Email _____

3. Name of Subcontractor _____

Contractor License Number _____

Address _____ Phone No. _____

Individual, Partnership or Corporation _____

Dollar Value of work to be Performed _____

Work to be Performed _____

Labor Classification/s _____

DIR Registration # _____

CSLB# _____ Email _____

4. Name of Subcontractor _____

Contractor License Number _____

Address _____ Phone No. _____

Individual, Partnership or Corporation _____

Dollar Value of work to be Performed _____

Work to be Performed _____

Labor Classification/s _____

DIR Registration # _____

CSLB# _____ Email _____

5. Name of Subcontractor _____

Contractor License Number _____

Address _____ Phone No. _____

Individual, Partnership or Corporation _____

Dollar Value of work to be Performed _____

Work to be Performed _____

Labor Classification/s _____

DIR Registration # _____

CSLB# _____ Email _____

6. Name of Subcontractor _____

Contractor License Number _____

Address _____ Phone No. _____

Individual, Partnership or Corporation _____

Dollar Value of work to be Performed _____

Work to be Performed _____

Labor Classification/s _____

DIR Registration # _____

CSLB# _____ Email _____

Signature of Bidder: _____

INSTRUCTIONS TO BIDDERS

General

The City of Pleasanton, hereinafter referred to as “City,” will receive at the City Clerk’s Office of the City of Pleasanton, Civic Center, 123 Main Street, Pleasanton, California, until the hour and day specified in the “Notice to Bidders,” sealed Bid Proposals for furnishing materials, equipment and/or labor for performing the work described in these Contract Documents. All Bid Proposals shall be submitted in accordance with the provisions of the “Proposal Requirements and Conditions” set forth under Section 2 of the Standard Specifications of the State of California, except as modified herein.

Plan Holder List

The City requires all Bidders to be on the project’s plan holder list prior to submitting the Bid Proposal. Please see Notice to Bidders for instructions on how to request to be added to the plan holder list.

Bid Proposal Form

All Bid Proposals shall be submitted on the Bid Proposal forms which are bound herein. All Bid Proposal forms shall be filled in completely in ink with all signature blocks signed by the Bidder. The completed Bid Proposal forms shall remain bound with the Contract Documents provided and shall be sealed in an envelope addressed to the City of Pleasanton, California and clearly labeled with identifying project name and number, and bid opening date.

Delivery of Bid Proposal

The Bid Proposal shall be delivered by the time and to the place set forth in the “Notice to Bidders.” It is the Bidder’s sole responsibility to see that his or her Bid Proposal is received in proper time. Any proposal received after the time fixed for opening of bids shall be returned to the Bidder unopened.

Opening of Bid Proposals

The Bid Proposals shall be publicly opened and read at the time and place fixed in the “Notice to Bidders.”

Modifications and Alternative Proposals

Each Bidder represents that his or her Bid Proposal is based upon the materials and equipment described in the Contract Documents. Unauthorized conditions, limitations or provisions attached to a Bid Proposal will render it non-responsive and may cause its rejection. The completed Bid Proposal forms shall be without interlineations, alterations or erasures. Alternative Bid Proposals will not be considered unless written request has

been submitted to the Engineer for approval at least seven (7) calendar days prior to the date for receipt of Bids. The request shall include the name of substitute material or equipment drawings, cut sheets, performance and test dates and any other data or information necessary for complete evaluation. If the Engineer approves any proposed substitution, such approval shall be set forth in an Addendum. Oral, telegraphic, or telephonic Bid Proposals or modifications will not be considered.

Contractor's Department of Industrial Relations Registration

A bid will not be accepted nor any contract entered into without proof that the bidder and its subcontractors are registered with the California Department of Industrial Relations to perform public work pursuant to Labor Code Section 1725.5, subject to limited legal exceptions.

Discrepancies in Bid Proposals

In the event there is more than one bid item on a Bid Proposal form, the Bidder shall furnish a price for all items and failure to do so will render the Bid Proposal non-responsive and may cause its rejection. In the event there are unit price bid items on a Bid Proposal form and the "amount" indicated for a unit price bid item does not equal the product of the unit price and quantity, the unit price shall govern and the amount will be corrected accordingly. In the event there is more than one bid item on the Bid Proposal form and the total indicated on the Bid Proposal form does not agree with the sum of the amounts bid on the individual items, the price bid on the individual items shall govern and the total on the proposal will be corrected accordingly.

Bid Security

Each Bid Proposal shall be accompanied by cash, a cashier's check or a certified check, amounting to ten percent (10%) of the Bid, payable to the order of the City of Pleasanton or by a bond for that amount and so payable in the form contained in this bid package. The amount so posted shall be forfeited to the City if the successful bidder does not, within ten (10) working days not including Saturday, Sunday and legal holidays after date of postage of mailed written notice that the contract has been awarded, enter into a contract with the City for the work.

After the contract is duly entered into by the successful bidder, the amount of the deposit will be returned to the Bidder. All certified checks, cashier's checks, and cash deposits of the unsuccessful bidders will be returned to the bidders within two (2) weeks after the contract is entered into by the successful bidder.

Miscellaneous

For requirements on Bidder's examination of site, withdrawal of proposals, and disqualification of bidders, refer to Section 2 of the Standard Specifications of the State of California.

AWARD AND EXECUTION OF CONTRACT

General

Award and execution of Contract shall be in accordance with “Award and Execution of Contract” set forth under Section 3 of the Standard Specifications of the State of California except as modified herein.

Award of Contract

The City reserves the right to reject for any reason any or all Bid Proposals.

No Bidder shall modify, withdraw or cancel a Bid Proposal or any part thereof for ninety (90) calendar days after the time designated for the opening of Bids in the “Notice to Bidders.” Within this time period of ninety (90) days and if the City so chooses, the Contract shall be awarded to the lowest responsible Bidder.

In accordance with the provisions of California Business & Professions Code Section 7028.5, the City has determined that at the time that a bid is submitted, the bidder shall possess a valid **Class A General Engineering Contractor or C-10** Contractor license. Failure to possess the specified license shall render the bid as non-responsive and shall act to bar award of the Contract to any Bidder not possessing said license at the time of bid.

Execution of Contract

Within ten (10) working days, not including Saturday, Sundays and legal holidays, after date of postage of mailed notice of award to the lowest responsible Bidder, the following documents shall be submitted to the City.

- Executed contract
- Contract bonds as required by the forms contained herein including:
 - ◇ Faithful Performance Bond for 100% of contract price
 - ◇ Labor and Material Bond for 100% of contract price
 - ◇ Maintenance Bond for 10% of contract price
- Certificates of insurance
- Evidence of a current business license to conduct business in the City of Pleasanton

Failure to submit the above shall be just cause for forfeiture of the Bid Proposal security.

CONTRACT

VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS PROJECT NO. 23532

THIS CONTRACT is made and entered into this _____ day of _____, 20__
by and between _____, (“Contractor”), whose address is _____,
and telephone number is _____
and the CITY OF PLEASANTON, a municipal corporation (“City”).

WITNESSETH:

WHEREAS, the City has awarded to the Contractor a contract for **VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS, PROJECT NO. 23532**

NOW, THEREFORE, in consideration of the mutual promises set forth herein, the parties agree as follows:

1. Work to be Performed. The work will generally consist of:

This work will consist of removing existing southeast and southwest concrete channelizing medians, removing an existing flashing crosswalk, construction of concrete curb extensions (bulb-outs) at the southeast and southwest curbs, installing minor landscaping and irrigation, constructing Americans with Disabilities Act (ADA) curb ramps, and installing a traffic signal. Electrical work would compose of: protection of existing utilities and appurtenances; the installation of foundations, pole standards, mast arms, signal display equipment, luminaires, lamps, underground conduits, pull boxes, cables and conductors; the bonding and grounding of circuitry, the installation of electrical services; excavating and backfilling, installing signing on traffic signal standards; traffic control; and all other necessary an any other not of work not mentioned above that are required by the Plans and these Special Provisions.

Prime contractor shall self-perform 50% or more of the contract work by dollar amount.

Said work is more particularly shown in the following documents which are on file with the Public Works Department, Engineering Division of the City and are incorporated herein by this reference:

- A. Approved Plans and Specifications entitled the **VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS, PROJECT NO. 23532.** and addenda thereto, if any.

- B. Contract Change Orders approved by the City Engineer, done in accordance with the Standard Specifications.
 - C. The elements of the proposal submitted to the City by the Contractor, which the City has accepted.
2. Compensation. The City shall pay the Contractor for work actually performed at the unit prices set out in the Contractor's proposal to the City as set forth in Exhibit A of this agreement and incorporated herein. The quantities of work stated therein are estimates only; actual quantities will be measured for payment in accordance with the specifications.
3. Method of Payment.
- A. Progress Payments. As of the twentieth day of each month, the Contractor may submit for review a request for progress payment, listing the amount and value of work actually performed during the preceding month, or part thereof. Upon the City Engineer's review and approval, including adjustments if any, City shall make a progress payment to the Contractor.
 - B. 5% Retention. Five percent (5%) of the amount due shall be retained by the City as retention. The City shall retain five percent (5%) of the contract amount for thirty-five (35) days after the Notice of Completion for the work is recorded. The Contractor may elect to receive 100 percent of payments due under the contract documents from time to time, without retention from any portion of the payment by the City, by depositing securities of equivalent value with the City in accordance with the provisions of Section 22300 of the California Public Contract Code. Such securities, if deposited by the Contractor, shall be valued by the City, whose decision on valuation of the securities shall be final. Securities eligible for investment under this provision shall be limited to those listed in Section 16430 of the California Government Code.
 - C. Time of Payment. Requests submitted promptly as of the 20th day of each month will be paid by the 10th day of the following month.
4. Incorporation of Contract Documents. This Contract expressly incorporates all terms and conditions contained in the Contract Documents. In the event there is any conflict between this Contract and the Contract Documents, this Contract shall control.
5. **Indemnification. Contractor shall indemnify, save and hold harmless from and defend the City, members of the City Council and their agents, servants**

and employees, against any and all claims, costs, demands, causes of action, suits, losses, expense or other detriment or liability arising from or out of acts or omissions of Contractor, its agents, sub-contractors, officials or employees, in connection with the execution of the work covered by this Contract or any amendments thereto.

6. Certification re: Workers' Compensation. In accordance with Section 1861 of the California Labor Code, each contractor to whom a public works contract is awarded shall sign and file with the awarding body the following certification prior to performing the work of the contract: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."
7. Department of Industrial Relations: Pursuant to Labor Code section 1771.1, the Bidder and its Subcontractors must be registered and qualified to perform public work pursuant to section 1725.5 of the Labor Code, subject to limited legal exceptions.
8. Independent Contractor. The Contractor is an independent contractor retained by the City to perform the work described herein. All personnel employed by the Contractor, including subcontractors, and personnel of said subcontractors, are not and shall not be employees of the City.
9. Warranty Against Defects. The Contractor hereby warrants all work done under this contract against all defects in materials and workmanship for a period of 12 months following City's acceptance of said work. If any defects occur within said 12 months, the Contractor shall be solely responsible for the correction of those defects.
10. Counterparts and Electronic Signatures. This contract may be executed in multiple counterparts, each of which shall be an original and all of which together shall constitute one agreement. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with U.S. federal E-Sign Act of 2000 (15 U.S. Code §7001 et seq.), California Uniform Electronic Transactions Act (Cal. Civil Code §1633.1 et seq.), or other applicable law) or other transmission method, and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the date and year first above written.

CONTRACTOR:

By: _____
Its Authorized Agent

By: _____
Its Authorized Agent
(Second signature required if a corporation)

CITY OF PLEASANTON:

By: _____
Gerry Beaudin, City Manager

ATTEST:

Jocelyn Kwong, City Clerk

APPROVED AS TO FORM:

Daniel G. Sodergren, City Attorney

CONTRACTOR'S BOND FOR FAITHFUL PERFORMANCE

KNOW ALL PERSONS BY THESE PRESENTS:

Whereas, The City Council of the City of Pleasanton, State of California, and _____ (“Principal”) have entered into an agreement whereby Principal agrees to install and complete certain designated public improvements, which said agreement, dated _____, 20__, and identified as **VALLEY AVENUE AT NORTHWAY ROAD INTERSECTION IMPROVMENTS, PROJECT NO. 23532**, is hereby referred to and made a part hereof; and

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

Now, therefore, we, Principal and _____ (“Surety”), are held and firmly bound unto the City of Pleasanton, in the penal sum of _____ dollars (\$ _____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

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

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

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

In witness whereof, this instrument has been duly executed by the Principal(s) and Surety above named, on _____, 20__..

Contractor

Surety

By: _____

By: _____

By: _____

By: _____

Date Signed: _____

Surety Address

Surety's Phone No.

(attach acknowledgments)

LABOR AND MATERIAL BOND

Whereas, the City Council of the City of Pleasanton, State of California, and _____ (“Principal”) have entered into an agreement whereby Principal agrees to install and complete certain designated public improvements, which agreement, dated _____, 20____, and identified as **VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS, PROJECT NO. 23532**, is hereby referred to and made a part hereof; and

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

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

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

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

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

In witness whereof, this instrument has been duly executed by Principal and surety above named, on _____, 20____.

Principal

Surety

By: _____

By: _____

(Signature of Principal and Surety must be notarized)

CONTRACTOR'S BOND FOR ONE YEAR MAINTENANCE

**VALLEY AVENUE AND NORTHWAY ROAD
INTERSECTION IMPROVEMENTS
PROJECT NO. 23532**

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the City of Pleasanton has awarded and _____ (“Contractor”) is about to execute a Contract for the above-referenced Project ("Contract") and the terms thereof, which are incorporated herein by reference, require the furnishing of a bond with said Contract providing for maintenance for a period of one (1) year from the date of acceptance by the City Council of said contract by the Contractor.

NOW, THEREFORE, WE, Contractor and _____ (“Surety”), are held firmly bound unto the City of Pleasanton, as Agency in the penal sum of:

_____ DOLLARS, (\$ _____), lawful money of the United States of America, said sum being ten percent (10%) of the estimated amount payable by Agency under the terms of the contract, for payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the above bounden _____, Principal(s), within a period of one (1) year after the completion and acceptance of the project fulfills the provisions of the Contract and complies with any necessary repairs or replacement of faulty materials to the **VALLEY AVENUE AND NORTHWAY ROAD INTERSECTION IMPROVEMENTS, PROJECT NO. 23532** and related facilities, then the above obligation shall be void; otherwise to remain in full force and effect.

No cancellation or termination of this bond by Surety shall be effective unless thirty (30) days prior written notice thereof has been delivered to the City Engineer, provided that no cancellation or termination shall affect any liability incurred or accrued hereunder prior to the expiration of said thirty (30) day period or any work performed under any Contract issued by the City.

This bond is executed in accordance with the rules, regulations, standards, specifications and policies of the City of Pleasanton.

Bond No. _____

IN WITNESS WHEREOF, the Principal(s) and Surety have caused these presents to be executed, and corporate names and seals to be hereunto attached by proper officers hereunto duly authorized, the day and year first herein-above written.

Contractor

Surety

By:

By: _____

By:

By: _____

Date Signed

Surety Address:

Surety Phone No. () _____

(attach acknowledgments)

GENERAL PROVISIONS

Unless otherwise stated in these Contract Documents or deemed inapplicable by the Engineer, the General Provisions of the State of California Standard Specifications are hereby incorporated with the following General Provisions.

SECTION 1. DEFINITIONS AND TERMS

As used in these Contract Documents unless the context otherwise requires, the following terms have the meanings indicated:

Addenda: Are written or graphic instruments, clarifications or corrections, issued prior to the execution of the contract, which modify or interpret the Contract Documents.

Bidder: Any individual, partnership or corporation submitting a Bid Proposal for the work described in the Contract Documents.

Bidding Documents: Includes the Notice to Bidders, the Bid Proposal, Bid Bond, Contractor's Information Forms including the Contractor's past experience, financial responsibility and Subcontractors, and Instructions to Bidders.

City: The City of Pleasanton.

City Standard Specifications and Standard Details: Means the November 2016 edition of the City's Standard Specifications and Standard Details.

Contractor: Any individual, partnership or corporation that has entered into a Contract with the City to perform the work described in the Contract Documents.

Contract Documents: Includes the Bidding Documents, the Award and Execution of Contract Requirements, the Contract, the Labor and Material Bond, the Performance Bond, the Maintenance Bond, the City General Provisions, the Special Provisions, Project Plans, the City of Pleasanton Standard Specifications, and Standard Details, the State Standard Specifications and Plans, all Addenda issued by the City and all Change Orders executed by the City.

Engineer: The City Engineer of the City of Pleasanton, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

General Provisions: Those Specifications that apply to all projects unless specifically modified by Special Provisions.

Project Plans: Drawings specifically prepared for a particular project.

Special Provisions: Specifications specifically prepared for a particular project.

State Standard Specifications and Standard Plans: Means the May 2015 edition of the Standard Specifications and Standard Plans of the State of California, Department of Transportation. Any reference therein to the State of California or a State agency, office or officer shall be interpreted to refer to the City or its corresponding agency, office or officer acting under this contract.

Subcontractor: Any individual, partnership or corporation that has contracted with the Contractor to provide labor, equipment and/or materials described in the Contract Documents which is an amount in excess of one-half of one (1) percent of the Contractor's total Bid.

Work: Material, equipment and labor to be provided to City by the Contractor as defined by the Contract Documents.

SECTION 2. SCOPE OF WORK

The Work presented in these Contract Documents shall be done in accordance with: 1) the Special Provisions and Project Plans, 2) the City Standard Specifications and Standard Details and 3) the State Standard Specifications and Standard Plans. In case of conflicting portions, the above order of precedence shall prevail. In case of conflict between the specifications and drawings, the specifications shall prevail.

SECTION 3. CONTROL OF WORK AND MATERIALS

3-01. Protection of Workers in Trench Excavations: As required by Section 6705 of the California Labor Code and in addition thereto, whenever work under the Contract involves the excavation of any trench or trenches 5 feet or more in depth, the Contractor shall submit for acceptance by the City or by a registered civil or structural engineer, employed by the City, to whom authority to accept has been delegated, in advance of excavation, 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. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer employed by the Contractor, and all costs therefore shall be included in the price named in the Contract for completion of the Work as set forth in the Contract Documents. Nothing in this Section shall be construed to impose tort liability on the City, the Engineer, nor any of their officers, agents, representatives, or employees.

3-02. Substitution of Materials; Assignment of Certain Rights: In accordance with the provisions of Section 3400 of the California Public Contract Code, a Contractor shall be provided a period of not less than 35 days after award of the contract for submission of data substantiating a request for a substitution of "an equal" item.

In accordance with Section 4552 of the Government Code, the Bidder shall conform to the following requirements: In submitting a bid to a public purchasing body, the Bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act [Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchase of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the Bidder.

SECTION 4. LEGAL RELATIONS AND RESPONSIBILITY

4-01. Travel and Subsistence Payments:

- (a) As required by Section 1773.1 of the California Labor Code the Contractor shall pay travel and subsistence payments to each worker needed to execute the Work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with this Section.
- (b) To establish such travel and subsistence payments, the representative of any craft, classification, or type of worker needed to execute the contracts shall file with the Department of Industrial Relations fully executed copies of collective bargaining agreements for the particular craft, classification or type of work involved. Such agreements shall be filed within 10 days after their execution and thereafter shall establish such travel and subsistence payments whenever filed 30 days prior to the call for bids.

4-02. State Wage Determination:

- (a) As required by Sections 1770 et seq., of the California Labor Code, the Contractor shall 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 City's Engineering Counter, which copies shall be made available to any interested party on request. The Contractor shall post a copy of such determination at each job site.
- (b) As provided in Section 1775 of the California Labor Code, the Contractor shall, as a penalty to the City, forfeit \$50.00 for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the City Engineer for such work or craft in which such worker is employed for any public work done under the contract by it or by any subcontractor under it.

4-03. Payroll Records; Retention; Inspection; Compliance Penalties; Rules and Regulations

- (a) As required under the provisions of Section 1776 of the California Labor Code, each Contractor and subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work.
- (b) The payroll records enumerated in Paragraph 4-03(a), herein, shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:
 - 1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.
 - 2. A certified copy of all payroll records enumerated in Paragraph 4-03(a), herein, shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.
 - 3. A certified copy of all payroll records enumerated in Paragraph 4-03(a), herein, shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the body awarding the contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to subparagraph 4-03(b2), herein, the requesting party shall pay the costs of preparation by the Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal offices of the Contractor.
- (c) Each Contractor shall file a certified copy of the records, enumerated in Paragraph 4-03(a) with the entity that requested the records within 10 days after receipt of a written request.
- (d) Any copy of records made available for inspection and copies furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement, shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of

the Contractor awarded the contract or performing the contract shall not be marked or obliterated.

- (e) The Contractor shall inform the body awarding the contract of the location of the records enumerated under Paragraph 4-03(a) including the street address, city and county, and shall, within five (5) working days, provide a notice of change of location and address.
- (f) In the event of noncompliance with the requirements of this Article, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this Article. Should noncompliance still be evident after the 10-day period, the Contractor shall, as a penalty to the state or political subdivision on whose behalf the Contract is made or awarded, forfeit \$25.00 dollars for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Responsibility for compliance with these Paragraphs 4-03(a) through 4-03(f) lies with the Contractor.
- (g) In conformance with State Bill 854 all contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement) as of projects awarded on or after April 1, 2015 unless exempted by federal or state law.

4-04. Apprentices: Attention is directed to Sections 1777.5 and 1777.6 and 1777.7 of the California Labor Code and Title 8, California Administrative Code Section 200 et seq. To insure compliance and complete understanding of the law regarding apprentices, and specifically the required ratio thereunder, the Contractor (and subcontractors) should, where some question exists, contact the Division of Apprenticeship Standards prior to commencement of the work. Responsibility for compliance with this Section 4.04 lies with the Contractor. The City policy is to encourage the employment and training of apprentices on its construction contracts as may be permitted under local apprenticeship standards.

4-05. Working Hours. The Contractor shall comply with all applicable provisions of Section 1810 to 1815, inclusive, of the California Labor Code relating to working hours. The Contractor shall, as a penalty of the City, forfeit \$25.00 for each worker employed in the execution of the contract by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and 40 hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of eight (8) hours at not less than 1-1/2 times the basic rate of pay.

4-06. Workers' Compensation:

- (a) In accordance with the provisions of Section 1860 of the California Labor Code, the Contractor's attention is directed to the requirement that in accordance with the provisions of Section 3700 of the California Labor Code, every contractor will be required to secure the payment of compensation of his or her employees.
- (b) In accordance with the provisions of Section 1861 of the California Labor Code, each Contractor to whom a public works contract is awarded shall sign and file with the awarding body the following certification prior to performing the work of the contract: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

4-07. Prime Contractor Job Site Postings. Pursuant to Labor Code Section 1771.4, Contractor is required to post all job site notices prescribed by law or regulation. The contractor shall comply with all applicable provisions of section 16451 (d) of California Labor Code relating to the posting of job site notices prescribed by regulation.

4-08. Insurance Requirements for Contractors: BIDDER'S ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT BIDDERS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF AN APPARENT LOW BIDDER FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT BIDDER MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

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

(a) Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office form number CG 00 01 (ED. 1/96) covering Commercial General Liability and name the City as additional insured.
2. Insurance Services Office form number CA 00 01 (Ed. 12/93) covering Automobile Liability, Code 1 "any auto."

3. Workers' Compensation insurance as required by the Labor Code of the State of California and Employers Liability insurance, and an endorsement for waiver of subrogation.

(b) Minimum Limits of Insurance

Contractor shall maintain limits no less than:

1. General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: \$2,000,000 per accident for bodily injury and property damage.
3. Workers' Compensation and Employers Liability: Workers' compensation limits as required by the Labor Code of the State of California and Employers Liability limits of \$2,000,000 per accident.

(c) Deductibles and Self-Insured Retentions

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

(d) Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

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

- b. The Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
- c. The specific coverage obligations set forth in this Section 4-07 are minimums only, and the Contractor shall have the obligation to provide the minimum coverages stated in these Specifications or such greater or broader coverage, if available in the Contractor's policies.
- d. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officers, officials, employees or volunteers.
- e. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Workers' Compensation and Employers Liability Coverage

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

3. All Coverages

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

(e) Acceptability of Insurers

Insurance is to be placed with insurers with a Best's rating of no less than A:VII.

(f) Verification of Coverage

The Contractor shall furnish the City with certificates of insurance and with original endorsements effecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements may be on forms provided by the City. Where by statute, the City's workers' compensation-related forms cannot be used, equivalent forms approved by the Insurance Commissioner are to be

substituted. All certificates and endorsements are to be received and approved by the City before work commences. The City reserves the right to require insurance policies, at any time.

(g) Subcontractors

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

4-09. Department of Industrial Relations: **This Contract** will be subject to compliance monitoring and enforcement by the California Department of Industrial Relations, pursuant to Labor Code section 1771.4 Attention is directed to Section 1725.5 of the California Labor Code. To insure compliance and complete understanding of the law regarding contractor registration the Contractor (and subcontractors) should, where some question exists, contact the Department of Industrial Relations prior to submission of bid. Responsibility for compliance with this Section lies with the Contractor and Sub contractors.

SECTION 5. PROSECUTION AND PROGRESS

5-01. Removal, Relocation, or Protection of Existing Utilities: In accordance with the provisions of Section 4215 of the California Government Code, 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 City or owner of the utility to provide for the removal or relocation of such utility facilities.

5-02. Preconstruction Conference: Following award of contract, submittal of executed contract, and approval of certificates of insurance and bonds, but before start of work, a preconstruction conference shall be held at a mutually agreed time and place. The conference shall be arranged by the City and attended by City representatives including the inspector, and the Contractor, Contractor's superintendent and major subcontractors. Contractor shall present at the conference the progress and submittal schedules, and progress payment format, and provide emergency phone numbers.

The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established.

5-03. Beginning of Work: The Contractor shall be prepared to begin work within fifteen (15) calendar days after "Notice to Proceed".

SECTION 6. MEASUREMENT AND PAYMENT

6-01. Payments: Attention is directed to Section 9-1.16, "Partial Payments," and 9-1.17, "Payment After Acceptance," of the State Standard Specifications and these City General Provisions.

As of the 20th day of each month, requests for progress payment listing amount and value of work performed during that month may be submitted for review. Upon review and approval or adjustment by the Engineer, progress payment will be made, retaining five percent (5%) of the amount due. Requests submitted promptly as of the twentieth of the month will be paid normally by the tenth of the following month.

The Bidder's attention is directed to the provisions of Section 9 of the Standard Specifications and the following modification, all of which are applicable to this Contract:

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Engineer shall, within five (5) days, make such inspection, and when the Engineer finds the work acceptable under the Contract and the Contract fully performed, the Engineer will recommend to the City Council (at the next following Council meeting) that the Contract be accepted and a "Notice of Completion" be prepared and recorded. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within fifteen (15) days after the expiration of thirty (30) days following the date of recordation of the Notice of Completion.

The Contractor shall supply with each progress payment request (with the exception of the first progress payment submittal) an email, fax or letter from each subcontractor stating: (a) the date that he/she has received his/her portion of the preceding payment; and (b) if the payment received was the total amount then due. Should the payment not include the total amount invoiced due to a dispute, the subcontractor shall include the details of such dispute in his/her letter with enough information for the City to verify that the provisions of Section 7108.5 of the CA Business and Professions Code have been met.

Before the final payment is due, the Contractor shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and other indebtedness connected with the work have been paid, except that in case of disputed indebtedness or liens, the Contractor may submit in lieu of evidence of payment, a surety bond satisfactory to the City guaranteeing payment of all such disputed amounts when adjudicated in cases where such payment has not already been guaranteed by surety bond.

6-02. Substitution of Securities in Lieu of Retention: Pursuant to Section 22300 of the Public Contract Code, the Contractor may substitute securities for any money held by the City to insure performance of the contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the City or federally-

chartered banks as an escrow agent, who shall return such securities to the Contractor upon satisfactory completion of the contract. Deposit of securities with an escrow agent shall be subject to written agreement in accordance with the provisions of Section 22300. The City shall not certify that the contract has been completed until at least 35 days after filing by the City of a Notice of Completion. Securities shall be limited to those listed in Section 16430 of the California Government Code, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed upon by the Contractor and the City.

SECTION 7. DISPUTE RESOLUTION

7-01. Claims. This Section applies to and provides the exclusive procedures for any Claim arising from or related to the Contract or performance of the Work.

(A) *Definition*. “Claim” means a separate demand by Contractor, submitted in writing by registered or certified mail with return receipt requested, for change in the Contract Time, including a time extension or relief from liquidated damages, or a change in the Contract Price, that has previously been submitted to City as a Change Order in accordance with the requirements of the Contract Documents, and which has been rejected or disputed by City, in whole or in part.

(B) *Limitations*. A Claim may only include the portion of a previously rejected demand that remains in dispute between Contractor and City. With the exception of any dispute regarding the amount of money actually paid to Contractor as Final Payment, Contractor is not entitled to submit a Claim demanding a change in the Contract Time or the Contract Price, which has not previously been submitted to City in full compliance with this Section, and subsequently rejected in whole or in part by City.

(C) *Scope of Section*. This Section is intended to provide the exclusive procedures for submission and resolution of Claims of any amount, and applies in addition to the provisions of Public Contract Code Section 9204 and Sections 20104 et seq., which are incorporated by reference herein.

(D) *No Work Delay*. Notwithstanding the submission of a Claim or any other dispute between the parties related to the Project or the Contract Documents, Contractor must perform the Work and may not delay or cease Work pending resolution of the Claim or other dispute, but must continue to diligently prosecute the performance and timely completion of the Work, including the Work pertaining to the Claim or other dispute.

7-02. Claims Submission. The following requirements apply to any Claim subject to this Section:

(A) *Substantiation*. The Claim must be submitted to City in writing, clearly identified as a “Claim” submitted pursuant to this Section 7, and must include all of the documents necessary to substantiate the Claim including the Change Order request that was rejected in whole or in part, and a copy of City’s written rejection

that is in dispute. The Claim must clearly identify and describe the dispute, including relevant references to applicable portions of the Contract Documents, and a chronology of relevant events. Any Claim for additional payment must include a complete, itemized breakdown of all labor, materials, taxes, insurance, and subcontract, or other costs. Substantiating documentation such as payroll records, receipts, invoices, or the like, must be submitted in support of each claimed cost. Any Claim for an extension of time or delay costs must be substantiated with schedule analysis and narrative depicting and explaining claimed time impacts.

(B) *Claim Format.* A Claim must be submitted in the following format:

(1) General introduction, specifically identifying the submission as a “Claim” submitted under this Section 7.

(2) Relevant background information, including identification of the specific demand at issue, and the date of City's rejection of that demand.

(3) Detailed explanation of the issue(s) in dispute. For multiple issues, separately number and identify each issue and include the following for each separate issue:

(a) The background of the issue, including references to relevant provisions of the Contract Documents;

(b) A succinct statement of the matter in dispute, including Contractor’s position and the basis for that position;

(c) A chronology of relevant events;

(d) The identification and attachment of all supporting documents (see subsection (A), above, on Substantiation); and

(e) Use of a separate page for each issue.

(4) Summary of issues and damages.

(5) The following certification, executed by the Contractor’s authorized representative:

“The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Claim are true and correct. Contractor warrants that this Claim is comprehensive and complete as to the matters in dispute, and agrees that any costs, expenses, or delay claim not included herein are deemed waived. Contractor understands that submission of a Claim which has no basis in fact or which Contractor knows to be false may violate the False Claims Act (Government Code Section 12650 et seq.).”

(C) *Submission Deadlines.*

(1) A Claim must be submitted within 15 days of the date that City notified the Contractor in writing that a request for a change in the Contract Time or Contract Price has been rejected in whole or in part.

(2) With the exception of any dispute regarding the amount of Final Payment, any Claim must be filed on or before the date of Final Payment, or will be deemed waived.

(3) A Claim disputing the amount of Final Payment must be submitted within 15 days of the effective date of Final Payment.

(4) Strict compliance with these Claim submission deadlines is necessary to ensure that any dispute may be mitigated as soon as possible, and to facilitate cost-efficient administration of the Project. *Any Claim that is not submitted within the specified deadlines will be deemed waived by the Contractor.*

7-03. City's Response. City will respond within 45 days of receipt of the Claim with a written statement identifying which portion(s) of the Claim are disputed, unless the 45-day period is extended by mutual agreement of City and the Contractor or as otherwise allowed under Public Contract Code section 9204. However, if City determines that the Claim is not adequately documented, City may first request in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim that City may have against the Claim. If the Contractor fails to submit the additional documentation to City within 15 days of receipt of City's request, the Claim will be deemed waived.

(A) *Additional Information.* If additional information is thereafter required, it may be requested and provided upon mutual agreement of City and Contractor.

(B) *Non-Waiver.* Any failure by City to respond within the times specified above may not be construed as acceptance of the Claim in whole or in part, or as a waiver of any provision of these Contract Documents.

7-04. Meet and Confer. If the Contractor disputes City's written response, or City fails to respond within 45 days of receipt of the Claim with, the Contractor may notify City of the dispute in writing of the sent by registered or certified mail, return receipt requested, and demand an informal conference to meet and confer for settlement of the issues in dispute. If the Contractor fails to dispute City's response in writing within the specified time, the Contractor's Claim will be deemed waived.

(A) *Schedule Meet and Confer.* Upon receipt of the demand to meet and confer, City will schedule the meet and confer conference to be held within 30 days, or later if needed to ensure the mutual availability of each of the individuals that each party requires to represent its interests at the meet and confer conference.

(B) *Location for Meet and Confer.* The meet and confer conference will be scheduled at a location at or near City's principal office.

(C) *Written Statement After Meet and Confer.* Within ten working days after the meet and confer has concluded, City will issue a written statement identifying which portion(s) of the Claim remain in dispute, if any.

(D) *Submission to Mediation.* If the Claim or any portion remains in dispute following the meet and confer conference, within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute, the disputed portion(s) will be submitted for mediation, as set forth below.

7-05. Mediation and Government Code Claims.

(A) *Mediation.* Within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute following the meet and confer, City and Contractor will mutually agree to a mediator, as provided under Public Contract Code section 9204. Mediation will be scheduled to ensure the mutual availability of the selected mediator and all of the individuals that each party requires to represent its interests. The parties will share the costs of mediation equally, except costs incurred by each party for its representation by legal counsel or any other consultants.

(B) *Government Code Claims.*

(1) Timely presentment of a Government Code Claim is a condition precedent to filing any legal action based on or arising from the Contract.

(2) The time for filing a Government Code Claim will be tolled from the time the Contractor submits its written Claim until the time that Claim is denied in whole or in part at the conclusion of the meet and confer process, including any period of time used by the meet and confer process. However, if the Claim is submitted to mediation, the time for filing a Government Code Claim will be tolled until conclusion of the mediation, including any continuations, if the Claim is not fully resolved by mutual agreement of the parties during the mediation or any continuation of the mediation.

7-06. Tort Claims. This Section does not apply to tort claims and nothing in this Section is intended nor will be construed to change the time periods for filing tort-based Government Code Claims.

7-07. Arbitration. It is expressly agreed, under California Code of Civil Procedure Section 1296, that in any arbitration to resolve a dispute relating to this Contract, the arbitrator's award must be supported by law and substantial evidence.

7-08. Damages. The Contractor bears the burden of proving entitlement to and the amount of any claimed damages. The Contractor is not entitled to damages calculated on a total cost basis, but must prove actual damages. The Contractor is not entitled to recovery of any alleged home office overhead. The Eichleay Formula or similar formula may not be used for any recovery under the Contract. The Contractor is not entitled to consequential damages, including home office overhead or any form of overhead not directly incurred at the Worksite; lost profits; loss of productivity; lost opportunity to work on other projects; diminished bonding capacity; increased cost of financing for the Project; extended capital costs; non-availability of labor, material or equipment due to delays; or any other indirect loss arising from the Contract.

7-09. Multiple Claims. In the interest of efficiency, City, acting in its sole discretion, may elect to process multiple Claims concurrently, in which case the applicable procedures above will be based on the total amount of such Claims rather than the amount of each individual Claim. Any such election will not operate to change or waive any other requirements of this Section.

7-10. Other Disputes. The procedures in this Section 7 will apply to any and all disputes or legal actions, in addition to Claims, arising from or related to this Contract, unless and only to the extent that compliance with a procedural requirement is expressly and specifically waived by City.

ATTENTION BIDDERS:

Your bid shall represent the cost of performing all Work described in the Contract Documents including:

Special Provisions and Project Plans,
City Standard Specifications and Details,
State Standard Specifications and Plans, and
all Addenda and Change Orders.

CITY STANDARD SPECIFICATIONS AND DETAILS

(Approved November 2016)

is a separate document that is
available at the City of Pleasanton
Engineering Division,
Civic Center

200 Old Bernal Avenue (physical
location) or

P.O. Box 520 (mailing address)
for a non-refundable cost of \$20.

**Call (925) 931-5650 to request a copy of the
*City Standard Specifications and Details.***

*The City Standard Specifications and Details can be viewed online at the
City's Web Page,*

<https://www.cityofpleasantonca.gov/our-government/public-works/engineering/>

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SPECIAL PROVISIONS

(These Special Provisions are to be used in conjunction with the City Standard Specifications and Standard Details, and the State Standard Specifications and Standard Plans)

All work shall be constructed in accordance with the City of Pleasanton Standard Specifications and Details dated November 2016, and as augmented by these Special Provisions. The Sections noted are those in the Standard Specifications except for the new Section(s) added. Where conflict exists between these documents and existing conditions, request clarification from the Project Engineer.

SECTION 1 GENERAL

1-18 Working Hours

Add:

Between the dates of June 1, 2024 – August 2, 2024, working hours shall be Monday through Friday, 8:00 a.m. to 5:00 p.m., unless otherwise specified by the Engineer.

Harvest Park Middle School and Walnut Grove Elementary School is expected to begin the 2024-2025 school year the week of August 4, 2024. Working hours beginning on August 4, 2024 shall be Monday through Friday, 9:30 a.m. - 2:30 p.m. and 3:30 p.m. - 5:00 p.m., unless otherwise specified by the Engineer. Contractor is required to check www.pleasantonusd.net for each school's website for exact 2024-2025 school year start date.

The contractor shall schedule their work accordingly. No additional compensation shall be allowed for full compliance to this special provision.

It is our intent to work closely with nearby residents and schools to minimize impacts. If any work will impact any school operations, the contractor shall immediately consult with the Engineer and adjust their work schedule as approved by the Engineer in order to minimize impacts to Harvest Park Middle School and Walnut Grove Elementary School. This adjustment of working hours shall not be measured item and no separate payment shall be allowed.

1-18 Progress Schedule

Add:

Harvest Park Middle School is immediately adjacent to the project location. Walnut Grove Middle School is south of the project location. The project location experiences student drop off, pick up, walking, and biking activities which will be impacted by construction activities. Below are important school year dates and dates for construction activities required to be completed. For exact school activity dates, Contractor shall refer to www.pleasantonusd.net.

Milestones/Activities	Dates	Liquidated Damages
Contract Award	April 16, 2024	
Notice to Proceed	No later than May 10, 2024	
Last Day of School – Harvest Park Middle School and Walnut Grove Elementary School	May 31, 2024	
Start Construction Activities	June 3, 2024	
Civil Construction Complete	August 2, 2024	\$1,500.00 per day
First Day of School – Harvest Park Middle School and Walnut Grove Elementary School	Week of August 4, 2024	
Traffic Signal Complete	December 6, 2024	\$1,500.00 per day

SECTION 2 TRAFFIC CONTROL

2-01A Public Convenience and Safety

Add:

Upon completion of each day’s work, the contractor shall be responsible for leaving the work area free of hazards and shall provide all necessary temporary signs, warning devices and barricades at no additional cost to the city. Access to be provided for all adjacent residences, Harvest Park Middle School, Walnut Grove Elementary School and parks during non-construction hours. No additional compensation shall be allowed for full compliance to this special provision.

2-01D Traffic Control Plan

Add:

The Contractor shall provide a detailed traffic control plan for review and comment by the City Traffic Engineer. No work shall commence until the traffic control plans have been reviewed/commented by the City Traffic Engineer. These plans shall be prepared by qualified professionals (Traffic Engineers, Civil Engineers or by Traffic Control Specialists). No additional compensation shall be allowed for full compliance to this special provision.

2-01E Traffic Control Restrictions

Add:

The Contractors shall not block driveways and/or roadway crossing longer than 15 minutes without prior approval. Travel lanes shall be maintained at 10’ wide minimum at all times.

Harvest Park Middle School and Walnut Grove Elementary School is expected to begin the 2024-2025 school year the week of August 4, 2024. For exact starting dates, please refer to the Pleasanton Unified School District website at www.Pleasantonusd.net. Morning school drop off is expected prior to 9:30 a.m. Afternoon school pick up is expected after 2:30 p.m. Construction equipment and vehicles should be clear of the construction area to allow for school drop-off and pick up operations. Safe vehicle and pedestrian access shall be provided at all times, especially during school drop-off and pick up operations.

The contractor shall schedule their work accordingly. No additional compensation shall be allowed for full compliance with this special provision.

SECTION 17. TRAFFIC STRIPES AND PAVEMENT MARKINGS

17-01 General

Replace the entire paragraph to:

Traffic stripes shall be either thermoplastic or raised pavement markers as shown on the Project Plans. Thermoplastic traffic stripes shall be in accordance with Section 84-2, "Traffic Stripes and Pavement Markings," of the State Standard Specifications. Raised pavement markers shall be in accordance with Section 81-3, "Pavement Markers," of the State Standard Specifications. All legends, crosswalks, arrows, and other pavement markings shall be thermoplastic in accordance with Section 84-2, "Traffic Stripes and Pavement Markings," of the State Standard Specifications. Details for traffic stripes and pavement markings shall be in conformance with A20A through A24H of the State Standard Plans.

17-02B Paint

Replace the entire paragraph to:

Paint shall only be used for traffic stripes and pavement markings when shown on the Project Plans and approved by the Engineer. Paint for traffic stripes and pavement markings shall conform to Section 84 of the State Standard Specifications.

17-03A Removal

17-03A.1 Hazardous Materials

Replace the entire Safety and Health Provisions section to:

Safety and Health Provisions

Attention is directed to Section 7-1.02K(6), "Occupational Safety & Health Standards," of the Standard Specifications. Work practices and worker health and safety shall conform to the California Code of Regulations, Title 8, Construction Safety Orders, including Section 1532.1 "Lead."

The Contractor shall furnish the Engineer a written Code of Safe Practices and shall implement an Injury and Illness Prevention Program and a Hazard Communication

Program in conformance with the requirements of Construction Safety Orders, Section 1509 and 1510.

Prior to starting work that disturbs the existing yellow thermoplastic/paint striping, and when revisions to the program are required by Section 1532.1, "Lead," the Contractor shall submit the compliance programs required in subsection (e) (2), "Compliance Program," of Section 1532.1, "Lead," of the Construction Safety Orders to the Engineer in conformance with the provisions in Section 5-1.02, "Contract Components," of the Standard Specifications. The compliance program shall include the data specified in subsections (e) (2) (B) and (e) (2) (C) of Section 1532.1, "Lead." Approval of the compliance programs by the Engineer will not be required. The compliance programs shall be reviewed and signed by a Certified Industrial Hygienist (CIH) who is certified in comprehensive practice by the American Board of Industrial Hygiene (ABIH). Copies of all air monitoring or jobsite inspection reports made by or under the direction of the CIH in conformance with Section 1532.1, "Lead," shall be furnished to the Engineer within 24 hours after monitoring or inspection.

Full compensation for furnishing the Engineer with the submittals and for implementing the programs required by this safety health section shall be considered as included in the contract prices paid for items of work causing the existing yellow thermoplastic/paint striping to be disturbed, and no additional compensation shall be allowed therefore.

17-03C Painted Stripes

Replace the entire paragraph to:

Painted traffic stripes and pavement markings shall be installed in accordance with Section 84-2.03, "Construction," of the State Standard Specifications.

SECTION 23. SIGNALS AND LIGHTING

23-01 Reference Specifications and Standards:

- A. Federal Specifications and Standards:
 - 595a - Federal Standard.
 - NEC - National Electric Code.
 - NEMA - National Electric Manufacturers Association.
- B. State of California (Caltrans) Standards:
 - 1. 2022 version of the Standard Specifications
 - 2. 2022 version of the Standard Plans, except as noted otherwise for certain equipment items
 - 3. 2022 version of the California Manual of Uniform Traffic Control Devices
- C. City of Pleasanton Standard Plans and Specifications
- D. Commercial Standards:
 - UL - Underwriters Laboratories, Inc.

23-02 Equipment List and Drawings: The controller cabinet schematic wiring diagram and intersection sketch shall be combined into one drawing, so that, when the cabinet door is fully open, the drawing is oriented with the intersection.

The CONTRACTOR shall furnish a maintenance manual for all controller units, auxiliary equipment, and vehicle detector sensor units, control units and amplifiers. The maintenance manual and operation manual may be combined into one manual. The maintenance manual or combined maintenance and operation manual shall be submitted at the time the controllers are delivered for testing or, if ordered by the ENGINEER, prior to purchase. The maintenance manual shall include, but need not be limited to, the following items:

- a) Specifications
- b) Design characteristics
- c) General operation theory
- d) Function of all controls
- e) Trouble shooting procedure (diagnostic routine)
- f) Block circuit diagram
- g) Geographical layout of components
- h) Schematic diagrams
- i) List of replaceable component parts with stock numbers

The CONTRACTOR shall submit to the ENGINEER a list of equipment and materials proposed for to be used in accordance with Section 86-1.01C, "Submittals," of the Caltrans Standard Specifications.

The controller cabinet and its components shall be tested and certified by the cabinet manufacturer prior to delivery to the CITY for testing.

23-03 Warranties, Guarantees, and Instruction Sheets: Warranties, guarantees, and instruction sheets shall conform to Section 5, "Control of Work" of the Standard Specifications and these special provisions.

The traffic signal and highway lighting system installed under these special provisions, including all equipment, workmanship, and appurtenances furnished or performed in connection therewith, shall be guaranteed by the CONTRACTOR for a period of not less than one (1) year following the date of acceptance thereof. If any part is found to be defective in materials or workmanship within the one-year period and the said part cannot be repaired satisfactorily on the site, the CONTRACTOR shall immediately provide a replacement part of equal kind and/or type during the repair period. The CONTRACTOR shall be responsible for the removal, handling, repair or replacement, and reinstallation of the part until such time as the traffic signal system is functioning as specified and intended herein. The one-year guarantee on the repaired or replaced parts shall again commence with the date of reassembly of the system.

The CONTRACTOR shall deliver, handle, and store products in accordance with the manufacturer's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, the CONTRACTOR shall provide delivery and installation coordination to

ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

Poles shall be handled in a manner that will preserve the overall appearance and prevent damage to the coating. The use of chains or cables for loading, unloading, shipping or installing is prohibited. Only non-abrasive rope or equivalent nylon belting shall be used. Adequate hold-downs and appropriate blocking shall be utilized for shipping to prevent load movement and damage to the outer coating in transit. No handling shall be allowed until "dry through" condition has been achieved with the coating. Any damage to the poles as a result of mishandling shall be repaired at the CONTRACTOR'S expense.

Products shall be transported by methods to avoid product damage and shall be delivered in undamaged condition in manufacturer's dry, unopened containers or packaging.

Products shall be stored in accordance with the manufacturer's written instructions, with seals and labels intact and legible. Environmentally-sensitive products shall be stored in weather-tight enclosures, and temperature and humidity levels shall be maintained consistent with the manufacturer's written instructions.

Fabricated products stored outside shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering; adequate ventilation shall be provided to avoid condensation.

Loose granular materials shall be stored on solid surfaces in a self-drained area and shall be prevented from mixing with foreign matter.

Stored products shall be subject to periodic inspection on a scheduled basis.

23-04 Order of Work: Order of work shall conform to the provisions in these Special Provisions.

The first order of work shall be to place the order for the traffic signal equipment. **The CONTRACTOR shall furnish the ENGINEER with a statement from the vendor that the order for said equipment has been received and accepted by said vendor together with a guaranteed delivery date. This documentation may be used by the engineer in the event of a time extension request by the CONTRACTOR.**

The CONTRACTOR shall arrange to have a signal technician, qualified to work on the controller cabinet and controller and employed by the cabinet and controller manufacturer(s) or their representative, present at the time the traffic signal is turned on, when signal interconnect cable is terminated, when emergency vehicle preemption system is activated, when a new signal phase is activated, or when any modifications are required to the controller cabinet, except for the termination of the field wires.

When microwave detection is used, the CONTRACTOR shall arrange to have a signal technician, qualified to work on the microwave detection and employed by the microwave detection manufacturer or their representative, present at the time the traffic signal is turned on, or when any video detection is activated on an existing signal.

23-05 Control of Work: The CONTRACTOR shall be responsible for locating the corners of each new detector loop. The CONTRACTOR shall mark the detector loops and the ENGINEER thereof shall approve the locations before pavement is cut. The pavement shall be cut with an abrasive type saw. The saw cut depth shall be of uniform depth throughout.

The CONTRACTOR shall be responsible for locating and marking the positions of all new signal standards and pull boxes. The ENGINEER may assist the CONTRACTOR in locating the above items. The ENGINEER shall approve the locations before any work on the foundations is performed. The CONTRACTOR shall give the ENGINEER a minimum of 2 working days notice to verify locations.

23-06 Foundations: Portland cement concrete for cabinet pads and foundations shall conform to Section 90-2, "Minor Concrete," of the latest Caltrans Standard Specifications. Foundations for traffic signal poles shall conform to Section 56-3.01C(2)(b), "Cast-In-Drilled Hole Concrete Pile Foundations," of the latest Caltrans Standard Specifications.

23-07 Standards, Steel Pedestals and Posts: The sign-mounting hardware, as shown on Detail U of Standard Plan ES-7N, shall be installed at the locations shown on the plans.

All Traffic Signal standards and posts shall be galvanized steel unless otherwise noted on the project plans. Locations of Traffic Signal and street lighting standards and posts shall be marked in the field with marking chalk for review by the ENGINEER before beginning any installation.

23-08 Conduit: Conduit shall be in accordance with Section 86-1.02B, "Conduit and Accessories," of the latest Caltrans Standard Specifications, and these Special Provisions. Conduit that is installed underground shall be rigid, nonmetallic type, PVC Schedule 40 or HDPE schedule 80. Conduit installed in a signal pole or cabinet foundation and between the foundation and its adjacent pull box shall be Type 1 rigid metallic.

Conduit installation shall be in accordance with Section 87-1.03B, "Conduit Installation," of the latest Caltrans Standard Specifications, and these Special Provisions. All conduit bends greater than 44 degrees shall be factory bends and shall have a minimum radius of 18 inches. Where factory bends are not used conduit shall be bent without crimping or flattening using the longest radius possible. Bending of non-metallic conduit shall be by methods recommended by the conduit manufacturer and with equipment approved for that purpose.

Conduit and fittings to be installed underground shall be rigid non-metallic type. Conduits designated for signal interconnect shall be installed satisfying the requirements for both twisted pair and fiber optic cables use (e.g., sweeps/bends for fiber optic should be used).

The size of conduit used shall be as shown on the Drawings, but in no case shall conduit be less than 2 inches in diameter. In addition, the CONTRACTOR may, at his option and expense, use conduit of larger size than that shown or specified, provided the larger size is

used for the entire length of the run from pull box to pull box. Reducing couplings will not be allowed.

When a standard coupling cannot be used for coupling metal type conduit, a UL-listed threaded union coupling, concrete-tight split coupling, or concrete-tight set screw coupling shall be used.

All fiber optic and signal interconnect pull boxes shall employ a maximum of 30-degree conduit sweeps. Conduit shall be rigid, nonmetallic type, PVC schedule 40 or HDPE schedule 80. All new fiber optic or signal interconnect conduit shall be a minimum of 3 inches unless otherwise noted in the project plans. Conduit shall be installed so that a straight cable pulling path may be maintained.

All conduits shall enter the controller cabinet foundation at the front and less than 10 inches from the cabinet door opening.

Insulated bonding bushings will be required on metal conduit.

When rigid, nonmetallic conduit is placed in a trench, the trench shall be back filled with minor concrete having not less than 376 pounds of cement per cubic yard to not less than 4 inches above the conduit before additional back fill material is placed.

Conduit shall be laid to a depth of not less than 18 inches below grade in Portland cement concrete sidewalk areas and curbed paved median areas, and not less than 30 inches below finished grade in all other areas. Conduit may lie on top of the pavement within new curbed medians being constructed on top of the existing pavement.

Conduit runs shown on the plans to be located behind curbs may be installed in the street, within three feet of and parallel to the curb, by trenching, as provided below, on approval of the City Engineer. All pull boxes shall be located behind the curb or at the locations shown on the plans.

After conductors have been installed, the ends of conduits terminating in pull boxes and controller cabinets shall be sealed with an approved type of sealing compound.

Damage to Pavement Outside of Trench Limits: If damage such as spalling or cracking occurs to pavement outside trench limits as a result of the CONTRACTOR'S operations, the CONTRACTOR shall remove the damaged pavement as directed and replace as a part of final paving operations at the CONTRACTORS expense.

Directional Boring: When approved by the City Engineer, conduit may be placed under existing pavement by horizontal directional drilling (Directional Bore) method. Pavement shall not be disturbed without permission from the ENGINEER. Adherence to the specifications contained herein, or the ENGINEER'S approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the CONTRACTOR of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.

In the event obstructions are encountered, upon approval of the ENGINEER, small potholes may be cut in the pavement to locate or remove obstructions. All potholes shall be repaired per these specifications. Boring pits shall be kept 2 feet clear of the edge of any type of pavement wherever possible. In addition, boring pits shall be kept 2 feet clear of any pedestrian or bicycle facilities. Unless directed by the ENGINEER, pedestrian and bicycle facilities shall remain open at all times. All boring pits, upon end of work day, shall be covered and work areas properly coned off to warn and prohibit potential pedestrian and/or vehicular traffic to the satisfaction of the ENGINEER.

Excessive use of water, such that pavement might be undermined or subgrade softened, will not be permitted.

Conduit to be placed as part of the completed work shall not be used for drilling or jacking. Type 2 and Type 3 conduit may be installed under existing pavement if a hole larger than the conduit is pre-drilled and the conduit installed by hand.

Conduit to be placed beneath railroad tracks shall comply with the following: The conduit shall be either Type 1 or 2, 1 1/2 inch minimum, and shall be placed to a minimum depth of 3 feet below bottom of tie. The near side of each conduit jacking pit shall be constructed not less than 13 feet from the centerline of track. When the jacking pit is to be left overnight, the pit shall be covered with substantial planking.

WORK PLAN: Prior to beginning work, the CONTRACTOR must submit to the ENGINEER a general work plan outlining the procedure and schedule to be used to execute the project. Plan should document the thoughtful planning required to successfully complete the project.

EQUIPMENT: CONTRACTOR will submit specifications on directional boring equipment to be used to ensure that the equipment will be adequate to complete the project.

MATERIAL: Specifications on material to be used shall be submitted to the ENGINEER. Material shall include the pipe, fittings and any other item which is to be an installed component of the project.

PERSONNEL: Documentation of training and relevant experience of personnel shall be submitted.

The ENGINEER must be notified 48 hours in advance of starting work. The Directional Bore shall not begin until the ENGINEER is present at the job site and agrees that proper preparations for the operation have been made. The ENGINEER'S approval for beginning the installation shall in no way relieve the CONTRACTOR of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract.

All personnel shall be fully trained in their respective duties as part of the directional boring crew and in safety. Training shall be provided specific to the project if any potential hazards may be encountered which have not already been included in personnel's training.

Upon request from the ENGINEER CONTRACTOR shall photograph or video tape entire work area, including entry and exit points, prior to the beginning of work and after work is completed.

Work site as indicated on drawings, within right-of-way, shall be graded or filled if needed to provide a level working area. No alterations beyond what is required for operations are to be made. CONTRACTOR shall confine all activities to designated work areas.

The Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If CONTRACTOR is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.

CONTRACTOR shall place silt fence between all boring operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or boring fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. CONTRACTOR shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200' of any water-body or wetland.

CONTRACTOR shall notify all companies with underground utilities in the work area using the Underground Service Alert (USA) hotline at (800) 227-2600 to obtain utility locations. Once utilities have been located CONTRACTOR shall physically identify the exact location of the utilities by potholing to determine the actual location and path of any underground utilities which might be within 5 feet of the bore path. CONTRACTOR shall not commence boring operations until the locations of all underground utilities within the work area have been verified.

CONTRACTOR shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to ENGINEER.

Pipe shall be connected together in one length prior to pull-back operations, if space permits. Steel pipe welds will be X-rayed prior to being placed in bore hole. Pipe will be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.

Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100'. In the event that pilot does deviate from bore path more than 5% of depth in 100', CONTRACTOR will notify ENGINEER and ENGINEER may require CONTRACTOR to pull-back and re-drill from the location along bore path before the deviation.

In the event that a boring fluid fracture, inadvertent returns or returns loss occurs during pilot hole boring operations, CONTRACTOR shall cease boring, wait at least 30 minutes, inject a quantity of boring fluid with a viscosity exceeding 120 seconds as measured by a Marsh funnel and then wait another 30 minutes. If mud fracture or returns loss continues,

CONTRACTOR will cease operations and notify ENGINEER. ENGINEER and CONTRACTOR will discuss additional options and work will then proceed accordingly.

Upon successful completion of pilot hole, CONTRACTOR will ream bore hole to a minimum of 25% greater than outside diameter of pipe using the appropriate tools. CONTRACTOR will not attempt to ream at one time more than the boring equipment and mud system are designed to safely handle.

After successfully reaming bore hole to the required diameter, CONTRACTOR will pull the pipe through the bore hole. In front of the pipe will be a swivel. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into bore hole. During pull-back operations CONTRACTOR will not apply more than the maximum safe pipe pull pressure at any time. In the event that pipe becomes stuck, CONTRACTOR will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, CONTRACTOR will notify ENGINEER. ENGINEER and CONTRACTOR will discuss options and then work will proceed accordingly.

Following boring operations, CONTRACTOR will de-mobilize equipment and restore the worksite to original condition. All excavations will be backfilled and compacted to 95% of original density. Landscaping will be restored to original.

CONTRACTOR shall maintain a daily project log of boring operations and a guidance system log with a copy given to ENGINEER at completion of project. As-built drawings shall be certified as to accuracy by CONTRACTOR.

23-09 Pull Boxes: Grout in bottom of pull boxes will not be required; however, the depth of the crushed rock sump shall be increased to a minimum depth of 12 inches.

Pull boxes shall conform to the provisions in Section 86-1.02C, "Pull Boxes," of the Caltrans Standard Specifications and this Section.

Pull box size shall be No. 5 for traffic signals, No. 3-1/2 for street lights, No. 6 for homeruns, No. 6E for fiber optic and signal interconnect cable, and 30"x48"X20" "double lid" for fiber optic splice enclosures unless otherwise shown on the Drawings. The cover shall be polymer concrete. Where pull boxes are to be placed in areas subject to traffic loads, a steel or cast iron cover shall be used in lieu of the concrete cover.

Maximum pull box spacing shall be 100' for traffic signals, 200' for street lights and hardwire signal interconnect, and 800' for fiber optic communications unless otherwise noted on the plans.

Interconnect pull boxes shall have lids embossed with "INTERCONNECT," street light pull box lids with "STREET LIGHTING," and traffic signal pull boxes with "TRAFFIC SIGNAL." All 30"x48" double lid pull boxes shall read "CITY OF PLEASANTON FIBER OPTIC".

All 6E pull boxes shall employ a 10-inch extension. A minimum of 18 inches of space shall be maintained between the lid of the 6E pull box and material at the bottom of the box.

Recesses for suspension of ballast will not be required.

All conduits shall enter the pull box from the bottom. Side access will not be permitted unless otherwise directed by the ENGINEER.

Where the sump of an existing pull box is disturbed by the CONTRACTOR'S operations, the sump shall be reconstructed and, if the sump was grouted, the old grout shall be removed and new grout placed at the CONTRACTOR'S expense.

23-10 Conductors and Wiring: At least 10 feet of slack shall be provided in the interconnect pull boxes and the pull box nearest each signal standard, for those conductors terminating in that standard; and 5 feet of slack shall be provided in each conductor in all other pull boxes. The wire bundle entering the controller cabinet shall be neatly coiled in the bottom of the cabinet in order to obtain as much slack as possible. All No. 14 conductors shall be **SOLID** copper wire.

Splices shall be insulated by "Method B."

Conductors shall conform to the provisions in Section 86-1.02F, "Conductors and Cables," of the Standard Specifications.

Traffic signal conductor splicing, where permitted by subparagraph 5 of the first paragraph of Section 87-1.03H, "Conductor and Cables Splices," of the Standard Specifications, shall be spliced using a Type "C" splice.

Conductors shall not be pulled into conduits until the pull boxes have been set to grade, crushed rock sumps have been installed, and conduits have been bonded and grounded. All pull boxes shall be inspected and approved prior to pulling any conductors. Conductors shall not be pulled into conduits unless the ENGINEER is present to observe the operation. The ends of all unused cables shall be sealed. The ends of all cables shall be sealed prior to being installed into the conduits.

All phase conductors and detector cables, including existing phase detectors and conductor labels, shall be identified with the new phase numbers, as shown on the plans. Identification bands shall be T & B Ty-Rap Cable Ties; No. TY 553 M. The flags on the bands shall be marked with a Ty-Rap marking pen; No. WT 163 M-1 (Black), or approved equal. No other method of labeling will be acceptable. All phase conductors and detector cables shall be labeled by phase designations in the pull box nearest their termination, and in the controller cabinet. Phase conductors shall be labeled with phase designation. Detector cables shall be labeled with phase and loop number. Lighting conductors (street or sign) shall be labeled as appropriate. Spare conductors need not be labeled. A 1/4-inch pull rope shall be installed into all new conduits.

Interconnect Cable (Copper)

Splicing of copper interconnect cable shall be done only within controller cabinets on terminal blocks furnished and installed by the controller cabinet supplier. Terminal blocks shall be per City standard. The CONTRACTOR shall be responsible for terminating interconnect cable in the cabinet per direction of the engineering. All the splices shall be done in accordance with the recommendation of the controller supplier and to the satisfaction of City of Pleasanton Traffic Engineering.

Temporary interconnect splicing shall be allowed during construction for a maximum period of 60 days. Temporary splices of interconnect shall be insulated with heat-shrink tubing of the appropriate size and shall overlap the conductor insulation at least 0.5 inches. The overall cable splice shall be covered with heat-shrink tubing, with at least 1 1/2 inch of overlap of the cable jacket. Any alternate temporary splice method shall be approved by the ENGINEER.

Where specified on the plans, Copper cable, six (6) pairs, shall be installed between signal control cabinet telemetry panel and splice cabinet terminal block, as directed by City of Pleasanton Traffic Engineering.

The CONTRACTOR shall provide and install, as per plans, No. 18 or 19 gauge twisted, single-pair conductors, shielded, IPCEA, Type A, or equal, suitable for telemetry's, communicators, or control usage with 300-volt minimum rating within conduit runs which interconnect the traffic signal controllers. Conductor color code shall conform to the following:

White/Blue, White/Orange, White/Green, White/Brown, White/Gray, and
Red/Blue

CONTRACTOR may **NOT** use the Signal Interconnect Cable that is called out in Section 86-1.02F(3)(d)(v) of the State of California Standard Specifications for this cable.

The CONTRACTOR shall be responsible for maintaining existing interconnect during construction. Any interruption of interconnectivity during the construction process due to CONTRACTOR activity shall be resolved by the CONTRACTOR immediately and at the CONTRACTOR'S expense.

Interconnect Cable (Fiber)

Fiber Cable shall be all dielectric, loose tube with 12 or 24 single strand fibers per loose tube, as indicated on the plans. No ribbon fiber shall be utilized. Fiber optic cable shall be single mode. Where available, within contract, water protection tape rather than gel filling shall be utilized. Fiber and fiber cable construction shall adhere to RUS PE-90 and Bellcore GR-20. Cable shall adhere to standard industry fiber and loose tube color coding, as defined by RUS PE-90 and Bellcore GR-20. The Cable shall be constructed to provide a minimum of 30 years useful life when installed in conduit. Fiber shall be 8.3 microns (normal) diameter with mode field diameters for depressed cladding being 8.8 microns ± 0.5 microns at 1310 nm and 10.0 ± 1.0 microns at 1550 nm; for matched cladding mode field shall be 9.3 microns ± 0.5 microns and 10.5 ± 1.0 microns for respective wave lengths. (Cladding types shall not be mixed during fiber deployment). The fiber shall be protected with a cladding with diameter of 125.0 ± 1.0 microns.

The fiber within the cable shall have an attenuation of no greater than 0.35 dB/Km (0.56 dB/Mile) at 1310 nm and 0.25 dB/Km (0.40 dB/Mile) at 1550 nm. Water peak attenuation 1385 nm (± 3 nm) shall not exceed 2.5 dB/Km (4.02 dB/Mile). The attenuation of the fiber shall be distributed uniformly throughout its length such that there are no localized discontinuities in excess of 0.1dB at either 1310 nm or 1550 nm as determined by TIA 455-59 Fiber Optic Test Procedures (FOTP).

The Fibers shall have a maximum dispersion of 2.8 picoseconds/nanometer – km (ps/nm-km) over an optical wavelength range of 1290 to 1330 nm and a maximum value of zero dispersion slope of 0.093 ps/(km-nm²). Dispersion tests are in accordance with TIA 455-17S FOTP. The manufacturers shall have tested for dispersion as required by Bellcore GR – 20 or RUS PE-90. New factory tests are required only if the fiber has not been pre-tested and qualified to standards.

The Construction of the cable shall follow referenced standards for construction of dielectric, loose tube fiber cable with the exception that water-blocking tape is acceptable and preferred. The dielectric strength member shall support a tensile force of 2700 Newtons during cable installation and shall protect fiber attenuation change during installation allowing no greater than 0.31 dB/Km (0.50 dB/Mile) increase over manufacturer’s specified fiber attenuation.

The cable shall include a ripcord under the sheath to support easy removal of the sheaths. The sheaths shall be marked in accordance with National Electric Safety Code 350 G. The Cable Sheath shall also be permanently marked with the manufacturer’s name, type cable and “Fiber Optic Cable.” There shall also be sequential length markers that are accurate within 1%. Marking size shall be such as to be easily read by a technician. The CONTRACTOR shall submit cut sheets for cable approval to the Construction Manager identifying the marking size, repetition and symbol per National Electrical Safety Code (i.e., Telephone Symbol).

Cable diameter for up to 72 fibers should be approximately 13mm. Cable shall be rated for an operating temperature of -40°C to +75°C. The cable shall contain no metal and shall conform to the National Electric Code’s definition of fiber.

Tracer Wires shall be included with all fiber optic cable installation projects. The tracer wires shall be installed in such a way so that underground fiber optic utilities can be identified and located in the future by maintenance staff.

Cable shall be shipped from the factory with protective wrapping and with sealed ends. The cable shall include a waterproof tag with the results of factory OTDR attenuation test as well as:

- Contract Number/Identification
- Manufacturer’s Name/Address
- Manufacturer’s Part Number
- Type of Cable
- Number of Loose Tubes and Fiber

Beginning and Ending Length Marks
Reel Number
Ship Date
Weight of Cable and Reel

Cable shall be of a continuous length on the reels. The Cable runs are as shown on plans. Slack cable requirements shall be considered by the CONTRACTOR, based on normal industry installation practices, in computing required cable length.

All traffic signal controller cabinets shall employ a fiber termination panel or tray for fiber optic termination with SC (female) connectors. Each jumper cable shall be 900 microns and terminated with an SC (male) connector having integral strain relief.

The fiber optic patch cable shall comply with the fiber cable special provisions of this document. The length of the patch cable shall be 2 meters (minimum). The patch cable shall employ SC (male) connectors, simplex and single mode. The jumper cable will interface with the SC (female) connectors on the optical transceivers installed in field equipment cabinets.

The CONTRACTOR is responsible for interfacing the SC (Male) connectors to test optical-to-electrical communications performance between the patch cables, other installation locations, and the Traffic Operations Center (if applicable). The CONTRACTOR is responsible for correct splicing of the drop cable onto the backbone cable in accordance with splice tables provided by the City. Only fusion splicing method shall be accepted. CONTRACTOR is responsible for point-to-point continuity in accordance with splice tables and assuring point-to-point optical path loss (attenuation) is within specifications. Fiber drop cables and patch cables shall be marked R-1, R-2, T-1, T-2 or SPARE.

The CONTRACTOR shall prepare and submit Record Drawings of each fiber color, splices, and unconnected fibers. Record drawings shall be labeled to indicate the splice closure location.

All fiber optic splices shall be completed using the fusion splice method. All splices shall be tested, and the results of those tests shall be provided to the CITY by the CONTRACTOR.

23-11 Functional Testing: The functional test for each system shall consist of not less than 14 days. If unsatisfactory performance of the system develops, the conditions shall be corrected and the test shall be repeated until the 14 days of continuous, satisfactory operation is obtained.

The traffic signal controller shall be delivered to the City's Traffic Engineering Department by no less than 21 calendar days before the traffic signal is activated. Traffic engineering will prepare preliminary signal timing and test the traffic signal controller prior to releasing the controller to the CONTRACTOR. Once the controller is released to the CONTRACTOR the CONTRACTOR assumes ownership of the controller. Any lost,

stolen, misplaced traffic signal controller shall be replaced by the CONTRACTOR at their expense.

The City shall have the right to request a sample of any materials used for the construction of the traffic signal, including, but not limited to: controller and components, signal heads, poles, conductor wire, or any other item deemed necessary to be tested or inspected for compliance to the specifications. CONTRACTOR shall deliver those materials requested within 21 calendar days of request. If the City does not receive the requested materials within the time specified, those materials requested shall be deemed to be unsatisfactory, and rejected.

If the CONTRACTOR is notified of the need for repair of equipment being tested, the required repairs shall commence within five (5) working days of the time of notification by the ENGINEER. The CONTRACTOR shall be responsible for all of the costs involved in the repair of the equipment, including re-testing if necessary.

If any of the equipment is rejected for failure to comply with the requirements of these Specifications, the CONTRACTOR shall be responsible for all of the costs involved in re-testing the equipment after it has been rejected. Deductions to cover the cost of such re-testing will be made from any monies due, or which may become due, the CONTRACTOR.

If control equipment fails during the time period between turn on and final acceptance and the CONTRACTOR is unavailable to immediately respond to repair or replace the failed equipment, the ENGINEER may call in City contract maintenance forces and bill the CONTRACTOR reasonable costs to restore the intersection to designed operation.

The manufacturer's warranty period for furnished equipment shall not commence until the equipment has been installed at the project sites and have been placed in operation by a factory representative, and the project accepted.

In order to properly conduct functional testing of the controller assembly, schematic drawings specific for the cabinet to be used in this specific project shall be submitted with the cabinet. Traffic signal construction plan shall also be submitted. Drawings shall indicate the intersection name and phasing. Absence of the required drawings could result in the rejection of the entire controller assembly. Cabinet testing will not proceed until the required drawings are submitted. The functional test for each signal system shall consist of not less than 14 days. If unsatisfactory performance of the system develops, the conditions shall be corrected and the test shall be repeated until the 14 days of continuous satisfactory operations is obtained.

Before scheduling the traffic signal "Turn On," the CONTRACTOR is required to coordinate a pre-testing to be conducted by the City or their designee. Seventy-two (72) hours minimum advance notice is required to schedule this pre-test. During the pre-test, the City's traffic signal maintenance staff will determine if all components of the traffic signal system are operational as designed. If deficiencies are found, the CONTRACTOR shall make the necessary corrections and schedule a follow up pre-testing. Only after all the deficiencies found are corrected can the CONTRACTOR schedule the signal "Turn

On.” The CONTRACTOR shall provide a minimum of forty-eight (48)-hour advance notice to schedule the “Turn On”.

All vehicle signal and pedestrian signal heads shall be bagged in their entirety with a burlap sack once the signal heads are installed prior to turn-on. Alternate methods of signal head bagging must be approved by the ENGINEER. The CONTRACTOR shall remove the burlap sacks on the day of turn-on. At that time the CONTRACTOR shall place temporary “STOP” signs in all directions of travel per direction of the ENGINEER. The signs may be removed once the signal is placed in “flashing red” operation. The signs shall remain on site until the signal has been activated and deemed functional by the ENGINEER.

The CONTRACTOR shall require the following product vendors and/or contractors to attend the traffic signal turn on date:

- Traffic Signal Controller Cabinet
- Traffic Signal Controller
- Vehicle Video Detection System
- The City’s Designated Traffic Signal Maintenance contractor

The CONTRACTOR shall not be required to pay for the City’s Maintenance contractor time on-site.

The ENGINEER may waive a vendor’s attendance requirement prior to turn on ONLY through written notice. Electronic notice (email) shall be an acceptable method of notice.

The CONTRACTOR shall schedule a time to activate the traffic signal. Traffic signal turn-on may be scheduled on a non-holiday week Tuesday, Wednesday, or Thursday before 1PM. For the purposes of these specifications “TURN ON” denotes that the signal is physically ready for activation. The ENGINEER shall perform a final pre- turn on system check immediately prior to If the signal is not ready for activation on the appointed time the ENGINEER, at their discretion, may cancel the turn on. The CONTRACTOR shall be responsible for rescheduling the turn-on and is responsible for any additional costs resulting from the rescheduled turn-on.

23-12 Service and UPS System: The traffic signal service equipment cabinet shall be a Milbank (CP3A C-Size BBU) Type III with Alpha FXM1100-HP 120/240-volt/Battery backup combo and shall be powder coated to match the controller cabinet color (#14109 Federal Standard 595B Color or approved equal) unless otherwise noted on plans. Service equipment enclosures shall conform to the provisions in Section 86-1.02P(2), "Service Equipment Enclosures," of the Caltrans Standard Specifications and this Section except that the CONTRACTOR shall pay all costs and fees required by the utility company for the connection of both temporary and permanent service.

The service cabinet shall house both PG&E equipment and BBS equipment, including batteries.

The traffic signal service enclosure shall meet the requirements of PG&E and shall conform to Section 86-1.02P(2), "Service Equipment Enclosures," of the Caltrans Standard Specifications. The enclosure shall be factory pre-wired and tested to meet NEMA 3R

standards. A copy of the wiring diagram for the integrated system shall be enclosed in plastic and mounted inside the enclosure. Name plates shall be provided for each control component. The name plates shall be phenolic, black background with white lettering except the main breaker, which shall be red with white lettering. All name plates shall be fastened in the enclosure by screws. I.D. numerals shall be used to show the address for the meter below the meter window or the front of the enclosure.

The traffic signal service enclosure shall have a separate disconnect for the traffic signal, safety lighting, and sign lighting circuits. Separate disconnects shall be provided for any other separate circuit, such as street lighting or irrigation systems, when shown on the plans. The top half of the service cabinet shall be equipped with 19" rack mountable rails.

A traffic signal equipped with fully functional BBS shall be wired to operate for a period of at least two hours and run an additional two hours (minimum) on Red Flash only. The UPS/BBS shall have a minimum Power Rating of 1.1 KVA (1100 Watts).

General Specifications

Input / Output Voltage (VAC) nominal	120
Input / Output Frequency (Hz) nominal	60
Input Current (A)	12.0
Input voltage Variation	-23% to +17%
Output Power (VA)	1100
Active Output Power (watts)	1100
Voltage Waveform	sine
Battery Run Time	
Power required 1000 watts for 3 hours	
Transfer time (ms)	2-4
Operating Temperature	-35C to +55 C
Lightning / Surge Protection:	
Passes ANSI/IEEE C.62.41/C.62.45 Cat A & B	

Standard Features

- Generator Hookup to service cabinet
- Transient voltage protection from damaging line spikes
- Low harmonic AC sine wave output
- Intelligent Boost Operation for brownout protection available
- Noise suppression, FCC Class A
- Multiple mounting configurations
- UL / CSA listed

Power Conditioning

Intelligent Boost Operation (optional) increases output voltage 12% if input voltage falls between 17% to -23% of nominal.

Communication & Alarms

- Form C dry relay contacts close on low battery
- RS-232 status port
- LED indicator for online, on battery, low battery, overload & fault

Ethernet Port

23-13 Traffic Signal Controller: The CONTRACTOR shall furnish a new signal controller assembly as shown on the plans, and delivery of the controller shall be to the City's Traffic Engineering Division for testing. The controller shall be a Trafficware Shelf Mount Commander ATC NT2 controller with the latest version of the SCOUT ATC software and capable of providing the phasing shown on the plans. It shall be possible to interconnect and fully interface the controller to the City's Central Traffic Signal Master Computer. The hardware necessary to provide communication with the Central Traffic Signal Master Computer shall be an integral part of the control cabinet assembly.

All delivered material and equipment shall be in accordance with Section 86 of the State of California Department of Transportation Standard specifications and these special provisions.

The controller assembly will be connected to the Central Traffic Signal Master Computer and tested for a minimum of 10 working days. Equipment that fails this test operation shall be immediately repaired or replaced by the CONTRACTOR. After completion of tests, the CONTRACTOR shall install the controller cabinet as shown on the plans.

23-14 Controller Assembly:

This specification sets forth the minimum requirements for a TS-2 Type 1/Type 2 controller assemblies with a 16-position load bay, wired for eight phases and fully operational with all the components and plug-ins, malfunction management unit, bus interface unit, cabinet power supply, load switches, flashers and detectors including the controller unit. The controller assembly shall meet all applicable sections of the NEMA TS-2 1998 Standards and Caltrans Standard Specifications and Standard Plans.

23-15 Controller Cabinet: New controller cabinets shall conform to Section 86-1.02Q(2), "Controller Cabinet," of the State Standard Specifications and these Special Provisions.

Controller cabinet foundations shall extend 4 inches above grade. The cabinet shall be a Type "Stretch P" cabinet and fabricated from aluminum sheet. The interior of the cabinet shall be painted powder coat white. The cabinet door shall be fitted with a No. 2 Corbin lock number 1548-1 or exact equivalent, and stainless steel handle with a 16mm (minimum) diameter shaft and three-point latch. The lock and latch design shall not allow the handle to open the cabinet unless the lock is engaged. A locking auxiliary police door shall be included to allow limited controller function access to switch the traffic controller between normal and flash operation. The police door-in-door shall be provided with a treasury type lock Corbin No. R357SGS or exact equivalent. The cabinet shall be "plug and play" ready with a Trafficware Shelf Mount Commander ATC NT2 controller with the latest version of the SCOUT ATC software. The cabinet layout shall be configured to provide adequate shelf space for all shelf-mounted required equipment (e.g., EVP rack, power supply, detector racks, BIU, video detection equipment, MMU, Modem/Switch, and Controller). At least 72 hours before the scheduled "signal turn-on", the controller assemblies including video detection system, shall be fully wired, programmed, tested, and organized with no unnecessary loose cables or conductors. The

wiring in the cabinet shall be tie-wrapped in a neat/orderly fashion to the satisfaction of the City of Pleasanton.

The main door hinge shall be a one-piece, continuous piano hinge with a stainless steel pin running the entire length of the door. The hinge is attached in such a manner that no rivets or bolts are exposed.

The main door and police door-in-door shall close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.250 inches thick by 1.00 inches wide. The gasket material for the police door shall be a minimum of 0.250 inches thick by 0.500 inches wide. The gaskets shall be permanently bonded to the cabinet.

The cabinet flange for securing the anchor bolts will not protrude outward from the bottom of the cabinet.

The cabinet and doors shall be powder coated to match the service cabinet color (#14109 Federal Standard 595B Color or approved equal) unless otherwise noted on plans. The cabinet shall be constructed and wired to provide full TS-2 NEMA capability with both a Type 1 and Type 2 controller, 16 phase, 64 detector channel operation programmable through the controller, and shall include load switches and other equipment necessary to provide this phasing.

Facing the Cabinet door, the cabinet shall open on the right hand side. The power distribution panel shall be mounted on the inside right hand side. On the left hand side of the cabinet, 48 channels of loop detection will be landed. Interconnect terminal blocks shall be a minimum of 2 each 12 positions light duty terminal blocks rated for 5 amp and shall be provided with No. 6 x 3-mm {1/8 inches} binder head screws.

Cabinet shall be wired for two 762 Opticom Discriminators (or approved equal) to operate in the first detector rack. The cabinet shall be "plug and play" ready for a Trafficware Shelf Mount Commander ATC NT2 controller.

The cabinet shall be tested by the cabinet manufacturer prior to delivery on site. Any cabinet deficiencies identified by the ENGINEER shall be resolved by the CONTRACTOR at their expense prior to turn-on.

The "on-off" switch for the cabinet lighting fixtures shall be both a toggle switch mounted on the inside control panel, and a door-activated switch that turns the light on when the door is open and off when the door is closed. Cabinet shall be wired for manual control operation.

23-16 Auxiliary Equipment: Auxiliary equipment shall conform to Section 86 of the State Standard Specifications and these Special Provisions.

The load-switching device shall have indicator lamps for both the inputs and outputs of the device.

The MMU (Malfunction Management Unit) monitoring device shall be installed external to and electrically independent of each controller unit. MMU shall meet or exceed all NEMA TS2 specifications along with the following:

- NEMA TS1 compatible (Type 12 operation), Advanced diagnostic features isolate problems, Data logging capability allows viewing and recording of improper voltages; Event logging provides a detailed, time-stamped record of time change, MMU reset, MMU configuration changes, prior failures, AC line voltages, and signal sequence characteristics; Front panel shall have 24-mounted DIP switches allow for easy configuration of Field Check/Dual Enables and selection of options; 77 front paneled mounted LED's provide a clear, concise, real-time indication of the status of all channel inputs and fault conditions,
- Front panel mounted RJ-45 Ethernet Port facilitates computer interface; Also extended NEMA TS2 features including Advanced Hardware Architecture, Dual Indication Monitoring, GY-Dual Indication Monitoring, Field Check Monitoring, External Watchdog Monitoring, Program Card Absent Monitoring, Display LED Test, 12 Volt DC Monitoring, Modified CVM Latch.

Ethernet Over Fiber Switch

When Ethernet over fiber optic communication is being used a RuggedCom RS900 series managed Ethernet switch shall be required unless otherwise noted on the plans. Model to be approved by City of Pleasanton Traffic Engineering.

Ethernet Over Copper Switch

When Ethernet over Signal Interconnect Cable is used for communications an Actelis MetaLight Ethernet over Copper Bridge shall be required unless otherwise noted on the plans. Model to be approved by City of Pleasanton Traffic Engineering.

Closed Circuit Television Camera with Pan/Tilt/Zoom Control

Not used.

23-17 Vehicle Signal Faces and Signal Heads: Vehicle signal faces and signal heads shall be in conformance with Section 86-1.02R, "Signal Heads" of the Caltrans Standard Specifications and as shown on the Drawings.

Signal section housing shall be metal type and shall have 12-inch sections. Signal housings and mounting hardware shall be painted black and electrically powder coated. The backplates for mast arm mounted heads shall be ventilated. All backplates shall be such that they can be removed and reinstalled without requiring the removal of the traffic signals.

The second sentence in the third paragraph in Section 86-1.02R(3), "Backplates," of the Caltrans Standard Specifications is amended to read:

Sections shall be joined using 1) aluminum rivets and washers painted or permanently colored to match the backplate, or 2) No. 10 machine screws with washer, lock washer and nut, painted to match the backplate.

All vehicle signals shall be Dialight ITE Compliant “X” and “XL” 12-inch LED indications or approved equal and furnished by the CONTRACTOR. This specification LED modules to be used in place of the incandescent lamp, reflector, socket, gasket, and lens assembly of the vehicle signal sections. Vehicle type LED modules shall fit in all standard, incandescent vehicle traffic signal housings. Each module shall also incorporate a printed circuit board inclusive of all of the LEDs and required circuit components, 36 inch 16 AWG wire leads with strain relief and spade terminals, a rigid housing for protection in shipping, handling and installation, and a one piece neoprene gasket. Screw-in type products are not allowed for vehicle signals.

All LED shall meet the latest ITE specifications and current Caltrans standards and measurement criteria for LED traffic signal modules, and shall conform to the following specifications:

Ball type signals shall utilize the LumiLeds (1) light engine as their source of illumination.

Lenses for ball type modules shall be made of ultraviolet stabilized polycarbonate, and incorporate facets that serve to enhance the optical efficiency of the LED traffic signal module. Individual lens-lets are specifically not allowed. The ball type signals shall incorporate an inner lens that is sealed to the lamp housing, and serves to collimate the light emitted by the LumiLeds (1) light engine. An outer lens shall also be incorporated, that serves to focus the collimated light, so as to meet ITE intensity and distribution standards. Additionally, the LED shall almost perfectly, approximate to the motorist, the appearance of an incandescent traffic signal. This means that the face of the ball LED lamp shall appear to the motorist as nearly totally uniform in illumination, and have a wide viewing angle that makes it suitable for installation on wide boulevards or single-tethered span wire. This also means that it shall not be apparent that LEDs are used as the light source for the traffic signal ball. The external lens surface for all vehicle signals shall be smooth, with no raised features, so as to minimize the collection of dirt, diesel smoke, and other particulate contaminates, and to facilitate periodic cleaning. External lens facets are not allowed. The lens shall be keyed to the housing of the LED signal module to ensure the proper orientation and to avoid possible rotation during any handling. External lenses shall be hard-coated in compliance with Caltrans specifications.

The LEDs shall be mounted and soldered to a printed circuit board. The LED signal module shall be watertight when properly installed in a traffic signal housing. The LED signal module shall utilize the same mounting hardware used to secure the incandescent lens and gasket assembly, and shall only require a screwdriver or standard installation tool to complete the mounting. The LED signal module assembly shall weigh less than 5 pounds. For vehicle signals, the incandescent lamp sockets and reflectors shall be removed from the signal head housings. So as to minimize possible maintenance problems, the LED lamp module may not protrude into the signal visor area more than three-quarters of an inch in depth.

The housing of the LED signal module shall be marked ‘TOP’ to designate the proper orientation of the LED signal module in the traffic signal housing. The housing of red LED ball type traffic signal modules shall utilize a partial, embedded and integral metal layer, in its design and construction. Manufacturer’s part number, date code, and electrical

characteristics of the LED signal module shall be visible on the rear of the assembly. A label shall be affixed to the back of all ball type modules, that certifies their complete compliance with the latest ITE VTCSH, Part II specification for LED traffic signal modules.

The LED traffic signal manufacturer shall be ISO 9001 certified.

The light intensity and distribution from red LED signal modules shall as a minimum, meet the July 1998 ITE VTCSH Part II, and current CALTRANS standards and measurement criteria for LED traffic signal modules. Test data to verify the performance for red and green ball signals as meeting the July 1998 ITE VTCSH, Part II intensity requirements @ 74 degrees Centigrade, shall be supplied from either:

Lighting Sciences
7630 East Evans Road
Scottsdale, AZ 85260

ETL Testing Laboratories
3933 US Route 11
Cortland, NY 13045-0950

or, other certified independent test lab. The light output of all LED vehicle signal modules shall meet ITE specifications for chromaticity.

The LEDs shall be connected in series parallel strings. No more than 1% of the total luminosity of the entire signal module may be lost in the event of a single string failure. For red LED ball type signals, the failure of a single LED shall cause loss of light from only that LED. No loss of light output from the complete module assembly shall occur as a result of a single LED failure in a red LED ball lamp.

The control circuitry shall prevent the current flow through the LEDs in the off state to avoid any false indication as may be perceived by the human eye, during daylight and evening hours. The LED traffic signal module shall be operationally compatible with NEMA TS-1 and NEMA TS-2 conflict monitoring parameters. The intensity of the LED signal module shall not vary by more than 10% over the allowable voltage range as specified in the electrical section below.

Red balls shall maintain required intensity, as defined by the July 1998 ITE VTCSH, Part II intensity standards for LED traffic signal modules, over the temperature range of -40 degrees centigrade to +74 degrees centigrade, at 120 volts A.C., when new, and also after 3 years.

Power factor shall be 90% or greater, at nominal rated voltage, at 25C, after 60 minutes of operation. Total harmonic distortion (THD) shall be less than 20% at rated voltage, at 25C.

All LED traffic signal modules shall be in compliance with FCC noise regulations.

All green LEDs shall have a clear lens. No green tint lens allowed.

The red LEDs shall utilize exclusively AlInGaP technology, either AS (Absorbing Substrate) or TS (Transparent Substrate), and shall not exhibit degradation of more than 30% of their initial light intensity following accelerated life testing (operating at 85 degrees C and 85% humidity, for 1000 hours). AlGaAs technology is not acceptable.

The LED signal modules shall be connected directly to line voltage, 120 Volts AC nominal, and shall be able to operate over the voltage range of 80 VAC to 135 VAC.

The 12" red ball units shall consume no more than a nominal 10.5 watts respectively, at 120 VAC, at 25 degrees centigrade. Maximum power consumption shall not exceed 12 watts respectively, at 120 VAC, at 25 degrees centigrade.

Red arrow type LED traffic signal modules shall be temperature-compensated so as to maintain intensity at elevated temperatures. Red arrow type LED traffic signal shall be tested and documented by CALTRANS as being in compliance with CALTRANS intensity standards for red arrows at elevated temperatures.

All LED traffic signal modules supplied shall be warranted for 5 years against manufacturing defects.

Red ball and red arrow traffic signal modules shall be performance warranted to be in compliance with July 1998 ITE VTCSH, Part II, and CALTRANS minimum intensity standards for LED traffic signal modules, at 74 degrees centigrade, for a period of three (3) years.

23-18.1 Pedestrian Signals: Pedestrian signals shall be in conformance with Section 86-1.02S(3) "Pedestrian Signal Faces" of Caltrans Standard Specifications.

Pedestrian LED shall be 16" x 18" Full Hand/Full Man. The Countdown Module shall be standard for pedestrian LED signals. Alternate pedestrian LED signals shall be approved by the ENGINEER. The displayed messages shall be "UPRAISED HAND" and "WALKING PERSON" symbols. The unit "counts down", or exhibits to the pedestrian a digital numerical display, as well as the Caltrans international graphic display, to communicate how much time remains to clear the intersection. The units shall have two optional operational modes; total countdown and clearance count down. The units shall be set to clearance countdown unless otherwise directed by the ENGINEER. The units shall be capable of "learning" automatically the walk time interval and the pedestrian clearance intervals whenever pedestrian timing changes are made. The housing shall be die cast from a one-piece corrosion-resistant aluminum alloy. Additionally, the UPRAISED HAND and WALKING PERSON symbols shall be LED filled. Outline of the symbols shall not be acceptable. The count-down display shall utilize Double LED rows.

The housing shall be die cast from a one-piece corrosion-resistant aluminum alloy. The housing door frame shall be hinged to the housing by stainless steel pins and hinge lugs integrally cast in the housing and door frame. Pedestrian signal housings and mounting hardware shall be painted gloss black and electrically powder coated.

23-18.2 Pedestrian Pushbuttons: Not used.

23-18.3 Accessible Pedestrian Signals (APS): The APS shall be a Polara iNS 2-wire system with shelf-mount Central Control Unit (iCCU-S2), Interconnect Board (iN2-ICB), SDLCCP (SDLC Cabinet Cable Package for ICCU-S2), and custom message option.

The buttons shall be black with a 5" X 7" informational faceplate. The pushbuttons shall have a directional arrow pointing in the direction to cross. Model to be approved by City of Pleasanton Traffic Engineering.

23-19.1 Loop Detection System: When applicable all loop detectors shall be rack mounted meeting or exceeding NEMA TS2 specification.

Sensor units shall be EDI Oracle 4E, or equal.

Detector sensor units furnished shall function without "locking up." If the detector sensor units furnished for the contract continually lock up when tuned for a motorcycle, as described herein, all furnished sensor units shall be replaced with another brand of detector at the CONTRACTOR'S expense.

23-19.2 Video Detection System: Shall be the AutoScope Vision Video Detection System by Econolite. The Video detection systems shall provide a minimum of 20 detection zones per camera, placed anywhere in the camera's field of view. System hardware and software shall provide presence detection, bicycle discrimination, incident monitoring, high definition video, and traffic data collection. Available traffic data include statistics on volume, turning movements, occupancy, speed, density, headway, and vehicle classification in user selectable time periods of 10, 20, 30 seconds or 1, 5, 10, 15, 30, or 60 minutes.

The system shall include connectivity for IP-addressable broadband communications that supports digital H.264 video compression for streaming output.

The system shall use a single Interface Panel that connects at a minimum 4 video sensors. The Panel shall be mountable to the sides of the traffic cabinet.

The camera shall require only a single 3-conductor cable to operate. This set-up will provide power and data communications back to the traffic signal cabinet up to 1,000 feet away. The camera shall have HD resolution of at least 720p (1280x720 pixels). The camera shall be equipped with an integrated zoom lens that can be adjusted using configuration computer software. The Zoom lens shall have a 10X optical zoom and the field of view shall be adjustable over the range of 7 to 73 degrees horizontal and 5 to 58 degrees vertical. The camera assembly shall be housed in a sealed IP-67 enclosure. In addition, the enclosure shall have a heater for the lens, a desiccant packet to absorb moisture, and a sunshield. The power and communications requirements of the video detection system shall be fully compatible with a standard TS2 cabinet configuration.

23-19.3 Microwave Detection System: Not used.

23-20 Loop Installation Details: When applicable loop detector lead-in cable shall be Type B. Conductor for inductive detector loop shall be Type 2. All 6' X 6' loop shall consist of 4 turns per loop. No more than four 6-foot by 6-foot loops shall be connected to each sensor unit. Type E loop detectors 6 foot in diameter may be installed in lieu of Type A loops. All front loop detectors shall be Type D. When front loop detectors are used to supplement video detection, Type D loops shall be used. No splices are permitted in detector lead-in cables.

Residue resulting from slot cutting operations shall not be permitted to flow across shoulders or lanes occupied by public traffic and shall be removed from the pavement surface.

The sealant for filling slots cut in pavement shall conform to the State Specification 86-1.02W(4) for Hot-Melt Rubberized Asphalt Sealant. Conductors to be buried in the pavement shall be installed only in the presence of the ENGINEER.

Where detector lead-in cables are connected to the terminal strips in the controller cabinet, the pressure terminal connectors shall be soldered to the detector lead in cables.

The CONTRACTOR shall identify loop wires by lane number, loop number, and start/finish using tie raps and permanent marker.

23-21 LED Luminaries: Luminaires shall be GE Evolve LED roadway lights. Model shall be ERL2 series. Part number to be approved by City of Pleasanton Traffic Engineering.

23-22 Edge-Lit Street Name Signs: Edge-Lit LED street name signs (SNS) shall be the Temple Razor Edge-Lit LED SNS, or approved equal.

Edge-Lit LED SNS installed on signal mast arms shall be the LED type per the Project Plans and these Specifications. Edge-Lit LED SNS shall operate maintenance-free for over 60,000 hours, with no bulbs or ballasts to replace. The technology consists of LEDs mounted along the top and bottom edge of the sign, concealed in the frame. The Edge-Lit sign shall use high-flux LEDs. Edge-Lit Light shall be emitted vertically from the top and bottom through a clear acrylic sheet and refracted outwards horizontally through the sign legend.

Edge-Lit technology shall allow for an ultra-slim, unobtrusive frame that can be mounted in any arrangement. Edge-Lit SNS mounted shall be mounted on the Signal Mast Arm unless otherwise noted. Edge-Lit SNS signs shall be double sided signs installed using an underhang mounting per the manufacturer's specifications. Edge-Lit LED SNS shall be White on a standard MUTCD Color 1177 (Green) background. All SNS lettering shall be the Series E standard lettering 8" Uppercase and 6" Lowercase.

The CONTRACTOR and ENGINEER shall verify the wording and spelling to be used on the signs prior to ordering equipment.

Sign brackets shall be the swivel type allowing movement in all directions.

23-23 Photoelectric Control: Photoelectric control shall be Type V for traffic signals and Type IV for standard street lights. Photoelectric units shall be installed inside the service cabinet.

23-24 Modulated Signal Detection System: The modulated signal detection system shall be able to interface with the CITY'S "Opticom" detection system as manufactured by 3M or approved equal. The controllers shall be equipped with internal circuitry to provide programmable channels of emergency vehicle preemption. The detector shall have a minimum range of 2,500 feet.

The modulated signal detection system shall consist of a phase selector; detector for 1-channel or 2-channel detection; and interface cable.

The controller cabinets shall be wired with a "D" connector or special function cable to provide all necessary controller connections for emergency vehicle preemption. The phase selectors or discriminators shall be wired to provide emergency vehicle preemption for the emergency vehicle phases as shown on the Drawings.

Necessary communications cables shall be installed to allow modulated signal detector communications with the Trafficware Shelf Mount Commander ATC NT2 controller and the Traffic Operations Center, if applicable.

23-25 Intelligent Transportation Systems (ITS) Integration: Not used.

23-26 Removing, Reinstalling or Salvaging Electrical Equipment: Salvaged traffic signal equipment identified in the project plans shall be delivered to City of Pleasanton, Operations Service Center, 3333 Busch Road unless otherwise noted on the project plans. The CONTRACTOR shall provide equipment, as necessary, to safely unload the equipment.

Full compensation for hauling and stockpiling salvaged electrical materials shall be considered as included in the contract lump sum price paid for "Signal Installation", and no additional compensation will be allowed.

23-27 Blank: Not used.

23-28 Payment: The lump sum price bid for "Signal Installation" shall include new controller assemblies, connection of the controller to the Traffic Signal Central Master Computer, interconnect cable splices within the controller cabinet, or at the City traffic computer, interconnect conduit, and all other parts and labor required for successful operation of the controller by the Traffic Signal Central Master Computer.

It shall also include a system detector controller, where required, system detection equipment, loops, etc., and any additional labor or equipment associated with each intersection, as shown on the plans.

Mobilization: 10% of the total contract price will be paid upon completion of mobilization.

Payment for Materials on Site: 50% of invoice cost for all signal poles, mast arms, cabinet, controller and hardware properly tested, stored and documented per all of the applicable provisions of these specifications.

Progress payments will be processed by the City according to the following schedule unless otherwise approved by the ENGINEER:

	<u>Percent of Lump Sum</u>	
	<u>Itemized Bid</u>	<u>Signal Work Completed</u>
(1)	20%	All conduit in place.
(2)	10%	All foundations dug and concrete poured.
(3)	15%	All loops cut with wires and sealant in place and/or all video detection equipment installed and operational.
(4)	5%	All wire pulled in all conduits.
(5)	20%	All signal standards and poles erected.
(6)	10%	Handicap Ramps installed.
(7)	5%	All new signing and striping completed.
(8)	10%	Controller and cabinet installed and operational.
(9)	5%	Miscellaneous work completed.
TOTAL	100%	

Said price shall include the controller testing by Signal Maintenance, Inc., including pick-up and deliveries, and providing a signal technician at the time the equipment is turned on, and no additional payment will be allowed therefore.

A complete and operational system shall be provided.