

CITY OF ROHNERT PARK
CONTRACT DOCUMENTS, SPECIAL PROVISIONS AND
STANDARD SPECIFICATIONS

FOR

CITYWIDE TRAFFIC SIGNAL SAFETY IMPROVEMENTS

PROJECT NO. 2022-25
CALTRANS PROJECT NO. HSIPSL-5379(023)

BID DUE DATE: WEDNESDAY, AUGUST 23, 2023 AT 2:30PM



Prepared by
City of Rohnert Park-
Public Works
600 Enterprise Drive
Rohnert Park, CA 94928
(707) 588-3300

CITY COUNCIL

Mayor – Samantha Rodriguez
Vice-Mayor – Susan Hollingsworth Adams
Council Member – Jackie Elward
Council Member – Gerard Giudice
Council Member – Emily Sanborn
City Manager – Marcela Piedra
City Engineer – Vanessa Garrett


Signed:  Date: 7/21/2023
Vanessa Garrett, P.E. 84141

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INVITATION FOR SEALED BIDS

CITYWIDE TRAFFIC SIGNAL SAFETY IMPROVEMENTS PROJECT NO. 2022-25, CALTRANS PROJECT NO. HSIPSL-5379(023)

Notice is hereby given that on Wednesday, August 23, 2023 at 2:30:00 PM at 130 Avram Avenue, Rohnert Park, California, the City of Rohnert Park will receive and open sealed bids for the Citywide Traffic Signal Safety Improvements Project No. 2022-25. Sealed bids shall be dropped off in the secured box to the right of the main doors in front of City Hall before 2:30:00 PM on Wednesday, August 23, 2023. The work is described generally as traffic signal hardware upgrades at locations citywide. The Contractor must have a valid California contractor's license, a Class A or C-10 license. The Engineer's estimate for this project is \$1,337,000. The Contractor must begin work within fifteen (15) calendar days after official notice by the City Engineer to proceed with the work and must diligently prosecute the same to completion within 180 calendar days of that Notice.

Under California Labor Code section 1770 *et seq.*, copies of the determination of the Director of the Department of Industrial Relations of the general prevailing rate of per diem wages for each craft, classification and type of workman needed to execute the work are on file in and available to any interested person on request at the Department of Public Works, or on the Internet at <http://www.dir.ca.gov/dlsr/PWD/index.htm>, and are incorporated herein. (Labor Code § 1773.2.) Prevailing wage determinations must also be posted at each job site.

SB 854 (Stat. 2014, Chapter 28) establishes that no contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)]. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. All contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement). The prime contractor must also post job site notices prescribed by regulation.

Per California Civil Code Section 9550, a payment bond in the amount of 100% of the bid total will be required from the successful bidder for bids exceeding \$25,000. The bond must be provided within 10 calendar days from notice of award and prior to the performance of any work.

A performance bond and bid bond must also be provided for bids exceeding \$25,000.

For any moneys earned by the Contractor and withheld by the City of Rohnert Park to ensure the performance of the contract, the Contractor may, at its request and sole expense, substitute certain securities equivalent to the amount withheld in the form and manner and subject to the terms and conditions provided in the California Public Contracts Code Section 22300.

This notice incorporates by reference the terms, conditions and requirements of the specifications approved by the City, any and all changes or amendments to the specifications and special instructions or special notice issued to or given to prospective bidders.

The City of Rohnert Park makes no representation or warranty of the condition of the jobsite. All prospective bidders are requested to carefully review the plans and specifications and to examine and conduct tests or otherwise satisfy themselves as to the conditions at the project site, subject to

coordination with the office of the Rohnert Park City Engineer.

Except as otherwise indicated in the Instructions to Bidders, bids will be publicly opened, examined and declared on said day and hour and referred to and considered by the City Council at a future City Council meeting. Each bid must be submitted on the bid forms furnished by the City, and each bid must include all the items shown on these forms. Substitute forms may be used if specified in this Notice.

The City reserves the right, in its sole discretion, to reject any or all bids, to re-bid, or to waive inconsequential defects in bidding not involving time, price or quality of the work. The City may reject any and all bids and waive any minor irregularity in the bids.

A copy of the drawings and specifications may be obtained from Draftech for a non-refundable fee. Draftech Blueprinting is located at 1544 Terrace Way, Santa Rosa, CA 95404, phone number 707-578-9442. The planholders list and all addendums shall be issued either through the City or through Draftech. In order to ensure receipts of addendums, any party interested in the project shall place their information with Draftech. For questions relating to the project, please contact the Department of Public Works at 707-588-3300 or PWProjects@rpcity.org.

Posted Date: July 21, 2023

/s/ SYLVIA LOPEZ CUEVAS

Published Date: July 21 & 28, 2023

City Clerk of the City of Rohnert Park

INSTRUCTIONS TO BIDDERS

The bidder must file its bid with the City Engineer of the City of Rohnert Park, California, using the copy of the Bidder's Proposal and Schedule of Bid Prices furnished with the specifications. These documents must be placed in a sealed envelope marked,

CITYWIDE TRAFFIC SIGNAL SAFETY IMPROVEMENTS

PROJECT NO. 2022-25, CALTRANS PROJECT NO. HSIPSL-5379(023)

and addressed to the City Engineer of the City of Rohnert Park, California. Said sealed bids shall be dropped off in the secured box to the right of the main doors in front of City Hall located at 130 Avram Avenue, Rohnert Park, California before 2:30 PM on August 23, 2023. The bidder must not file the book of Special Provisions or the Contract Drawings with his bid.

The bidders attention is directed to the schedule of bid prices that requires this project be bid as a unit price contract.

Bid Forms. Each proposal and all bid submittals must conform and be responsive to the Invitation, the Plans, Specifications and Contract documents.

The wording of the proposal and bid submittals must not be changed. Any additions, conditions, limitations, or provisions inserted by the bidder will render the proposal irregular and may cause its rejection. Erasures or interlineations in the proposal or other submittals must be explained or noted over the signature of the bidder.

In case of discrepancy between a unit price and the total price set forth for the unit price item, the unit price shall prevail. Discrepancies between the indicated sum of any column of numerals and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of the words.

Prices. All proposals must give the prices proposed, both in writing and in figures in the respective spaces provided, and must be signed by the bidder, who must fill out all blanks in the proposal form as therein required.

Rejection of Bids. Proposals may be rejected if they show any alterations of form, additions not called for, conditional proposals, incomplete proposals, erasures, or irregularities of any kind, excepting that erasures or delineations in the proposal will be accepted as provided under "Bid Forms" above.

When proposals are signed by an agent, other than the officer or officers of a corporation authorized to sign Contracts on its behalf or a member of a co-partnership, a Power of Attorney must be on file with the City prior to opening proposals or must be submitted with the proposal; otherwise, the proposal may be rejected as irregular and unauthorized.

Bid Security. All proposals must be presented under sealed cover and accompanied by one of the following forms of bidder's security: Cashier's check, certified check, or a bidder's bond in form provided herein, executed by an admitted surety insurer authorized to transact business in this State, made payable to the City. Said bidder's bond submitted must be the City's bid bond. The security must be in an amount equal to at least 10 percent of the proposal amount. A proposal must not be considered unless one of the forms of bidder's security is enclosed with it. A bidder's bond will not be accepted unless it has been properly filled out and executed by the surety and by the bidder.

Withdrawal of Bid. Any bid may be withdrawn at any time prior to the time fixed in the public notice for the opening of proposals only by written request for the withdrawal of bid filed with the City

Engineer. The request must be executed by the bidder or its duly authorized representative. The withdrawal of a bid does not prejudice the right of the bidder to file a new bid. This article does not authorize the withdrawal of any bid after the time fixed in the public notice for the opening of bids.

Means of Submittal. Proposals submitted by facsimile and proposals failing to reach the office of the City prior to the date and time set for receipt of same will not be considered.

Opening. Bids will be opened and read at the time and place indicated in the Invitation for Sealed Bids. Bidders and the public are invited to be present.

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

License Requirement. No proposal will be accepted from a Contractor who is not licensed in accordance with law under the provisions of Division III, Chapter 9, of the Business and Professions Code of the State of California, or from a Contractor that has been deemed irresponsible or unresponsive by the City Council.

Subcontractors. Subcontractors listed by the bidder in accordance with the Special Provisions included herein must be properly licensed under the laws of the State of California for the type of work which they are to perform.

All bidders are hereby notified that they will be required to comply strictly with the provisions of Sections 4100 to 4113, inclusive, of the Public Contract Code of the State of California.

Each bidder must file with its proposal the name and location of place of business, contractor's license number and Department of Industrial Relations registration number, of each Subcontractor who will perform a portion of the Contract work in an amount in excess of one-half of one percent, or in the case of bids for the construction of streets or highways, including bridges, in excess of one-half of one percent (0.5%) of the total bid or \$10,000. In each such instance, the nature and extent of the work to be sublet must be described.

The General Contractor to whom the Contract is awarded will not be permitted, without the written consent of the City, to substitute any person as Subcontractor in place of the Subcontractor designated in the original proposal, or to permit any Subcontract to be assigned or transferred, or to allow it to be performed by anyone other than the original Subcontractor. The City may consent to the substitution of another person as Subcontractor if the original Subcontractor, after having reasonable opportunity so to do, fails or refuses to execute the written Contract presented to it by the General Contractor, when said written Contract is based upon the conditions of the general Contract and complies with the Subcontractor's written proposal.

The failure of the Contractor to specify a Subcontractor for any portion of the Contract work in excess of one-half of one percent of the total Contract price, must be deemed to indicate that the Contractor intends to perform such portion itself. The subletting or Subcontracting of work for which no Subcontractor was designated in the original proposal and which is in excess of one-half of one percent of the total Contract price will be allowed only with the written consent of the City and then only in cases of public emergency or necessity as determined by said City. Under such circumstances, the City is required to establish the facts constituting the emergency or necessity and reduce its findings to a written

public record.

Violations of the provisions of these specified sections of the Code must be deemed to be a violation of the Contract, and the City, because of any such violations, must have the right to cancel the Contract. The Contractor, after any such violations, must be penalized to the extent of 20 percent of the amount of the Subcontract involved.

Material. The bidder may be required to furnish, as part of the submittal process, a complete statement of the origin, composition, and manufacture of any or all materials to be used in the construction of the work, together with samples. Such samples may be subjected to the tests provided for in these specifications or in the Special Provisions to determine their quality and fitness for the work.

Additional Requirements. The bidder's attention is directed to Section 3 of the General Provisions for additional proposal requirements and conditions, and information regarding award and execution of the contract. Contractor submitting a bid to the City of Rohnert Park, a public entity, must state, under penalty of perjury, the contractor's license number and the license's expiration date. This information must be entered in the Schedule of Bid Prices. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

Explanations and Addenda. Any explanation desired by the bidders regarding the meaning or interpretation of the drawings and specifications must be requested in writing and in sufficient time to allow for a written reply to reach them and all other potential bidders before the date and time for submission of bids. Oral explanation or instructions given before award of the contract will not be binding. Any interpretations made will be in the form of an addendum to the specifications or drawings and will be furnished to all bidders and its receipt by the bidder must be acknowledged. Any explanation that makes a material change, addition, or deletion to the terms of the Invitation for Sealed Bids shall be issued no less than 72 hours before the date and time for submission of bids. If an explanation making a material change, addition, or deletion must be issued less than 72 hours before the scheduled date and time for submission of bids, the date and time for submission shall be extended so that a full 72 hours is provided for analysis of the change, addition, or deletion.

Quantity of Work. The quantity of work for the unit price items to be done under the contract as noted in the Bid Schedule is but an estimate and is not to be taken as an expressed or implied statement that the actual quantity of work will correspond to the estimate. The right is reserved to increase or decrease, or to entirely eliminate items from the work if found desirable or expedient. The Contractor will be allowed no claims for anticipated profits, loss of profits, or for any damages of any sort because of any difference between the estimated and the actual quantities of work done.

The quantities given in the schedule, for unit price items, are for comparing proposals and may vary from the actual final quantities. Some quantities may be increased and others may be decreased or entirely eliminated, and no claim must be made against the City for damage occasioned thereby or for loss of anticipated profits, the Contractor being entitled only to compensation for the actual work done at the unit prices proposal.

The City reserves and must have the right to increase or decrease the quantities of work to be performed under a scheduled unit item or to entirely omit the performance thereof and upon decision of the City to so do, the City Engineer will direct the Contractor to proceed with the said work as so modified. If an increase in the quantity of work so ordered should result in delay to the work, the Contractor will be given an equivalent extension of time.

All estimates and all measurements used in determining the quantities of unit price items of work done,

the percentage of completion of lump sum items of work, and the quantity of materials furnished under the Contract at various times during the progress of the work must be the Engineer's estimates and measurements.

The planimeter must be considered an instrument of precision adapted to the measurements of all areas.

Insurance. The bidder's attention is drawn to Special Provisions, Location and Description of Work, and Special Provisions, Minimum Limits of Insurance.

Inspection of Site. The bidder must examine carefully the site of the work contemplated and the proposal, plans, specifications, and the Contract form therefor. It will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished, and as to the requirements of these specifications, the special provisions, and the Contract.

Where investigation of subsurface conditions has been made by the City in respect to foundation or other design, bidders may inspect the records of the City as to such investigation, including examination of samples, if available. When the Plans include a log of test borings showing a record of the data obtained by the City's investigation of subsurface conditions, said log represents only the opinion of the City as to the character of material encountered by it in its test borings and is only included for the convenience of bidders.

Investigations of subsurface conditions are made for the purpose of design. The City assumes no responsibility whatever in respect to the sufficiency or accuracy of borings or of the log of test borings or other preliminary investigations, or of the interpretation thereof, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work, or any part of it, or that unlooked for developments may not occur.

Making such information available to the bidders is not to be construed in any way as a waiver of the provisions of the first paragraph of this article and bidders must satisfy themselves through their own investigations as to conditions to be encountered.

No information derived from such inspection of the records of preliminary investigations made by the City or from the maps, plans, specifications, profiles or drawings will in any way relieve the Contractor from any risk from properly fulfilling all the terms of the Contract.

Records of such preliminary investigations as may have been made by the City may be inspected at the office of the Engineer.

Pre-construction Meeting. At the pre-construction meeting, the successful bidder must submit a CPM progress schedule which will show the time he/she proposes to occupy in prosecuting the various major divisions of work and his/her proposed sequence of operations. The CPM progress schedule must be subject to the approval of the City Engineer.

Adjustment of Schedule. If at any time the construction schedule is inadequate to secure completion of the work within the time specified, and the work is being prosecuted inadequately or improperly, the Engineer must have the right to require the Contractor to submit a revised progress schedule, providing for proper and timely completion of the work.

The Contractor must not be entitled to additional compensation on account of revisions required by the City.

BIDDER'S PROPOSAL

CITYWIDE TRAFFIC SIGNAL SAFETY IMPROVEMENTS

PROJECT NO. 2022-25

To: City Council, City of Rohnert Park

The undersigned hereby declares:

- (a) That the only persons or parties interested in this proposal as principals are the following:

_____.

(If the bidder is a corporation, give the name of the corporation and the name of its president, secretary, treasurer, and manager. If a co-partnership, give the name under which the co-partnership does business, and the names and addresses of all co-partners. If an individual, state the name under which the contract is to be drawn.)

- (b) That this proposal is made without collusion with any other person, firm, or corporation.
- (c) That he/she has carefully examined the locations of the proposed work, and has familiarized himself/herself with all of the physical and climatic conditions, and makes this bid solely upon his/her own knowledge.
- (d) That he/she has carefully examined the drawings and specifications and makes this proposal in accordance therewith.
- (e) That, if this bid is accepted, he/she agrees to enter into an agreement with City in the form included in the Contract Documents to complete all work as specified in the Contract for the contract price and within the contract time indicated in this bid and in accordance with the Contract Documents.
- (f) That this bid will remain open and not be withdrawn for the period specified in the Instructions to Bidders.
- (g) That he/she has read the insurance requirements in Section 2.03, Insurance in the Special Provisions section of this bid document;
- (h) That he/she has conferred with his/her insurance carriers or brokers to determine in advance of the bid submission the availability of insurance certificates and endorsements as prescribed and provided herein;
- (i) That if the bid is accepted, he/she will enter into a written contract and within fifteen (15) calendar days furnish the required proof of insurance including certificates and endorsements;
- (j) That failure to comply strictly with the insurance requirements may result in forfeiture of the bid security and withdrawal of the bid proposal.
- (k) That he/she is properly licensed in accordance with California Business and Professions Code section 7000 et seq. Bidder acknowledges that if the bidder is not properly licensed at the time the bid is awarded or as otherwise required by law, the bid will be considered non-responsive and will be rejected.
- (l) That he/she and any subcontractor relied on by him will 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 the contractor or subcontractor in connection with the

public work, as more fully set forth in the Contract. All contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement).

- (m) That in compliance with the Subletting and Subcontracting Fair Practices Act, California Public Contracts Code section 4100 et seq., he/she has listed on the attached "List of Subcontractors" each subcontractor who will perform work or labor or render service to the bidder in or about the construction of the work or will specifically fabricate and install a portion of the work in an amount in excess of one half of one percent (0.5%) of the total bid sum or in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of one percent (0.5%) of the total bid or \$10,000, whichever is greater, and that no subcontractors may be used other than those specified without written approval of the City Engineer.

Accompanying this proposal is a certified or cashier's check, or bidder's bond payable to the order of the City Clerk of the City of Rohnert Park, in the sum of _____ Dollars (\$_____). Said bidder's bond submitted is the City's bid bond form. Said bidder's bond has been duly executed by the undersigned bidder and by a financially sound surety company admitted in the State of California.

It is understood and agreed that should the bidder fail within fifteen (15) calendar days after the date of mailing written notice to the successful bidder that the contract has been awarded, to enter into the contract and furnish acceptable surety bonds and insurance on forms included herein, then the proceeds of said check, or bidder's bond, must become the property of the City. But if the contract is entered into and said bonds are furnished or if the bid is not accepted, then said check must be returned to the undersigned or the bidder will be released from the bidder's bond.

Address of Bidder

Telephone Number of Bidder

City, State, Zip

Signature of Bidder

SCHEDULE OF BID PRICES

CITYWIDE TRAFFIC SIGNAL SAFETY IMPROVEMENTS
PROJECT NO. 2022-25

In accordance with the plans and specifications therefor approved by the City of Rohnert Park, the undersigned bidder is herewith submitting the following bid prices for the performance of the entire proposed work as described in these specifications and attached drawings.

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
1	Mobilization	1	LS		
2	Traffic Control	1	LS		
3	Remove and Become Property of Contractor existing Traffic Signal Backplates and replace with Yellow retroreflective border backplates	500	EA		
4	Remove and Become Property of Contractor 8" Traffic Signal Heads and signal mountings and replace with 12" signal heads and mountings	174	EA		
5	Remove and Become Property of Contractor pedestrian signal head and mounting and replace with countdown pedestrian signal head and mounting	170	EA		
6	Remove and Become Property of Contractor pedestrian push button assembly and replace and furnish and install an Accessible Pedestrian Signal push button assembly	208	EA		
7	Remove and Become Property of Contractor existing pedestrian push button post and replace with Accessible Pedestrian Signal push button post	16	EA		
8	Remove and Salvage existing Emtrac EVP system and replace with GTT Opticom GPS/Radio EVP system	16	EA		
9	Furnish and Install GTT Opticom GPS/Radio EVP system	10	EA		
10	Furnish and install new Iteris Vantage Vector video detection system	5	EA		
11	Remove and become property of contractor existing traffic signal controller and replace with Model 2070LX controller	5	EA		
12	Furnish and install Alpha battery backup system and external BBS cabinet on side of existing traffic signal cabinet	12	EA		
13	All work of contract documents other than	1	LS		

	work separately provided for under other bid items				
<p>Total Amount of Bid (written in words) is: _____ Dollars</p> <p>and _____ Cents.</p> <p>Any discrepancy between words and figures shall be resolved as provided in the Instructions to Bidders.</p> <p style="text-align: center;">\$ _____</p> <p style="text-align: center;">(Figures)</p>					

Address of Bidder

Signature of Bidder

City, State, Zip

Name of Bidder (Print)

Telephone Number of Bidder

FAX Number of Bidder

Contractor's License Number

License's Expiration Date

Contractor's DIR Number

Contractor's email address

ADDENDUM ACKNOWLEDGEMENT

ADDENDUM #1 Date _____ Signature acknowledging receipt: _____

ADDENDUM #2 Date _____ Signature acknowledging receipt: _____

ADDENDUM #3 Date _____ Signature acknowledging receipt: _____

CONTRACTOR'S LICENSE DECLARATION
(Business and Professions Code Section 7028.15)

The undersigned declares that he or she is _____ of _____ (party making foregoing bid) (hereinafter the "Bidder")

1. Bidder's Contractor's License Number is as follows:_____.
2. The expiration date of Bidder's Contractor's License is _____, 20__.
3. Bidder acknowledges that pursuant to Section 7028.15(a) of the Business and Professions Code 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 as provided therein.

The undersigned declares, under penalty of perjury, that the representations made by the undersigned in this bid proposal are true and correct.

Executed on _____, 20 __, at _____
(insert city and state where Declaration signed).

Signature

Typed Name

Title

Name of Bidder

LIST OF SUBCONTRACTORS

In accordance with the provisions of Sections 4102 to 4108, inclusive, of the Public Contract Code of the State of California, each bidder must list below the name and location of place of business, contractors license number and Department of Industrial Relations registration number of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent of the total contract price. In each such instance, the nature and extent of the work to be sublet must be described.

Subcontractor name, and California Contractor's License Number and DIR Registration Number	Location of Place of Business	Description of Work to be Performed (also show bid Schedule Item No.)	Percentage of total contract work to be performed
Name:			
CLN:			
DIR:			
Name:			
CLN:			
DIR:			
Name:			
CLN:			
DIR:			
Name:			
CLN:			
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Name:			
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Name:			
CLN:			
DIR:			

[Add additional sheets if necessary]

**Note, the Subletting and Subcontracting Fair Practices Act also requires inclusion of any subcontractor who specially fabricates and installs a portion of the work according to detailed drawings.

BID BOND

Bond No. _____

WHEREAS, _____ ("Principal") intends to submit a bid to the City of Rohnert Park ("City") for the above-referenced Project, and the terms of the bid require the Principal to submit bidder's security.

NOW, THEREFORE, Principal and _____, a corporation organized and existing under the laws of the State of _____ and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bond unto City in the sum of _____

dollars (\$ _____) lawful money of the United States of America, such sum being not less than ten percent (10%) of the bid amount for the payment of which sum to be made, the Principal and Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the Principal submits a bid for the above-referenced Project, the terms and conditions of which are incorporated herein by reference, and if said bid is rejected by the City, or if said bid is accepted by the City and the Bidder properly executes and submits to the City the Agreement and all required documents (including the Performance bond, the Payment Bond, and the proof of insurance), then this obligation must be null and void; otherwise it must be and remain in full force and effect.

The Surety hereby agrees, for value received, that its obligations under this bond must in no way be impaired or modified by an agreement between the City and the Principal to extend the time within which the City may accept the Principal's bid, and the surety hereby waives notice of any such extension.

In the event suit is brought upon this bond, the surety must pay reasonable attorneys' fees and costs incurred by the prevailing parties in such suit, which fees and costs must be in addition to the face amount of the bond.

IN WITNESS WHEREOF, the undersigned represent and warrant that they have the right, power, legal capacity, and authority to enter into and execute this document on behalf of the Principal and the Surety, and have caused this document to be executed by setting hereto their names, titles and signatures.

Principal: _____
(Name of Firm)

Surety: _____
(Name of Firm)

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

Address for Notices to Surety:

Note: Notary acknowledgment for Surety and Surety's Power of Attorney must be attached.

NONCOLLUSION DECLARATION

TO BE EXECUTED BY BIDDER
AND SUBMITTED WITH BID

The undersigned declares:

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

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

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

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

Firm (print or type)

Signature

DECLARATION OF ELIGIBILITY TO CONTRACT

The undersigned, a duly authorized representative of the bidder, certifies and declares that:

1. The bidder is aware of California Labor Code sections 1771.1 and 1777.7, which prohibit a contractor or subcontractor who has been found by the Labor Commissioner or the Director of Industrial Relations to be in violation of certain provisions of the Labor Code from bidding on, being awarded, or performing work as a subcontractor on a public works project for specified periods of time.
2. The bidder is not prohibited from bidding on, being awarded, or performing work as a contractor or subcontractor on a public works project under Labor Code sections 1771.1 and 1777.7, or any other provision of law.
3. The bidder is aware of California Public Contract Code section 6109, which states:
 - "(a) A public entity, as defined in Section 1100 [of the Public Contract Code], may not permit a contractor or subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to Section 1771.1 or 1777.7 of the Labor Code to bid on, be awarded, or perform work as a subcontractor on, a public works project. Every public works project shall contain a provision prohibiting a contractor from performing work on a public works project with a subcontractor who is ineligible to perform work on the public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code.
 - (b) Any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract, and any public money that may have been paid to a debarred subcontractor by a contractor on the project will be returned to the awarding body. The contractor is responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project."
4. The bidder has investigated the eligibility of each and every subcontractor that bidder intends to use on this public works project, and determined that none of them is ineligible to perform work as a subcontractor on a public works project by virtue of Public Contract Code section 6109, Labor Code sections 1771.1 and 1777.7, or any other provision of law.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this _____ day of _____, 20____, at _____, California.

Signature and Title of Authorized Official

C O N T R A C T

CITYWIDE TRAFFIC SIGNAL SAFETY IMPROVEMENTS PROJECT NO. 2022-25, CALTRANS PROJECT NO. HSIPSL-5379(023)

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between _____, hereinafter called "Contractor", and the City of Rohnert Park, hereinafter called "City".

WHEREAS, the City Council of said City has awarded a contract to Contractor for performing the work hereinafter mentioned in accordance with the sealed proposal of said Contractor.

NOW, THEREFORE, IT IS AGREED, as follows:

1. Scope of Work: The Contractor must perform all the work and furnish all the labor, materials, equipment and all utility and transportation services required to complete all of the work of construction and installation of the improvements more particularly described in the Resolution adopted by the City Council of said City on <<MONTH DAY, YEAR>>, the items and quantities of which are more particularly set forth in the Contractor's bid therefor on file in the office of the City Clerk, except work to be performed by subcontractors as set forth in the Contractor's bid and for which the Contractor retains responsibility.

2. Time of Performance and Liquidated Damages: The Contractor must begin work within fifteen (15) calendar days after official notice by the City Engineer to proceed with the work and must diligently prosecute the same to completion within 90 calendar days of that Notice. The Contractor acknowledges and agrees that time is of the essence with respect to Contractor's work and that Contractor shall diligently pursue performance of the work.

In the event the Contractor does not complete the work within the time limit so specified or within such further time as said City Council must have authorized, the Contractor must pay to the City liquidated damages in the amount of four thousand two hundred dollars (\$4,200.00) per day for each and every day's delay in finishing the work beyond the completion date so specified. Additional provisions with regard to said time of completion and liquidated damages are set forth in the specifications, which provisions are hereby referred to and incorporated herein by reference.

3. Payments: Payments will be made by City to the Contractor for said work performed at the times and in the manner provided in the specifications and at the unit prices stated in Contractor's bid.

The award of the contract is for a total amount of <<AMOUNT>>.

4. Component Parts and Interpretation: This contract must consist of the following documents, each of which is on file in the office of the City Clerk and all of which are incorporated herein and made a part hereof by reference thereto:

- a) This Agreement
- b) Notice Inviting Sealed Proposals
- c) Instruction and Information to Bidders
- d) Accepted Proposal, with all attachments and certifications
- e) Performance Bond

- f) Payment Bond
- g) Special Provisions
- h) Standard Specifications
- i) Technical specifications
- j) Design Standards
- k) Plans, Profiles and Detailed Drawings

In the event of conflict between these documents, the following order of precedence will govern: this contract; change orders; supplemental agreements and approved revisions to plans and specifications; special conditions; standard specifications; detail plans; general plans; standard plans; reference specifications. In the absence of a controlling or contrary provision in the foregoing, the *Standard Specifications* (2022 edition) of the California Department of Transportation shall apply to this project.

5. Independent Contractor. Contractor is and will at all times remain as to City a wholly independent contractor. Neither City nor any of its officers, employees, or agents will have control over the conduct of Contractor or any of Contractor's officers, employees, agents or subcontractors, except as expressly set forth in the Contract Documents. Contractor may not at any time or in any manner represent that it or any of its officers, employees, agents, or subcontractors are in any manner officers, employees, agents or subcontractors of City.

6. Prevailing Wages: Copies of the determination of the Director of the Department of Industrial Relations of the prevailing rate of per diem wages for each craft, classification or type of worker needed to execute this Contract will be on file in, and available at, the office of the Director at 601 Carmen Drive, Camarillo, California 93010.

Contractor must post at the work site, or if there is no regular work site then at its principal office, for the duration of the Contract, a copy of the determination by the Director of the Department of Industrial Relations of the specified prevailing rate of per diem wages. (Labor Code § 1773.2.)

Contractor, and any subcontractor engaged by Contractor, may pay not less than the specified prevailing rate of per diem wages to all workers employed in the execution of the contract. (Labor Code § 1774.) Contractor is responsible for compliance with Labor Code section 1776 relative to the retention and inspection of payroll records.

Contractor must comply with all provisions of Labor Code section 1775. Under Section 1775, Contractor may forfeit as a penalty to City up to \$200.00 for each worker employed in the execution of the Contract by Contractor or any subcontractor for each calendar day, or portion thereof, in which the worker is paid less than the prevailing rates. Contractor may also be liable to pay the difference between the prevailing wage rates and the amount paid to each worker for each calendar day, or portion thereof, for which each worker was paid less than the prevailing wage rate.

Nothing in this Contract prevents Contractor or any subcontractor from employing properly registered apprentices in the execution of the Contract. Contractor is responsible for compliance with Labor Code section 1777.5 for all apprenticeable occupations. This statute requires that contractors and subcontractors must submit contract award information to the applicable joint apprenticeship committee, must employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice's work for every five hours of labor performed by a journeyman (unless an exception is granted under § 1777.5), must contribute to the fund or funds in each craft or trade or a like amount to the California Apprenticeship Council, and that contractors and subcontractors must not discriminate among otherwise qualified employees as apprentices solely on the ground of sex, race,

religion, creed, national origin, ancestry or color. Only apprentices defined in Labor Code section 3077, who are in training under apprenticeship standards and who have written apprentice contracts, may be employed on public works in apprenticeable occupations.

With each application for payment, Contractor shall also deliver certified payrolls to Owner as set forth above in these General Conditions, and concurrently therewith (but in no event less frequently than monthly) directly to the Labor Commissioner in the format prescribed by the Labor Commissioner.

If federal funds are used to pay for the Work, Contractor and any subcontractor agree to comply, as applicable, with the labor and reporting requirements of the Davis-Bacon Act (40 USC § 276a-7), the Copeland Act (40 USC § 276c and 18 USC § 874), and the Contract Work Hours and Safety Standards Act (40 USC § 327 and following).

7. Hours of Labor: Contractor acknowledges that under California Labor Code sections 1810 and following, eight hours of labor constitutes a legal day's work. Contractor will forfeit as a penalty to City the sum of \$25.00 for each worker employed in the execution of this Contract by Contractor or any subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Labor Code section 1810.

8. Apprentices: Attention is directed to the provisions in Sections 1777.5 (Chapter 1411, Statutes of 1968) and 1777.6 of the Labor Code concerning the employment of apprentices by the Contractor or any Subcontractor under him.

Section 1777.5, as amended, requires the Contractor or Subcontractor employing tradesmen in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site of the public works project and which administers the apprenticeship program in that trade for a certificate of approval. The certificate will also fix the ratio of apprentices to journeymen that will be used in the performance of the Contract. The ratio of apprentices to journeymen in such cases must not be less than one to five except:

- A. When unemployment in the area of coverage by the joint apprenticeship committee has exceeded an average of 15 percent in the 90 days prior to the request for certificate, or
- B. When the number of apprentices in training in that area exceeds a ratio of one to five, or
- C. When the trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis statewide or locally, or
- D. When the assignment of an apprentice to any work performed under a public works Contract would create a condition which would jeopardize his life or the life, safety, or property of fellow employees or the public at large, or if the specified task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman, or
- E. When the Contractor provides evidence that he employs registered apprentices on all of his Contracts on an annual average of not less than one apprentice to eight journeymen.

The Contractor is required to make contributions to funds established for the administration of apprenticeship program if he employs registered apprentices or journeymen in any apprenticeable trade on such Contracts and if other Contractors on the public works site are making such contributions.

The Contractor and any Subcontractor under him must comply with the requirements of Section 1777.5 and 1777.6 in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

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

"A contractor must not discriminate in the employment of persons upon public works on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every contractor for public works who violates this section is subject to all the penalties imposed for a violation of this chapter. "

10. Workmen's Compensation Insurance: In accordance with the provisions of Article 5, Chapter 1, Part 7, Division 2 (commencing with Section 1860) and Chapter 4, Part 1, Division 4 (commencing with Section 3700) of the Labor Code of the State of California, the Contractor is required to secure the payment of compensation to his employees and must for that purpose obtain and keep in effect adequate Workmen's Compensation Insurance.

The undersigned Contractor is aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for workmen's compensation or to undertake self-insurance in accordance with the provisions of that Code, and will comply with such provisions before commencing the performance of the work of this contract.

11. Indemnity and Insurance: To the fullest extent permitted by law (including without limitation California Civil Code Section 2782), Contractor must indemnify, hold harmless, release and defend City, its officers, elected officials, employees, agents, volunteers, and consultants from and against any and all actions, claims, demands, damages, disability, losses, expenses including, but not limited to, attorney's fees and other defense costs and liabilities of any nature that may be asserted by any person or entity including Contractor, in whole or in part, arising out of Contractor's activities hereunder, including the activities of other persons employed or utilized by Contractor including subcontractors hired by the Contractor in the performance of this Agreement excepting liabilities due to the sole negligence, intentional misconduct or active negligence of the City. This indemnification obligation is not limited in any way by any limitation on the amount or type of damages or compensation payable by or for Contractor under Worker's Compensation, disability or other employee benefit acts or the terms, applicability or limitations of any insurance held or provided by Contractor and must continue to bind the parties after termination/completion of this Agreement.

Contractor shall procure and maintain throughout the time for performance of the work under this Contract the insurance required by the Special Provisions. The requirement that Contractor procure and maintain insurance shall in no way be construed to limit the Contractor's duty to indemnify City as provided in the paragraph above.

Failure of City to monitor compliance with these requirements imposes no additional obligations on City and will in no way act as a waiver of any rights hereunder.

12. City Right of Termination and Right to Complete the Work. The City may terminate the Contract when conditions encountered during the work make it impossible or impracticable to proceed, or when the City is prevented from proceeding with the Contract by act of God, by law, or

by official action of a public authority. In addition, the occurrence of any of the following is a default by Contractor under this Contract:

- A. Contractor refuses or fails to prosecute the Work or any part thereof with such diligence as will insure its completion within the time specified or any permitted extension.
- B. Contractor fails to complete the Work on time.
- C. Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors, or a receiver is appointed on account of Contractor's insolvency.
- D. Contractor fails to supply enough properly skilled workers or proper materials to complete the Work in the time specified.
- E. Contractor fails to make prompt payment to any subcontractor or for material or labor.
- F. Contractor fails to abide by any applicable laws, ordinances or instructions of City in performing the Work.
- G. Contractor breaches or fails to perform any obligation or duty under the

Contract.

Upon the occurrence of a default by Contractor, the Director will serve a written notice of default on Contractor specifying the nature of the default and the steps needed to correct the default. Unless Contractor cures the default within 10 days after the service of such notice, or satisfactory arrangements acceptable to City for the correction or elimination of such default are made, as determined by City, City may thereafter terminate this Contract by serving written notice on Contractor. In such case, Contractor will not be entitled to receive any further payment, except for Work actually completed prior to such termination in accordance with the provisions of the Contract Documents.

In event of any such termination, City will also immediately serve written notice of the termination upon Contractor's surety. The surety will have the right to take over and perform pursuant to this Contract; provided, however, that if the surety does not give City written notice of its intention to take over and perform this Contract within five days after service of the notice of termination or does not commence performance within 10 days from the date of such notice, City may take over the Work and prosecute the same to completion by contract or by any other method it may deem advisable for the account and at the expense of Contractor. Contractor and the surety will be liable to City for any and all excess costs or other damages incurred by City in completing the Work.

If City takes over the Work as provided in this Section, City may, without liability for so doing, take possession of, and utilize in completing the Work, such materials, appliances, plant, and other property belonging to Contractor as may be on the site of the Work and necessary for the completion of the Work.

13. Substitution of Securities for Withheld Amounts: Pursuant to California Public Contracts Code Section 22300, securities may be substituted for any moneys withheld by a public agency to ensure performance under a contract. At the request and sole expense of the Contractor, securities equivalent to the amount withheld must be deposited with the public agency, or with a state or federally chartered bank as the escrow agent, who must pay such moneys to the Contractor upon satisfactory completion of the contract.

Securities eligible for substitution under this section must include those listed in the California Public Contracts Code Section 22300 or bank or savings and loan certificates of deposit. The

Contractor must be the beneficial owner of any securities substituted for moneys withheld and must receive any interest thereon.

Alternatively, the Contractor may request and the City shall make payment of retentions earned directly to the escrow agent at the expense of the Contractor. At the expense of the Contractor, the Contractor may direct the investment of the payments into securities and the Contractor shall receive the interest earned on the investments upon the same terms provided for in Section 22300 for securities deposited by the Contractor. Upon satisfactory completion of the Contract, the Contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the City, pursuant to the terms of this section.

Any escrow agreement entered into pursuant to this section must contain as a minimum the following provisions:

- a. The amount of securities to be deposited;
- b. The terms and conditions of conversion to cash in case of the default of the Contractor; and
- c. The termination of the escrow upon completion of the contract.

14. General Provisions

A. Authority to Execute. Each Party represents and warrants that all necessary action has been taken by such Party to authorize the undersigned to execute this Contract and to bind it to the performance of its obligations.

B. Assignment. Contractor may not assign this Contract without the prior written consent of City, which consent may be withheld in City's sole discretion since the experience and qualifications of Contractor were material considerations for this Contract.

C. Binding Effect. This Agreement is binding upon the heirs, executors, administrators, successors and permitted assigns of the Parties.

D. Integrated Contract. This Contract, including the Contract Documents, is the entire, complete, final and exclusive expression of the Parties with respect to the Work to be performed under this Contract and supersedes all other agreements or understandings, whether oral or written, between Contractor and City prior to the execution of this Contract.

E. Modification of Contract. No amendment to or modification of this Contract will be valid unless made in writing and approved by Contractor and by the City Council, City Manager or Assistant City Manager, as applicable. The Parties agree that this requirement for written modifications cannot be waived and that any attempted waiver will be void.

F. Counterparts, Facsimile or other Electronic Signatures. This Contract may be executed in several counterparts, each of which will be deemed an original, and all of which, when taken together, constitute one and the same instrument. Amendments to this Contract will be considered executed when the signature of a party is delivered by facsimile or other electronic transmission. Such facsimile or other electronic signature will have the same effect as an original signature.

G. Waiver. Waiver by any Party of any term, condition, or covenant of this Contract will not constitute a waiver of any other term, condition, or covenant. Waiver by any Party of any breach of the provisions of this Contract will not constitute a waiver of any other provision, or a waiver of any subsequent breach or violation of any provision of this Contract. Acceptance by City

INSURANCE

Bidder's attention is directed to the following insurance forms and to Section 2.03 of the Special Provisions, located on Pages 2-1 through 2-6 in the Special Provisions section. 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. Failure to comply strictly with the insurance requirements may result in forfeiture of the bid security and withdrawal of the bid proposal.

CERTIFICATE OF INSURANCE

CITY OF ROHNERT PARK (the "City")

ISSUE DATE MM/DD/YY)

PRODUCER	THIS CERTIFICATE OF INSURANCE IS NOT AN INSURANCE POLICY AND DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.																		
INSURED	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; width: 20%;">COMPANIES</th> <th style="text-align: center; width: 20%;">BEST'S RATING</th> </tr> </thead> <tbody> <tr> <td>COMPANY LETTER A _____</td> <td></td> <td></td> </tr> <tr> <td>COMPANY LETTER B _____</td> <td></td> <td></td> </tr> <tr> <td>COMPANY LETTER C _____</td> <td></td> <td></td> </tr> <tr> <td>COMPANY LETTER D _____</td> <td></td> <td></td> </tr> <tr> <td>COMPANY LETTER E _____</td> <td></td> <td></td> </tr> </tbody> </table>		COMPANIES	BEST'S RATING	COMPANY LETTER A _____			COMPANY LETTER B _____			COMPANY LETTER C _____			COMPANY LETTER D _____			COMPANY LETTER E _____		
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THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	ALL LIMITS IN THOUSANDS	
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR. <input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT. <input type="checkbox"/> OTHER _____				GENERAL AGGREGATE	\$
					PRODUCTS-COMP/OPS AGGREGATE	\$
					PERSONAL & ADVERTISING INJURY	\$
					EACH OCCURRENCE	\$
					FIRE DAMAGE (Any one fire)	\$
					MEDICAL EXPENSE (Any one person)	\$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> GARAGE LIABILITY				COMBINED SINGLE LIMIT	\$
					BODILY INJURY (Per person)	\$
					BODILY INJURY (Per accident)	\$
					PROPERTY DAMAGE	\$
	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE	\$
					AGGREGATE	\$
	<input type="checkbox"/> WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY	
					EACH ACCIDENT	\$
					DISEASE-POLICY LIMIT	\$
					DISEASE-EACH EMPLOYEE	\$
	PROPERTY INSURANCE <input type="checkbox"/> COURSE OF CONSTRUCTION				AMOUNT OF INSURANCE	\$

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/RESTRICTIONS/SPECIAL ITEMS

- THE FOLLOWING PROVISIONS APPLY:**
1. None of the above-described policies will be canceled until after 30 days' written notice has been given to the City at the address indicated below.
 2. The City of Rohnert Park, its officers, elected officials, employees, agents and volunteers are added as insureds on all liability insurance policies listed above.
 3. It is agreed that any insurance or self-insurance maintained by the City will apply in excess of and not contribute with, the insurance described above.
 4. The City is named a loss payee on the property insurance policies described above, if any.
 5. All rights of subrogation under the property insurance policy listed above have been waived against the City.
 6. The workers' compensation insurer named above, if any, agrees to waive all rights to subrogation against the City for injuries to employees of the insured resulting from work for the City or use of the City's premises or facilities.
 7. Attached hereto are copies of the applicable policy pages or endorsements regarding notice of cancellation, additional insured and waiver of subrogation matters.

CERTIFICATE HOLDER/ADDITIONAL INSURED CITY OF ROHNERT PARK 130 AVRAM AVENUE ROHNERT PARK, CA 94928	AUTHORIZED REPRESENTATIVE SIGNATURE _____ TITLE _____ PHONE NO. _____
---	---

THIS ENDORSEMENT CHANGES THE POLICY, PLEASE READ IT CAREFULLY

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Organization:

The City of Rohnert Park, its officers, elected officials, employees, agents and volunteers are named as additional insured.

(If no entry appears above, the information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement).

WHO IS INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule but only with respect to liability arising out of "your work" performed for that insured.

Modifications to ISO for CG 20 10 11 85

1. The insured scheduled above includes the insured's elected or appointed officers, officials, employees, agents and volunteers.
2. This insurance must be primary as respects the insured shown in the schedule above, or if excess, must stand in an unbroken chain of coverage excess of the Named Insured's scheduled underlying primary coverage. In either event, any other insurance maintained by the Insured scheduled above must be in excess of this insurance and must not be called upon to contribute with it.
3. The insurance afforded by this policy must not be canceled except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Entity.
4. Coverage must not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insurance would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

Signature-Authorized Representative

Address

PART 2 – SPECIAL PROVISIONS

SPECIAL PROVISIONS

2.01 PROJECT OWNER

The Project Owner is the City of Rohnert Park, California. Wherever in these or the Standard Specifications the word "Owner" appears, it must be interpreted to mean the City of Rohnert Park.

2.02 LOCATION AND DESCRIPTION OF WORK

Location of work is within the City of Rohnert Park, per the locations shown on the Contract Plans.

The work generally consists of, but not limited to, signal hardware upgrades at citywide locations, including traffic signal heads, yellow border backplates, countdown pedestrian signal heads, video detection systems, GPS/Radio unit emergency vehicle preemption systems, battery backup cabinet and battery backup systems, audible pedestrian signal systems, traffic signal controller units, and appurtenances as shown on the plans and specified in these Special Provisions.

2.03 INSURANCE

INSURANCE REQUIREMENTS FOR CONTRACTORS

The following parties or entities must be listed as additional insured by endorsement:

- A. The City of Rohnert Park, its officers, elected officials, employees, agents and volunteers

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.

Contractors must procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, the contractor's agents, representatives, employees or subcontractors. The coverage of the above-named parties as additional insureds shall be "primary and non-contributory" and must state that it will not seek contribution from the City's insurance or self-insurance. The cost of Contractor's insurance must be included in the Contractor's bid. The Notice to Proceed with the Work will not be issued, and the Contractor must not commence work, until such insurance has been approved by the City. Such insurance must remain in full force and effect at all times during the prosecution of the Work and until the final completion and acceptance thereof. In addition, the Commercial General Liability Insurance must be maintained for a minimum of three (3) years after final completion and acceptance of the Work. It must be the Contractor's responsibility to ensure that proof of insurance is sent to the City during this time. The Notice to Proceed does not relieve the Contractor of the duty to obtain such insurance as required herein.

A. Minimum Scope of Insurance

Coverage must be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (Occurrence Form CG 0001).
2. Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, Code 1 "any auto" or the exact equivalent. If Contractor owns no vehicles, this requirement may be satisfied by a non-owned auto endorsement to the general liability policy described above. If Contractor or Contractor's employee(s) will use personal autos in any way on this project, Contractor must provide evidence of personal auto liability coverage for each such person.
3. Workers' Compensation and Employers Liability: Workers' Compensation on a state-approved policy form providing statutory benefits as required by law with employer's liability insurance, with minimum limits of One Million Dollars (\$1,000,000) per occurrence.
4. Course of Construction insurance coverage must provide "all risk" coverage for the completed value of the project. Policies must contain the following provisions:
 - a. The City must be named as loss payee, and
 - b. The insurer must waive all rights of subrogation against the City.

Coverage must not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subsection (b) of Section 2782 of the Civil Code.

B. Minimum Limits of Insurance

Contractor must maintain limits no less than:

1. Commercial General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage and \$2,000,000 general aggregate. It is permissible to use excess/umbrella coverage to meet limit requirements provided the umbrella policies are appropriately endorsed and meet all other requirements. Additionally, a letter clearly identifying the primary policy or policies to which the excess umbrella coverage applies must be submitted attesting to the following: *"Umbrella or excess liability policies must provide coverage at least as broad as specified for underlying coverages and covering those insured in the underlying policies. Coverage must be "pay on behalf", with defense costs payable in addition to policy limits. There must be no cross liability exclusion of claims or suits by one insured against another, and such coverage must also apply on a primary and non-contributory basis for the benefit of the City before the City's own insurance or self-insurance shall be called upon to protect it as a named insured."*
2. Automobile Liability: \$2,000,000 combined single limit per accident for bodily injury and property damage.
3. Workers' Compensation and Employers Liability: Workers' Compensation providing statutory benefits as required by the Labor Code of the State of California with employers liability insurance, with minimum limits of \$1,000,000 per accident or disease.
4. Course of Construction insurance coverage must provide "all risk" coverage for the completed value of the project. Policies must contain the following provisions:

- a. The City must be named as loss payee, and
- b. The insurer must waive all rights of subrogation against the City.

Contractor agrees that any available insurance proceeds broader than or in excess of these specified minimum coverage requirements or the limits in subsection (A) shall be available to the additional insureds named above. Furthermore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified herein; or (2) such broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured for the work performed; whichever is greater.

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 must reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, elected officials, employees, agents, and volunteers; or the Contractor must 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, elected officials, employees, agents and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor, including the insured's general supervision 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 must contain no special limitations on the scope of protection afforded to the City, its officers, elected officials, employees, agents or volunteers.
 - b. The Contractor's insurance coverage must be primary insurance as respects the City, its officers, elected officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City, its officers, elected officials, employees, agents or volunteers must be in excess of Contractor's insurance and must not contribute with it.
 - c. Any failure to comply with reporting provisions of the policies must not affect coverage provided to the City, its officers, elected officials, employees, agents or volunteers.
 - d. The Contractor's insurance must 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 must agree to waive all rights of subrogation against the City, its officers, elected officials, employees, agents and volunteers for losses arising from work performed by Contractor for the City.

3. All Coverages

- a. Each insurance policy required by this clause must be endorsed to state that coverage must not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City.
- b. **Coverage must not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subsection (b) of Section 2782 of the Civil Code.**

4. Course of Construction policies must contain the following provisions:

- a. The City must be named as loss payee.
- b. The insurer must waive all rights of subrogation against the City.

E. Acceptability of Insurers

Insurance is to be placed with insurers with a Best's rating of no less than A:VII or as approved by the City.

F. Verification of Coverage

Contractor must furnish the City with certificates of insurance and with original endorsements affecting 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 are to 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 complete, certified copies of all required insurance policies, at any time.

G. Subcontractors

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

2.04 BONDS

In accordance with Section 3.4 of the Standard Specifications, the Contractor must provide the following bonds:

Payment Bond equal to 100% of the Contract Bid Price, and Performance Bond equal to 100% of the Contract Bid Price on City's forms. Both bonds must, by its term, remain in full force and effect for a period of one (1) year after the completion and acceptance of said work to guarantee the replacing or making acceptable of any defective materials or faulty workmanship.

The Contractor may elect to post a maintenance bond equal to 100% of the contract bid price, which will run for one year after completion and acceptance of said work to guarantee replacing or making acceptable any defective materials or faulty workmanship prior to the acceptance of said work.

2.05 LIQUIDATED DAMAGES

In accordance with Section 8.6 of the Standard specifications, Liquidated Damages shall be agreed to amount to \$4,200.00 per calendar day.

2.06 WITHDRAWALS OF PROPOSALS

The City reserves the right to reject any and all bids and to waive any informality or irregularity in the bids received.

No bidder may withdraw his/her bid for a period of ninety (90) days from the opening thereof.

2.07 DRAWINGS AND SPECIFICATIONS

The drawings showing location and character of work are entitled Traffic Signal Safety Improvements, numbered 1 through 49 inclusive and are included as a part of these specifications. The City of Rohnert Park 2010 Manual of Standards, Details and Specifications are the adopted Standard Plans for the City of Rohnert Park and are included as a part of these specifications.

Also included by reference as part of these specifications are the Standard Specifications of the CITY OF ROHNERT PARK, Sections 1-10 inclusive, hereinafter referred to as GENERAL PROVISIONS.

In addition, the technical provisions of the Standard Plans and Standard Specifications, State of California, Department of Transportation, Business and Transportation Agency, most current edition, and to revisions thereof are included by reference as a part of these specifications insofar as they refer to materials and methods of work where applicable. Wherever in the SPECIAL PROVISIONS reference is made to Caltrans STANDARD SPECIFICATIONS or Caltrans STANDARD PLANS, it is these specifications or plans referred to.

2.08 COOPERATION AND COLLATERAL WORKS

The Contractor must conform to the provisions of Section 7.26, "Cooperation and Collateral Works," of the STANDARD SPECIFICATIONS.

The Contractor must ascertain the nature and extent of any simultaneous collateral work and must coordinate his operations and cooperate to minimize interference.

2.09 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

The Contractor must conform to the provisions of Section 7.15, "Preservation of Property," of the STANDARD SPECIFICATIONS.

Without additional compensation, the Contractor may remove and replace, in a condition as good as or better than original, such small miscellaneous structures as fences and sign posts, that interfere with the Contractor's operations.

All costs to the Contractor for protecting, removing, modifying, relocating and restoring existing improvements must be considered as included in the contract prices paid for the various items of work, and no additional allowance will be made therefor.

2.10 PERMITS AND LICENSES

The Contractor must obtain all required City permits for this work and must fully comply with all conditions and provisions of such permits. The Contractor must pay any fees connected therewith, and as described in the Bid Schedule for this project. The City will waive City permit fees.

The Contractor must have a valid California contractor's license, a Class A or Class C-10 license. The Contractor and all subcontractors will be required to obtain a City Business license.

2.11 APPROVED DEBRIS HAULERS

There are three approved debris haulers within the City and contact information is listed below. The Contractor shall contract with one of the three debris haulers for service on the project. Payment for debris hauling shall be included within the Contractor’s bid and no additional payment will be made for using one of the three approved debris haulers.

<p>Industrial Carting (Global Materials Recovery Services C&D Recycling Facility) (707) 585-0511</p>	<p>Recology Sonoma Marin 800-243-0291 https://www.recology.com/recology-sonoma-marin/</p>	<p>Pacific Sanitation 707-838-2597 http://www.pacificsanitation.com/</p>
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When the Contractor utilizes a staging area or storage yard that is fenced and screened, final cleanup of the staging area and storage yard will be completed before the fence and screen are removed, except for spot cleanup or trimming that may be required in areas directly under or adjacent to the fence and screen.

Unless expressly waived by the City Engineer, when the contractor utilizes an area for storage of material or staging its activities, the area will be fenced and locked and all fencing will be installed with protective screening (i.e., green screen) to minimize the visual impact of the storage and staging area.

2.12 FIELD REVIEW PRIOR TO BIDDING

The bidder must examine carefully the site of the work contemplated and the proposal, plans, specifications, and the contract forms therefor. It will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and quantities of work to be performed and materials to be furnished, and as to the requirements of these specifications, the Special Provisions, and the contract.

2.13 TESTING

The City of Rohnert Park will only pay for passing compaction tests meeting the requirements of these specifications. All failing tests will be charged to the Contractor and the costs of such failing tests will be deducted from the contract. In addition, the decision as to when and from what areas tests are to be made will be at the judgment of the Engineer only.

2.14 WORKING HOURS AND RECORD DRAWINGS

Contractor working hours shall be between 8AM and 6PM unless approved by the City Engineer at least 72 hours in advance. Working days shall be Monday through Friday, excluding weekend and holidays.

Record drawings shall be provided at the end of the project by the contractor, and final payment shall not be issued until completed and approved by the project manager. The record drawing compilation shall be considered part of the bid amount.

2.15 PROJECT NOTIFICATION AND IDENTIFICATION SIGN

Contractor shall post notification signs at each residence or commercial establishment within the work limit two (2) weeks prior to commencement of work and three days prior to commencement of work. Cost for notification shall be considered as part of mobilization, and no additional payment shall be made.

The Contractor shall supply 4' X 8' signs to be displayed at the project site as approved by the Engineer in wording to be provided by the City. The signs shall be constructed in accordance with City STD 742. The contractor shall remove the signs when construction is complete.

2.16 CORONAVIRUS RISKS AND CONSTRUCTION REQUIREMENTS

As of this date of this contract, the extent and impact of Coronavirus (also known as “COVID-19”) on this project, including with respect to supplies, materials, and labor, may not be known by the parties. Nevertheless, Contractor acknowledges the need to reasonably foresee the extent and impact of COVID-19; warrants that it has taken such risks into account in preparing its bid and procuring supplies, materials, and labor; and shall be deemed to have assumed the risks associated with COVID-19 by Contractor’s voluntary entry into this Contract, except as otherwise expressly stated in the Contract Documents.

Contractor hereby acknowledges that it has investigated and is familiar with and shall comply with applicable health orders and construction field safety protocols established by the Health Officer of the County of Sonoma. Contractor shall establish any required Code of Safety Practices and designated a Site Safety Representative as may be required under such orders. Contractor acknowledges that it may be subject to further requirements that may be imposed by State Public Health Officer. Contractor hereby acknowledges that compliance with such requirements constitutes part of the Scope of Work under this Contract.

PART 3 – STANDARD SPECIFICATIONS

**PART 3
CONDITIONS OF THE CONTRACT**

SECTION 1

DEFINITIONS AND TERMS

Whenever in these specifications, or in any documents or instruments where these specifications govern, the following terms, or pronouns in place of them, are used, the intent and meaning must be interpreted as follows (except as the context requires a different meaning):

Abbreviations

AAI	American Asphalt Institute
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISC	American Institute Steel Construction
AISI	American Iron and Steel Institute
API-ASME	American Pressure Institute - American Society of Mechanical Engineers
AREA	American Railway Engineering Association
ASA	American Standards Association
ASTM	American Society for Testing Materials
AWPA	American Wood Preservers Association
AWA	American Welding Society
AWWA	American Water Works Association
CRA	California Redwood Association
DFPA	Douglas Fir Plywood Association
NEMA	National Electrical Manufacturers' Association
WCLA	West Coast Lumbermen's Association

Acceptance

The formal written acceptance by the City of an entire Contract which has been completed in all respects in accordance with the plans and specifications and any modifications thereof previously approved.

Bidder

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

City

City of Rohnert Park

City Engineer

The City Engineer of the City of Rohnert Park.

Contract or Contract Documents

The Contract or agreement to be entered into by the successful bidder for the performance of the

work must consist of the following documents, each of which is on file in the office of the City Clerk and all of which are incorporated in the Contract and made a part thereof by reference thereto: Contract, Invitation for Sealed Proposals, Instructions and Information to Bidders, Accepted Proposal, Performance Bond, Payment Bond, Special Provisions, Standard Specifications, Design and Construction Standards, Plans, Profiles and Detailed Drawings.

Contractor

The word “Contractor” must mean the person, persons, partnership or corporation entering into a Contract for the performance of the work required and the legal representative of said party of the agent appointed to act for said party in the performance of the work.

Contract Prices

Either the unit prices or lump sum amounts to be named in the Contract, or the total of all payments under the Contract at the unit prices or lump sum amounts, as the case may be. This definition is for convenience and reference only, and must not be construed to alter the fact that the Contract is an entire Contract for the performance of all work depicted on the plans and as described herein.

Directed

Whenever in these specifications the words “directed,” “required,” “permitted,” “ordered,” “instructed,” “designated,” “considered necessary,” “prescribed,” or words of like import are used, it must be understood that the directions, requirements, permission, order, instruction, designation, or prescription, etc. of the City Engineer are intended; and, similarly, the words “approved,” “acceptable,” “satisfactory,” or words of like import, must mean approved by, or acceptable or satisfactory to the City Engineer, unless otherwise stated.

Engineer

Engineer must mean properly authorized engineers, inspectors, and superintendents acting severally within their scope of the particular duties entrusted to them by the City Engineer.

Federal Agencies

Whenever in these specifications reference is made to any Federal Agency or officer, such references must be deemed made to any agency or officer succeeding in accordance with law to the powers, duties, jurisdictions and authority of the agency or officer mentioned.

Inspector

The word “Inspector” must mean the authorized individual or firm acting within the jurisdiction entrusted to it by the City Engineer.

Plans

The Plans must mean collectively all of the drawings or plans referenced by the project specifications and made a part thereof, and also such supplemental drawings or plans as the City Engineer must issue from time to time in order to elucidate drawings or plans attached to these specifications, or for showing details which are not shown thereon, or for the purpose of showing changes in the work, as authorized in later paragraphs describing changes and extra work.

Specifications

The directions, provisions, and requirements contained herein as supplemented by such special provisions or special specifications as may be necessary, pertaining to the method and manner of

performing the work or the quantities and qualities of materials to be furnished under the Contract. The special provisions or special specifications are specified clauses setting forth conditions or requirements peculiar to the project under consideration and covering work or materials involved in the proposal and estimate but not satisfactorily covered by these Standard Specifications.

State

State of California.

Supervision

The word “supervision” where used in these specifications to indicate supervision by the City Engineer must mean the performance of obligations and the exercise of rights specifically imposed and granted upon and to the City in becoming a party to the Contract, of which the text of these specifications form a part. Excepting as specifically stated herein, supervision by the City must not be construed to mean active and direct superintendence of the details of work.

Surety

The word “surety” or “sureties” must mean the bondsmen or party or parties who may guarantee the fulfillment of the Contract by bond, and whose signatures are attached to said bond.

SECTION 2

PROPOSAL REQUIREMENTS AND CONDITIONS

2.1 INTENT

It is the intent of these specifications that the provisions of all sections must apply unless otherwise specified in the Special Provisions, in which case the provisions contained therein must have precedence over those specified in the Standard Specifications. It is also the intent where reference is made to specifications or other organizations for portions of the work, that such reference must apply only to construction methods and materials used in said work.

SECTION 3

AWARD AND EXECUTION OF CONTRACT

3.1 AWARD OF CONTRACT

The City reserves the right to accept or reject any or all proposals and waive technical defects as the best interests of the City may require. Award of the Contract, if it be awarded, will be to the lowest responsive, responsible bidder whose proposal complies with all the requirements prescribed. The award, if made, will be awarded as soon as practicable after the opening of the proposals but not before the time for bid protests set forth below. Proposals in which the prices are obviously unbalanced will be rejected.

The proposals will be compared on a basis of the sum of the totals of the items of the schedule as calculated from the given estimated quantities and the unit prices or lump sums of the amount submitted. The entire work will be awarded to one bidder, unless otherwise specified in the Special Provisions.

3.2 BID PROTESTS

Any bid protest ("Bid Protest") must be filed in writing with the City Clerk, with a copy to the bidder whose bid is being protested, and served by email or facsimile transmission within seven (7) calendar days of the City's issuance of the Notice to Intent to Award for Construction Work. **Proof of service of the Bid Protest must be submitted to the City Clerk within one business day of the filing of the Bid Protest, and any protest without a timely submitted proof of service may be rejected.** The City will use reasonable efforts to deliver by email or facsimile a copy of the Notice of Intent to Award to all bidders who submitted bids no later than the business day after issuance, although any delay or failure to do so will not extend the bid protest deadline described above.

The Bid Protest must state all grounds upon which the protest is based and include all facts and documents in support of each protest ground.

Any bidder whose bid is subject to a protest may submit to the City Clerk a written response ("Response") to the Bid Protest, with a copy to the protesting bidder, and served by email or facsimile transmission within 5 (five) calendar days of the service of the Bid Protest.

The City Clerk shall promptly submit the Bid Protest, and any Response, to the City Manager, Assistant City Manager or his/her designee for decision ("Decision"). The Decision on the Bid Protest shall be in writing and shall be served upon the protesting bidder, and the bidder whose bid is being protested, via email or facsimile transmission within five (5) calendar days of his or her receipt of Bid Protest and any Response. If the City Manager, Assistant City Manager or his/her designee has not issued a written Decision on the Bid Protest within said five (5) calendar day period, then the Bid Protest shall be deemed denied. The Decision, by written Decision or deemed denial, shall be final.

Failure to comply with these Bid Protest Procedures shall be deemed to be a waiver of the right to protest a bid.

3.3 RETURN OF PROPOSAL GUARANTEES

Within 10 days after award of Contract, the City will upon demand return the proposal guarantees

accompanying the proposals of all bidders, except those of the three lowest responsible bidders as determined by the City. Proposal guarantees of such three lowest responsible bidders will be held until the Contract has been finally executed, after which they will be returned to the respective bidders whose proposals they accompany.

3.4 BONDS

Prior to the execution by the City of the Contract, the successful bidder must file good and sufficient bonds to be approved by the City conditioned upon the complete performance of the Contract and upon the payment of claims for labor and materials in connection therewith. The Contractor must pay all premiums and costs thereof and incidental thereto. Such bonds must not be subject to cancellation.

The following minimum thresholds require Payment and Performance bonds for projects over \$25,000.

Payment Bond: Per California Civil Code Section 9550. The payment bond should contain the terms and conditions set forth in Section 9554 of the Civil Code of the State of California, and must be subject to the provisions of that chapter and, in addition, must be in the amounts which are specified in the Special Provisions.

The performance bond must be in an amount specified in the Special Provisions and must be so conditioned as to insure the complete performance of the Contract without exception.

Should any surety or sureties be deemed unsatisfactory at any time by the City, notice will be given to the Contractor to that effect, and he must forthwith substitute a new surety or sureties satisfactory to the City. No further payment must be deemed due or will be made under this Contract until the new surety must qualify and be accepted by the City.

Any alterations in the work to be done, or increase or decrease of the materials to be furnished, which may be made pursuant to the terms of said Contract, must not in any way release either the principal or surety thereunder, nor must any extensions of time granted under the provisions of said Contract release either the principal or surety, and notice of such alterations or extensions of the Contract must be waived by the surety. The bonds must be maintained in full force and effect until the Contract has been completely performed and until all claims for material and labor have been paid.

Once the Notice of Completion has been recorded, Contractor may elect to post a Maintenance Bond equal to 100% of the final Contract Price, including Contract Change Orders, if any, for a period of one-year after the Notice of Completion recorded date.

3.5 EXECUTION OF CONTRACT

The Contract must be signed by the successful bidder and returned, together with the Contract Bonds and valid insurance on City forms, within fifteen (15) calendar days after the date of mailing written notice to the successful bidder that the Contract has been awarded.

3.6 FAILURE TO EXECUTE CONTRACT

Failure to execute a Contract, file acceptable bonds, and/or acceptable insurance as provided herein within said fifteen (15) calendar days shall allow the City, at its discretion, to annul the award and claim the proposal guarantee as provided in the California Public Contract Code. If the successful bidder refuses or fails to execute the Contract, the City may award the Contract to the second lowest

responsible bidder. If the second lowest responsible bidder refuses or fails to execute the Contract, the City may award the Contract to the third lowest responsible bidder. On the failure or refusal of the second or third lowest responsible bidder, to whom any Contract is so awarded, to execute the same, such bidders' guarantees must be likewise forfeited to the City. The work may then be re-advertised or may be constructed by other means as the City may decide.

SECTION 4

SCOPE OF WORK

4.1 WORK TO BE DONE BY CONTRACTOR

The work to be done consists of furnishing all labor, methods or processes, implements, tools, machinery, transportation, insurance, permits, bonds, taxes and materials, except as otherwise specified which are required to construct the signal hardware upgrades at citywide locations, including traffic signal heads, yellow border backplates, countdown pedestrian signal heads, video detection systems, GPS/Radio unit emergency vehicle preemption systems, battery backup cabinet and battery backup systems, audible pedestrian signal systems, controller units, and appurtenances as shown on the plans and specified in these Special Provisions in complete order for use and to leave the grounds in a neat and orderly condition.

Where items contain a description of work to be included for payment under a particular item, such description must be considered as including, but not being limited to, the work described. It must be further understood that it is the intent that the cost of all work necessary for the completion of the particular item must be included in the price proposal for the item, unless the cost of such work is specifically included in another item.

4.2 FINAL CLEANUP

Before final inspection by the City, the Contractor must clean the site and grounds occupied by it in connection with the work of all rubbish, excess materials, falsework, temporary structures, and equipment, and all parts of the work must be left in a neat and presentable condition. Nothing herein, however, must require the Contractor to remove warning and directional signs prior to formal acceptance by the City.

When the Contractor utilizes a staging area or storage yard that is fenced and screened, final cleanup of the staging area and storage yard will be completed before the fence and screen are removed, except for spot cleanup or trimming that may be required in areas directly under or adjacent to the fence and screen.

4.3 CHANGES IN THE CONTRACT - EFFECT BETWEEN PARTIES

The City reserves the right to make such alterations or deviations, additions to or omissions from the plans and specifications, as may be determined during the progress of the work to be necessary and advisable for the proper completion thereof. When such change is ordered, the City Engineer must determine and state in his/her written order to the Contractor made pursuant thereto whether or not in his/her opinion such change constitutes a material change and what adjustment of consideration provided for in the Contract is warranted. Upon written order of the City Engineer, the Contractor must proceed with the work as so increased, decreased or altered. Such action and any disposition thereof may be taken without notice by City to Insurance Underwriters, Sureties, or Guarantors required by this Contract and absence of notice thereto must in no way whatsoever discharge the obligation of any such party.

When the City and the Contractor fail to agree as to whether an omission of a portion of the work or alterations, or deviations or additions to or omissions from the plans and specifications ordered by the Engineer or City constitute a material change or difference in character of work as herein contemplated sufficient to warrant adjustment in the consideration provided to be paid to the

Contractor or fail to agree on the consideration adjustment or compensation to be allowed for such change, the Contractor must forthwith proceed with the changed work upon receipt of written order from the City Engineer and the following procedures must become operative.

Pending a settlement of the dispute, the Contractor must file with the City Engineer, within ten (10) days after receiving such written notice to proceed, a protest setting forth in detail in what particulars the character of the work was changed so as to warrant a consideration adjustment or by what amount the unit cost or other cost was increased or to what extent the consideration demand or reduction in consideration determined by the City Engineer as warranted is excessive. The failure of the parties to agree must in no wise be construed as relieving the Contractor of its duty and responsibility for continuing with performance under the Contract as changed and filing a protest as above provided for. Failure to continue performance under such circumstances must constitute a breach of Contract by the Contractor and the appropriate provisions hereof with relation thereto must apply. The determination of the City Engineer of the amount of reduction in Contract consideration or other consideration to City or increase in consideration or other basis of compensation to Contractor arising out of any such change must be final and binding upon the Contractor, unless it files such a protest as hereinabove provided within ten (10) days after receiving notice from the City Engineer to proceed. Payment by City on the basis of Contract prices so adjusted must constitute full and final performance of City obligation hereunder. If the parties fail to agree prior to completion of the Contract, final payments must not be delayed but must be made in accordance with the City Engineer's determinations subject to further claim of the Contractor and compliance by City with court order, but nothing contained in this clause must excuse the Contractor from proceeding with the prosecution of the work as changed.

4.3.1 Reduction in Cost

If the cost of work to the Contractor is reduced by reason of any modification of the Contract, compensation must be made to the City therefor or proportionate reduction in Contract consideration must be made therefor.

4.3.2 Quantity Changes

The quantities given in the proposal schedule for unit price items are for comparing proposals and may vary from the actual final quantities. Some quantities may be increased and others may be decreased or entirely eliminated, and no claims must be made against the City for damage occasioned thereby or for loss of anticipated profits, the Contractor being entitled only to compensation for the actual work done at the unit prices proposed.

4.3.3 Extra Work

(a) The City reserves and must have the right, when confronted with unpredicted conditions, unforeseen events, or emergencies, to revise the details of the contemplated work or to add work of a different character or function and have the Contractor perform such revised or added work, as extra work, when such extra work is considered by the City Engineer to be vitally appurtenant to the satisfactory completion of the project. Extra Work is defined as added work of a different character or function and for which no basis for payment is prescribed; or that involving revisions of the details of the work in such a manner as to render inequitable payment under items upon which the Contractor proposed; or that work to be done under stipulated prices as given in the Schedule of Bid Prices.

The signing of the Contract by the Contractor will be deemed to be an agreement on its part to

perform extra work, as and when ordered by the City Engineer. The Contractor must give notice to the sureties on the Contractor's bonds if the estimated total value of the Contract, as changed or supplemented, must exceed the original total proposal price by more than twenty-five percent (25%), but failure to give such notice must in no way whatsoever affect the surety's obligation under said bonds. If required extra work results in delay to the work, the Contractor will be given an equivalent extension of time.

(b) Upon decision of the City to have extra work performed, the City Engineer will so inform the Contractor, acquainting it with the details of the new work. Should an item of work within the proposal schedule correspond with the type of work to be done under extra work to the mutual satisfaction of the Contractor and the City, the extra work must be performed at the stipulated bid price and in the manner provided for said item. Should such extra work not correspond to a stipulated bid price, the Contractor must prepare a price for said work based upon its estimate of cost and submit said price and estimate to the City Engineer based on one of the following methods as requested by the City:

(1) For a stated unit price or lump sum amount based upon current prevailing fair prices for materials, labor, plant, overhead, and profit.

(2) On a cost plus markup basis (force account by the Contractor). All work done by the Contractor on a cost plus markup basis will be computed in the manner hereinafter described, and the compensation thus provided must be accepted as payment in full by the Contractor, and no additional payment will be allowed for the use of small tools, superintendent's services, timekeeper's services, nor any other overhead expenses incurred in the prosecution of the force account work.

Total Cost Must Include:

MATERIALS: For all materials purchased by the Contractor and used in this specific work, it will receive the actual cost less normal discounts of such materials, including freight and delivery charges, as shown by original receipted bills. It must be understood, however, that such salvage value, as may be agreed upon between the City and the Contractor for materials which are not permanently incorporated in the work, will be deducted from the total amount as derived above. The City reserves the right to furnish such materials required as it deems advisable, and the Contractor must have no claim for profit on the cost of such materials.

LABOR: For all direct labor engaged in the specific operation, the Contractor will receive the prevailing wage paid on the project for each and every hour that said labor is actually engaged in such work. In addition, the City will reimburse the Contractor for compensation insurance payments; contributions made to the State as required by the provisions of the Unemployment Reserve Act, Chapter 352, Statutes of 1935, as amended; and for taxes paid to the Federal Government, as required by the Social Securities Act, approved August 14, 1935, as amended.

EQUIPMENT RENTAL: For any machine, power and equipment which is deemed necessary, the Contractor must receive the actual cost of rented equipment furnished by it as shown on its paid vouchers.

For the use of equipment owned by the Contractor, it must be paid the rental rates currently prevailing in the locality, and said rental rates must be deemed to include profit and overhead, and no extra compensation will be allowed, nor will any percentage or

amount whatsoever be added thereto.

MARKUP:

(i) **Work by Contractor.** A 15% allowance must be added to Contractor's direct costs and must constitute the markup for all overhead and profit on work by the Contractor. The Contractor must also be compensated for the actual increase in the Contractor's bond premium caused by the extra work.

(ii) **Work by Subcontractor.** When any of the extra work is performed by a Subcontractor, a 15% allowance must be added to the Subcontractor's direct costs and must constitute the markup for all overhead and profit on work by the Subcontractor. In addition, a 5% allowance must also be added to the Subcontractor's direct cost and must constitute the markup for all overhead and profit for the Contractor on work by the Subcontractor. The Contractor must also be compensated for the actual increase in the Contractor's bond premium caused by the extra work.

(c) The Contractor must not commence extra work until it has secured the approval of the City as to the method and amount of payment thereunder, excepting that the City Engineer may, in writing, order the Contractor to proceed with extra work in advance of such approval.

(d) Upon receipt of the Contractor's price, the City Engineer will make an analysis thereof, and the City will adopt one of the following procedures for prosecuting extra work:

(1) Accept the Contractor's price for lump sum or unit price amount in the original or amended form and direct Contractor to proceed with the work; or direct Contractor to perform the work on a cost plus markup basis.

(2) Have the work performed by the City under separate contract, without undue interference or hindrance to the Contractor and without claim or suit by the Contractor for damages on account thereof.

4.4 MAINTENANCE OF DETOURS

The Contractor must construct and maintain detours and detour bridges for the use of public traffic as provided in the Special Provisions, or as shown on the plans or as directed by the Engineer, and payment for such work will be made as set forth in the Special Provisions or at the contract prices for the items of work involved if the work being performed is covered by contract items of work, and no other method of payment therefor is provided in the Special Provisions. Otherwise, the work will be paid for as extra work as specified under Paragraph 4.3 of this section.

When public traffic is routed through the work, provisions for passageway through construction operations will not be considered as detour construction or detour maintenance.

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

The failure or refusal of the Contractor to construct and maintain detours at the proper time must be sufficient cause for closing down the work until such detours are in satisfactory condition for the use of public traffic.

Where the Contractor's hauling is causing such damage to the detour that its maintenance in a condition satisfactory for public traffic is made difficult and unusually expensive, the Engineer must have authority to regulate the Contractor's hauling over the detour.

4.5 USE OF MATERIALS FOUND ON THE WORK

The Contractor, with the approval of the Engineer, may use in the proposed construction such stone, gravel, sand or other material suitable, in the opinion of the Engineer, as may be found in the excavation, but it must replace at its own expense with other suitable material all of that portion of the material so removed and used which was contemplated for use in the embankments, backfills, bridge approaches, or otherwise. No charge for materials so used will be made against the Contractor. The Contractor must not excavate or remove any materials from within the project location which is not within the excavation, as indicated by the slope and grade lines, without written authorization from the Engineer.

SECTION 5
CONTROL OF THE WORK

5.1 AUTHORITY OF CITY ENGINEER

The City Engineer must decide all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work and all questions which may arise as to the interpretation of the Plans and Specifications. His/her decision must be final, unless otherwise ordered by the City Manager or Assistant City Manager, and he/she must have authority to enforce and make effective such decisions and orders which the Contractor fails to carry out promptly.

5.2 PLANS

The approved Plans are hereby made a part of these Specifications. These Plans show in general the nature and dimensions of the work to be done. It is hereby understood that changes may be made according to the best interests of the City.

5.3 CONFORMITY WITH PLANS

Finished surfaces in all cases must conform with the lines, grades, cross sections, and dimensions shown on the approved plans. Deviations from the approved plans and working drawings, as may be required by the exigencies of construction, will in all cases be determined by the City Engineer and must be authorized in writing by him/her.

The Contractor must have Plans and Specifications for the project on the project location at all times and must make these Plans and Specifications available to the Engineer upon request.

5.4 WORKING DRAWINGS

The Contractor must submit such working drawings, in quadruplicate, as required by the Special Provisions. Working drawings for any structure must consist of such detailed plans as may be required for the prosecution of the work and are not included in the plans furnished by the City. They must include shop details, erection plans, masonry layout diagrams, and bending diagrams for reinforcing steel, which must be approved by the Engineer before any work involving these plans is performed. Plans for cribs, cofferdams, falsework, centering, and form work will be required and must be subject to approval, unless approval is waived by the Engineer. These plans will be subject to approval insofar as the details affect the character of the finished work, but other details of design will be left to the Contractor, who must be responsible for the successful construction of the work.

It is expressly understood, however, that approval by the Engineer of the Contractor's working drawings does not relieve the Contractor of any responsibility for accuracy of dimensions and details, or for mutual agreement of dimensions and details.

Full compensation for furnishing all working drawings must be considered as included in the prices paid for the various Contract items of work, and no additional allowance will be made therefor.

5.5 COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

These Specifications, the Plans, Special Provisions, Contract Change Orders, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is binding as though occurring in all. They are intended to be cooperative and to describe and provide for a complete work.

In case of discrepancy either in the Plans or Specifications, the matter must be promptly submitted to the City Engineer who must make a determination in writing. Any adjustment by the Contractor without this determination must be at its own risk and expense. If the Contractor, in the course of the work, finds any discrepancy in the Plans in the physical conditions of the locality or any errors or omissions in the Plans or in the layout as given by survey points and instructions, it must immediately notify the Engineer in writing who must promptly verify the same. Any work or material not herein specified or shown on the Plans, but which be fair implication in the judgment of the City Engineer, should be included therein, must be done or furnished as a part of the Contract as though shown or included in the Plans or Specifications. Any work done after such discovery, until authorized, must be done at the Contractor's risk.

5.6 INTERPRETATION OF PLANS AND SPECIFICATIONS

Should it appear that the work to be done or any of the matter relative thereto are not sufficiently detailed or explained in the Plans and Specifications, the Contractor must apply to the Engineer for such further explanations as may be necessary and must conform to them as part of the Contract, so far as may be consistent with the original Specifications; and in the event of any doubt or question arising respecting the true meaning of the Specifications, reference must be made to the City Engineer, whose decision thereon must be final.

In the event of any discrepancy between any Plans and the figures written thereon, the figures must be taken as correct.

5.7 SUPERINTENDENCE

Whenever the Contractor is not present on any part of the work where it may be desired to give direction, orders will be given by the Engineer, which must be received and obeyed by the superintendent or foreman or authorized representative who may have charge of the particular work in reference to which the orders are given. Any order given by the Engineer, not otherwise required by the Specifications to be in writing, will, on request of the Contractor, be given or confirmed by the Engineer in writing.

An authorized representative of the Contractor must be present at the site of the work at all times, both while work is actually in progress of the Contract and during periods when work is suspended.

Where the Contractor is comprised of two or more persons, co-partnership or corporations, functioning on a joint venture basis, said Contractor must designate in writing to the City the name of their authorized representative who must have supreme authority to direct the work and to whom orders will be given by the Engineer, to be received and obeyed by the Contractor.

The Contractor must have a sufficient number of superintendents or foremen on the site of the work to adequately supervise and direct each major type of its construction work, and when, in the opinion of the Engineer, the Contractor's required supervisory personnel are considered inadequate, the Contractor, upon request from the City, must promptly provide adequate personnel.

5.8 LINES, GRADES AND MEASUREMENTS

Initial staking out of the work will be done by the Contractor, unless otherwise stated in the Special Provisions. The Contractor will establish control lines and offset lines and set all stakes normally required in order that the Contractor can make the necessary measurements therefrom for the layout of the details of its work without the need for surveyors. Survey stakes and bench marks removed by the carelessness of the Contractor or its employees will be replaced by the City at the Contractor's

expense.

The Contractor must employ skilled personnel for making measurements and skilled mechanics for setting equipment or metal parts that are to be permanently imbedded in or attached to proposed structures. Any inaccuracies in the placing of equipment or metal parts must be remedied by the Contractor at its own cost. Any inaccuracies in the performance of the Contractor's work due to faulty transfer or measurements must be remedied by the Contractor at its own expense.

5.9 INSPECTION

5.9.1 Except as otherwise provided in paragraph 5.9.4 below, all material and workmanship, if not otherwise designated by the Specifications, must be subject to inspection, examination and test by the Engineer at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. The Engineer must have the right to reject defective material and workmanship or require its correction. Rejected workmanship must be satisfactorily corrected, and rejected material must be satisfactorily replaced with proper material without charge therefor, and the Contractor must promptly segregate and remove the rejected material from the premises. If the Contractor fails to proceed at once with the replacement of rejected material and/or the correction of defective workmanship, the Engineer may by Contract or otherwise replace such material and/or correct such workmanship and charge the cost thereof to the Contractor, or may terminate the right of the Contractor to proceed.

5.9.2 The Contractor must furnish promptly without additional charge, all reasonable facilities, labor, and materials necessary for the safe and convenient inspection and tests that may be required by the Engineer. All inspection and tests by the Engineer must be performed in such a manner as not unnecessarily to delay the work. Special, full size, and performance tests must be as described in the Specifications. The Contractor must be charged with any additional cost of inspection when material and workmanship are not ready at the time inspection is requested by the Contractor.

5.9.3 Inspection of material and finished articles to be incorporated in the work at the site must be made at the place of production, manufacture, or shipment, whenever the quantity justifies it, unless otherwise stated in the Specifications; and such inspection and written or other formal acceptance, unless otherwise stated in the Specifications, must be final, except as regards latent defects, departures from specific requirements of the Contract, damage or loss in transit, frauds, or such gross mistakes amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of material and workmanship for final acceptance as a whole or in part must be made at the site. Nothing contained in this paragraph must in any way restrict the City's rights under any warranty or guarantee. No work must be covered by a succeeding operation until the Engineer has had adequate notice and a sufficient opportunity to inspect the work. Any violation of this requirement will be deemed an attempt to defraud the City, and the work covered may be rejected. The Contractor must comply promptly with the instructions of the Engineer. Failure to so comply must be sufficient cause for breach of Contract. The Engineer may, when in the best interests of the City, order a suspension of the work or any part of the work which is not, in his/her opinion, proceeding satisfactorily.

The inspection of the work must not relieve the Contractor of any of its obligations to fulfill its Contract as prescribed.

5.9.4 Should it be considered necessary or advisable by the Engineer at any time before final acceptance of the entire work to make an examination of work already completed, and upon which

adequate notice and sufficient opportunity for inspection was as provided in the previous paragraph, by removing or tearing out same, the Contractor must on request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or non-conforming in any material respect due to fault of the Contractor or its Subcontractors, it must defray all the expense of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the actual direct cost of labor and material necessarily involved in the examination and replacement, plus markup as determined in Section 4.3, must be allowed the Contractor, and it must, in addition, if completion of the work has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.

5.9.5 All inspection by the City, the Engineer, or the Engineer's representative is for the use by the City in determining the acceptability of the project by the Engineer. The Contractor is responsible for the quality of all materials supplied and all workmanship. The Contractor must provide and implement a quality control program independent of the inspections provided by the City. Such quality control program must be designed to ensure materials and workmanship are of first quality in conformance with these specifications and the best practices of the construction industry. The contractor's quality control plan must be submitted to the Engineer for review within 15 days of Notice to Proceed. Approval of the quality control plan by the Engineer does not relieve the contractor of providing sufficient tests or certifications to provide a complete and useable product in accordance with these specifications.

5.10 UNAUTHORIZED WORK AND DEFECTIVE WORK OR MATERIALS

Any work done beyond the scope of the Plans, Specifications, established by the City Engineer, or any extra work done without written authority, will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor's expense. Upon failure on the part of the Contractor to comply promptly with any order of the Engineer made under the provisions of this Section 5, the City Engineer must have authority to cause defective work or materials to be remedied or removed and replaced, and unauthorized work to be removed, and to deduct the cost from any moneys due or to become due the Contractor notwithstanding that such defective work and materials have been previously overlooked by the Engineer and accepted or estimated for payment.

5.11 METHODS AND EQUIPMENT

Equipment not suitable to produce the quality of work required will not be permitted to operate on the project. If the City Engineer or representative observes unsuitable equipment, the City Engineer shall have the right and authority to stop work. Contractor shall not be granted extra additional days or compensation for delay due to Contractor's use of unsuitable equipment.

Plants must be designed and constructed in accordance with general practice for such equipment and must be of sufficient capacity and of such character to insure the production of sufficient material to carry the work to completion within the time limit.

The Contractor must provide adequate and suitable equipment and plants to meet the above requirements and, when ordered by the Engineer, must remove unsuitable equipment from the work and discontinue the operation of unsatisfactory plants.

Each machine or unit of equipment must be operated by a person experienced in handling the particular make of machine or unit of equipment in use, at a speed or rate of production not to exceed that recommended by the manufacturer.

All vehicles used to haul materials over existing highways must be equipped with pneumatic tires. Beam scales for use in batchers, proportioning plants, platform scales, or for other purposes must be equipped with “V” blocks and pivots of hard steel in all hangers or other points of support which are used as parts of the weighing mechanism.

5.12 FINAL INSPECTION AND ACCEPTANCE

The work will be inspected by the City for acceptance promptly upon receipt of notice in writing, for the Contractor, that the work required under the Contract has been performed.

If, in the judgment of the City Engineer, the work has been completed in accordance with the Plans and the Specifications and is ready for acceptance, he/she will so certify and accept the completed work in accordance with the City’s approved procedures. The City Engineer will, in his/her certification to the City, give the date upon which the work was completed. Upon acceptance by the City pursuant to such certification, the date of completion as certified by the City Engineer will be the date of completion of work up to which penalties for liquidated damages, if any, will be computed.

5.13 CLEANUP WORK

During construction the Contractor must keep the site reasonably free and clear from all rubbish and debris. Care must be taken to prevent spillage when hauling is being done on any public road or street, and any such spillage or debris resulting from the Contractor's operation must be immediately cleaned up.

Upon the completion of the work, the Contractor must remove all plants, building, rubbish, unused materials, concrete forms and other like material belonging to it or used under its direction during the construction. In the event of its failure to do so, the same may be removed by the City at the expense of the Contractor.

SECTION 6

CONTROL OF MATERIALS

6.1 CITY-FURNISHED MATERIALS

The Contractor must notify the City as to the time at which it will require those materials which are to be furnished by the City. This notice must be given in sufficient advance of actual need to avoid delay.

City-furnished materials will be delivered Freight on Board (f.o.b.) trucks at the site of the work. The site of the work must be construed as meaning the nearest point to the work which is readily accessible to trucks. The Contractor will be charged with any standby or demurrage charges which may accrue at the point of delivery because of his failure to unload the trucks immediately upon their arrival at the site of work.

The Contractor must receive and be responsible for these materials, storing those which may be damaged by the elements, in a safe, substantial manner until they are used in the work.

Any materials delivered in an acceptable condition to the Contractor by the City and subsequently lost to or rejected by the City due to damages from handling, transporting, storing, flood waters, fire, or for any other reasons before its acceptance in the completed work, must be paid for by the Contractor. The total value of such materials will be deducted from moneys due or becoming due the Contractor. Any condemned material must be immediately and permanently removed from the site of work by the Contractor.

Any of the City's materials, remaining unused after all requirements for said materials have been met, must be promptly returned to the City in acceptable condition. These materials must be returned by the Contractor f.o.b. the City's truck at the site of work and at such points as will be conveniently accessible to City transportation.

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

6.2 MATERIALS TO BE FURNISHED BY THE CONTRACTOR

Unless otherwise specified herein, or on the Plans and Specifications, the Contractor must furnish all materials required for the completion of the Contract. The cost of hauling, storing and handling of all the materials required to be furnished by the Contractor must be included in the unit price proposal in the schedule for the work for which the materials are required.

6.3 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

It must be the Contractor's responsibility to require material suppliers and Subcontractors to furnish materials which meet the requirements of the Specifications. All materials which are to become part of the completed project must be new and must conform to the requirement prescribed therefor in these Specifications or as specified in the Special Provisions.

Unless otherwise waived in writing by the Engineer, the Contractor will be required to furnish the City with certification prepared and signed by the manufacturer and/or supplier to the effect that items furnished meet all the requirements of the Specifications. Such certification must be furnished prior to the use of the material in any part of the construction.

In the case of sand and gravel to be used for concrete construction, the Contractor must notify the City's representative in writing, the sources of the available materials and secure source approval in writing prior to placing order for delivery of this material to the job site.

6.4 WATER AND ELECTRIC POWER

Unless otherwise indicated in the proposal schedules, the responsibility must be upon the Contractor to provide, pay all cost for, and maintain at his own expense an adequate supply of water and electric power of a quality suitable for its construction and domestic purposes.

The Contractor must indemnify, defend, and save harmless the City against any and all claims or suits for damages arising from its acquisition and use of electric power and water.

6.5 MATERIALS AND WORKMANSHIP; WARRANTY

All material furnished by the Contractor must be of the specified quality and equal to approved samples, if samples have been submitted. All work must be performed and completed in a thorough, workmanlike manner, notwithstanding any omission from the Plans and Specifications. All work done and all materials furnished must comply with these Specifications to the satisfaction of the City.

Materials furnished by the Contractor and condemned by the Engineer as being unfit for use must be immediately and permanently removed from the site of work. Unused materials, except such as furnished by the City, must remain the property of the Contractor.

Contractor warrants that all construction services shall be performed in accordance with generally accepted professional standards of good and sound construction practices, all Contract Documents requirements, and all laws, codes, standards, licenses, and permits. Contractor warrants that all materials and equipment shall be new, of suitable grade of their respective kinds for their intended uses, and free from defects. Contractor hereby grants to City for a period of one year following the date of completion its unconditional warranty of the quality and adequacy of all of the Work including, without limitation, all labor, materials and equipment provided by Contractor and its Subcontractors of all tiers. If either prior to completion of the Work, or within one year after completion, any Work (completed or incomplete) is found to violate any of the foregoing warranties (Defective Work), Contractor shall promptly, without cost to City and in accordance with City's written instructions, correct, remove and replace the Defective Work with conforming Work, and correct, remove and replace any damage to other Work or other property resulting therefrom. If Contractor fails to do so, Contractor shall pay all of the City's resulting claims, costs, losses and damages. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, City shall have all rights and remedies granted by law.

6.6 STORAGE OF MATERIALS

Materials must be so stored as to insure the preservation of their quality and fitness for the work. When considered necessary by the Engineer, they must be placed on wooden platforms or other hard, clean surfaces and not on the ground. They must be placed under cover when so directed. Stored materials must be so located as to facilitate prompt inspection.

6.7 SAMPLES AND SPECIMENS

The Contractor must submit specimens or samples of materials to be used in the work as the

Engineer may require.

6.8 TRADE NAMES AND ALTERNATIVES

For convenience in designation on the Plans or in the Specifications, certain equipment or articles or materials may be designated under a trade name of a manufacturer and its catalogue information. The use of alternative equipment or an article or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the approval of the City Engineer, in accordance with the following requirements:

The burden of proof as to the comparative quality and suitability of alternative equipment or articles or materials must be upon the Contractor, and it must furnish, at its own expense, all information necessary or related thereto as required by the City Engineer. The City Engineer must be the sole judge as to the comparative quality and suitability of alternative equipment or articles or materials, and his/her decision must be final.

The price proposal by the Contractor is assumed to be on the basis of trade names specified or designated in the Specifications. Savings resultant from use of a less expensive equal or alternate must accrue to the City and must be subtracted from the unit price for this item.

6.9 REMOVAL OF EQUIPMENT OR MATERIALS

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

6.10 TESTING OF MATERIALS

Unless otherwise specified elsewhere in the Specifications or in the Special Provisions or called for in the Plans, all tests of materials and work for determining compliance with specified requirements must be performed by the City or its authorized representative.

SECTION 7

LEGAL RELATIONS AND RESPONSIBILITY

7.1 LAWS TO BE OBSERVED

The Contractor must keep itself fully informed of all existing and future State and Federal laws and County and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The contractor must at all times observe and comply with all such existing and future laws, ordinances, regulations, orders, and decrees of bodies or tribunals having any jurisdiction or authority over the work; and must indemnify, defend, and save harmless the City and all its officers, agents and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by itself or its employees. If any discrepancy or inconsistency is discovered in the Plans, Drawings, Specifications, or Contract for the work in relation to any such law, ordinance, regulation, order or decree, the Contractor must forthwith report the same to the City Engineer in writing.

7.2 PERMITS

The City will obtain all necessary rights and approvals for the work to occupy properties in streets, highways or railways. The Contractor must obtain all permits and pay any fees connected therewith having to do with its construction operations. The Contractor must furnish the City with a copy of all permits and must fully comply with all conditions and provisions of same.

Bidders must contact railway companies affected by the work under the project and ascertain their requirements in respect to indemnification agreements, bonds and insurance. Upon award of Contract, the Contractor must immediately again contact the railway company and, if required, enter into an indemnification agreement, and furnish bonds and insurance, and pay the fees therefor.

All expenses incurred by the railway company as a result of the Contractor's operations must be borne by the Contractor.

7.3 PATENT CLAIMS

The bidder must include in the price proposal for the work the patent fees or royalties or charges upon any patented article or process which it may furnish or use in the prosecution of the work, and the bidder to whom the Contract is awarded must indemnify, defend and save harmless the City against any legal action that may be brought for infringement of patents upon any articles or processes that may be used by it in the prosecution of the work. The contractor must furnish satisfactory evidence of release of all claims of this nature before the final payment is made upon the Contract.

7.4 SANITARY PROVISIONS

The Contractor must provide and maintain in a neat and sanitary condition such accommodations for the use of its employees as may be necessary to comply with all applicable laws, ordinances and regulations pertaining to the public health and sanitation of dwellings and camps. Enclosed toilets must be provided for the use of the persons employed or engaged on any work under these Specifications.

7.5 RIGHT OF WAY AND RIGHT OF ACCESS

The City will acquire all permanent rights of way or permanent easements required for the constructed project. The Contractor is hereby empowered to use the site for the purposes described in the Specifications.

The responsibility for obtaining the right to enter, remove, alter, or make use of any existing road, culvert, bridge, canal, pipeline, levee, fence or similar barrier, lines of communications or improvement of any nature, or the trespassing on privately owned lands, must be in the hands of the Contractor, and it must indemnify, defend and save harmless the City from any and all claims for such damages occasioned by such entering, removing, altering, using or trespassing.

In case of interference to the work by delay of the City in furnishing permanent rights of way or permanent easements, the Contractor will be allowed an extension of time equivalent to the time lost by unavoidable delay in the completion of the Contract because of the failure to furnish the rights of way on time, but no damages will be allowed or paid for such delay.

Rights of way and/or easements and construction easements have been secured for work sites, and for trails and roadways as considered necessary for ingress and egress to the work site. Such rights and/or easements have been delineated on the Plans. The right to enter, remove, alter, or otherwise make use of adjacent property, roads, utility lines, fences, vegetation and other improvements as not included within the rights of way or easements must be at the sole expense and responsibility of the Contractor.

7.6 PUBLIC CONVENIENCE AND ACCESS

The Contractor must conduct its operations so as to cause the minimum obstruction and inconvenience to traffic and to places of business and residence adjacent to the work. No greater quantity of work must be under construction at any one time than can be properly conducted with due regard for the rights of the public. Where existing streets are not available as detours, all traffic must be permitted to pass through the work with as little inconvenience and delay as possible, unless otherwise provided or authorized. If half the street only is under improvement, the other half must be conditioned and maintained as a detour.

The work must be conducted by tunneling, backfilling or bridging where necessary to provide access to fire hydrants and water gates; driveways to service stations, markets or other places of business requiring public vehicular access; and driveways to private residences, unless the Contractor makes other arrangements satisfactory to the City. Temporary approaches to intersecting streets and alleys must be provided and maintained in good condition. Safe crossings for pedestrians must be provided at intervals of not more than 300 feet.

7.7 STORAGE OF MATERIALS IN PUBLIC STREETS, ROADS OR HIGHWAYS

Construction materials must not be stored in streets unless permitted by the City Engineer.

7.8 PUBLIC SAFETY

Attention is called to the “Construction Safety Order,” “Trench Construction Safety Orders,” “General Safety Orders,” and “Tunnel Safety Rules” of the California Division of Occupational Safety and Health to which the Contractor is required by law to conform. The contractor must provide itself with copies of these rules and orders and must keep a copy of each at the site of its operations and must be governed by the requirements thereof. The requirements concerning Ventilation, General Safety Precautions, Transportation, Roof Inspection, Timbering, and all

rules and regulation concerning the use of explosives are of particular importance.

7.9 STREET CLOSURES, DETOURS, BARRICADES

In addition to the requirements of this paragraph and Section 4 of these Specifications, the Contractor must, unless otherwise permitted by the City Engineer, conform to the requirements for street closures, detours and barricades as stipulated in the Special Provisions. However, the City Engineer may permit deviations from the requirements stipulated therein when such deviations are to the best interests of the City and are approved by the County, City or State authorities concerned.

During the progress of the work, adequate provisions must be made by the Contractor to accommodate the normal traffic along streets and highways immediately adjacent to or crossing the work so as to cause a minimum of inconvenience to the general public.

The Contractor must give due notice to local police and fire departments prior to beginning construction and must cooperate with said departments in complying with their requirements pertaining to emergency vehicles and equipment.

The Contractor must comply with the requirements of the County, City or State authorities concerned in regard to their requirements for closure of streets; the providing of barriers, guards, lights, temporary bridges, flagmen and watchmen; and the posting of proper notices or signals to the public regarding detours and the condition of the work under construction so as to effectively guard the public from danger as a result of the work being done under the Contract. The Contractor must fully comply with such requirements. The Contractor must also be held responsible for compliance with any additional requirements as may arise during the progress of the work. All costs involved in respect to the above requirements will be considered as included in the prices proposal for the various items of work.

The Contractor must furnish, install, and upon completion of the work, remove all signs and warning devices required for directing and protecting the public during construction.

The signs and posting thereof must conform to the current requirements as specified in the manuals covering signs published by the Division of Highways, Department of Public Works of the State of California. Copies of these manuals are on file in the office of the Engineer.

The Contractor must notify the appropriate authorities of any municipality or unincorporated area 24 hours in advance of the start of any construction work being done in said municipality or area.

The provisions of Paragraph 7.18, "Emergencies and Responsibility for Damage," must apply to the precautions and safeguards taken by the Contractor in connection with the closure of streets, barricades, detours, signs, etc., as required by the above authorities.

7.10 USE OF EXPLOSIVES

The use of explosives will not be permitted unless otherwise stated in the Special Provisions. If permitted, the method employed and the quantity of explosives used must at all times be subject to the approval of the Engineer. Explosives must be handled, used and stored in accordance with the provisions and requirements of all applicable laws, ordinances and regulations with respect thereto.

The approval by the Engineer for the use of explosives must not relieve the Contractor from its responsibility to indemnify, defend and save harmless the City from any legal actions or claims brought against it because of or on account of the use of explosives.

7.11 PRESERVATION OF PROPERTY

The Contractor must be held responsible for the protection of the restoration of, or the replacement of, any improvements such as, but not limited to, lawns, trees, shrubs, hedges, fences, walls, sidewalks, driveways, curbs, gutters and pavement existing on public or private property at the start of work or placed there during the progress of work and not being specified or shown on the drawings to be either temporarily or permanently removed. The Contractor must be held responsible for the removal of all USA Markings created within the project limits, and in relation to the project. Replacement or restoration must meet the approval of the Engineer.

With respect to trees, the Contractor must obtain permission from the Engineer and from the jurisdictional agency concerned prior to the removal or trimming of any trees, except where a tree is specifically indicated on the Plans or in the Specifications to be removed. Trees which are so indicated need not be replaced except where otherwise stipulated in the Specifications.

All costs involved in the protection and restoration of existing improvements as herein specified must be included in the prices proposal for the various items of work.

7.12 PRESERVATION OF MONUMENTS

The Contractor must not disturb any monuments or stakes found on the line of improvements without permission from the Engineer, and must bear the expenses of resetting any monuments or stakes which may have been disturbed with such permission. The Contractor must reset all street signs and traffic signs disturbed by it during the progress of the work.

7.13 SAFEGUARDING EXCAVATIONS AND STRUCTURES

In making excavations for the project, the Contractor must be fully responsible for providing and installing adequate sheeting and/or timbering and bracing as may be necessary as a precaution against slides or cave-ins, and to protect all existing improvements of any kind, either on public or private property, full from damage. The Contractor must make necessary repairs to or reconstruction of any such improvements damaged at its own expense and as directed by the Engineer.

The Contractor must remove all shattered rock or other loose material which appears dangerous to workmen or to structures. The fact that such removal may enlarge the excavation beyond the required limits must not operate to relieve the Contractor from the necessity of making such removal, and the Contractor must be entitled to no additional compensation under any Contract item on account of such removal and enlargement.

All material required for sheeting, bracing and shoring must be furnished by the Contractor and upon completion of the work, except for such as may be left in place, must become the property of the Contractor.

7.14 EMERGENCIES AND RESPONSIBILITY FOR DAMAGE

The Contractor, at all times throughout the performance of the Contract, must take all precautions necessary to effectually prevent any accident or other cause of damage to life or property in any place affected by the operations in consequence of work being done under the Contract and in consequence of any unusual conditions which may arise, and must to this end erect and maintain suitable and sufficient barriers, signs, lights, or other necessary protection. This requirement must also apply to interruption or contamination of public water supply, irrigation, or other public services, or from the failure of partly completed works.

If, in the opinion of the Engineer, the precautions taken by the Contractor are not safe or adequate at any time during the life of the Contract, he/she may order the Contractor to take further precautions, and if the Contractor must fail so to do, the Engineer may order the work done by the City forces and charge the Contractor for the cost thereof, such cost to be deducted from any moneys due or becoming due the Contractor. Failure of the Engineer to order such additional precautions, however, must not relieve the Contractor from its full responsibility for public safety.

The Contractor must indemnify, defend and save harmless the City from any legal actions or claims of every name and description brought against it for, or on account of, any injury or damage to person or property received or sustained by any person or persons by or from the Contractor, or any duly authorized Subcontractor or any agent, employee or workman, by or on account of work done under the Contract of any extension or addition thereof caused by its negligence, or by or in consequence of any negligence in guarding the same, or any material used or to be used for the same, or by or on account of any material, implement, appliance or machine used in the construction, or by or on account of any accident or of any act or omission of the Contractor, or of any duly authorized Subcontractor or any agent, employee or workman.

A sufficient amount of the money due the Contractor under the Contract as must be determined to be necessary by the City may be retained until all legal actions or claims for damages as aforesaid have been settled and evidence to that effect has been furnished to the City. This amount may be retained in addition to that provided for in Paragraph 9.5.

All of the above provisions must include suits for loss of business and/or obstruction or inconvenience to business or private property owners.

7.15 DISPOSAL OF MATERIAL OUTSIDE OF CITY'S RIGHT OF WAY

Unless otherwise specified in the Special Provisions, the Contractor must make its own arrangements for disposing of materials outside of City's right of way at its own profit or loss, and it must pay all costs involved therewith.

When any material, including excess or unsuitable excavated earth or other materials are to be disposed of outside of City's right of way, the Contractor must first obtain written permit from the property on whose property the disposal is to be made, and it must file said permit or a certified copy thereof, together with a written release from the property owner, absolving the City from any and all responsibility in connection with disposal of material on said property.

Unless otherwise provided in the Special Provisions, full compensation for all costs involved for disposing of materials, as above specified, must be considered as included in the prices paid for the various Contract items of work, and no additional allowance will be made therefor.

7.16 CONTRACTOR'S RESPONSIBILITY FOR WORK

The submitting of a proposal hereunder must be considered as evidence that the bidder has carefully examined the site of the work with regard to the climatic and physical conditions which will affect construction operations.

The Contractor must, throughout the entire term of the Contract, assume all risks and expense of interference and delay in its operations, and the protection from or the repair of damage to improvements being built by it under the Contract as may be caused by water of whatever quantity from floods, storms, industrial waste, irrigation, underground, or other sources. The Contractor must also assume full responsibility and expense of protecting or removing and returning to the site of

work all equipment or materials under its care endangered by any action of the elements.

Furthermore, the Contractor must indemnify, defend and save harmless the City against all claims or suits for damage arising from his operations in dewatering the work and control or diversion of water.

All works installed by the Contractor in connection with dewatering, control, and diversion of water, but not specified to become a permanent part of the project, must be removed and the site restored, insofar as practical, to original condition at the Contractor's own expense.

7.17 CITY ENGINEER CANNOT WAIVE OBLIGATIONS

It is expressly agreed that neither the City Engineer nor any of his/her agents must have the power to waive any of the obligations of these Specifications for the furnishing by the Contractor of good and suitable material and for performing the work as herein described. Failure or omission on the part of the City Engineer, or any of his/her assistants or agents, to condemn defective or inferior work or materials, must not imply acceptance of the work, nor release of the Contractor from obligations at once to tear out, remove and properly replace the same without compensation, at its own cost and expense at any time, upon the discovery of said defective work and material, prior to the final acceptance of the entire Contract; neither must such failure or omission nor any acceptance by the City or by the City Engineer or any other officer or employee of the City be construed as barring the City at any subsequent time from recovery of damages from the Contractor and its sureties, and of such a sum of money as may be needed to remove and to build anew all portions of the work in which fraud was practiced, or improper work or material hidden.

7.18 RIGHTS IN LAND IMPROVEMENTS

Nothing in these Specifications must be considered as allowing the Contractor to make any arrangements with any person to permit occupancy or use of any land, structure or building within the limits of the Contract for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the City and any owner, former owner, or tenant of such land, structure or building.

7.19 PERSONAL LIABILITY

Neither the City, the City Engineer, nor any of his/her agents or other officer or authorized employee of the City must be personally responsible for any liability arising under the Contract. The Contractor must maintain in full force and effect, during the entire life of the Contract, public liability, property damage and personal injury insurance in amounts not less than specified in the Special Provisions. The Contractor must maintain on file with the City during the entire life of the Contract a memorandum of coverage or other evidence of such insurance, issued by the underwriter. Said insurance referred to must not be cancelled or renewal thereof declined unless notice is mailed to the named insured at least 45 days prior to the effective date or renewal or at least 60 days prior to the effective date of cancellation. In addition, if a public agency is named as an additional insured by way of endorsement or certificate of insurance, notice should be given to said public agency. The Contractor must pay all premiums whether said premiums cover extra work or work under regular contract items.

7.20 REPAIR OF EQUIPMENT

The work of installing, assembling, repairing or reconditioning, or other work of any nature on machinery, equipment, or tools used in or upon the work must be considered a part of the work to

be performed under the Contract, and any laborers, workmen, or mechanics working on such machinery, equipment or tools, unless employed by bonafide commercial repair shops, garages, blacksmith shops, or machine shops, which have been established and operating on a commercial basis for a period of at least two months prior to the award of the Contract, must be subject to all of the requirements relating to labor set forth herein and in these Provisions.

7.21 CONTRACTOR'S LEGAL ADDRESS

The address given in the proposal must be considered the Contractor's legal address, but this may be changed at any time by notice in writing to the City at its office. The delivery to such address, or the depositing in the United States mails in a sealed envelope, postpaid, registered and properly directed to the Contractor's legal address, of any communications must be considered a legal and sufficient service of the same upon the Contractor.

7.22 COOPERATION AND COLLATERAL WORKS

Where two or more contractors are employed in related or adjacent work, each must conduct its operations in such manner as not to cause any unnecessary delay or hindrance to the other. Each contractor must be responsible to the other for all damage to work, to person or property, or for loss caused by failure to finish the work within the specified time for completion.

The Contractor must also coordinate its work and cooperate with contractors or workmen employed by other agencies on or adjacent to the site of the work.

7.23 UTILITIES

Utilities for the purpose of these specifications must be considered as including, but not limited to, pipelines, conduits, transmission lines, and appurtenances of "Public Utilities" (as defined in the Public Utilities Act of the State of California) and those of private industry, businesses, or individuals solely for their own use or for use of their tenants; and storm drains, sanitary sewers, street lighting, and traffic signal systems.

All utility service interrupted or severed by the Contractor's operation must be immediately reinstated by temporary connections, and permanent reconstruction must be made as soon as construction operations permit.

The City has, by a search of known records, endeavored to locate and indicate on the drawings, all utilities which exist within the limits of the work. However, the accuracy or completeness of the utilities indicated on the drawings is not guaranteed. Service connections to adjacent property may or may not be shown on the drawings. It must be the responsibility of the Contractor to determine the exact location of all utilities and their service connections. The Contractor must make its own investigation as to the location and type of existing utilities and their appurtenances and service connections which may be affected by the Contract work and must notify the City as to any utility located by it which has been incorrectly shown or omitted from the drawings.

Work required in connection with utilities because of interference with Contract work will be performed and paid for as specified in the following paragraphs, 7.27.1 through 7.22.8; however, when directed or approved by the City Engineer, changes in line or grade of structure being built may be made in order to avoid utilities. The cost of such changes will be paid for as extra work.

7.23.1 By Other Than the Contractor:

When it is stated in the Special Provisions or indicated on the drawings that a utility is to be

relocated, altered, or reconstructed by other than the Contractor, the City will conduct all negotiations with the owners in respect to such work, and the work will be done at no cost to the Contractor.

7.23.2 By the Contractor Under A Specified Contract Item:

When the bidding schedule contains a separate item covering the relocation, alteration, or reconstruction of a utility by the Contractor, the price proposal for said item must cover all costs involved in such work.

The utility owner's drawings and Special Provisions will give the construction details for the work, and, unless the time at which the work must be done is specified in the Special Provisions, the Contractor must coordinate with the utility owner in respect to when the work is to be done.

7.23.3 By the Contractor But Not Under a Specified Contract Item:

When work on a utility is specified or indicated on the Plans to be done by the Contractor, but is not included as a separate Contract item in the bidding schedule, the City will make all arrangements with owner of the utility in respect to the construction details; however, the Contractor must coordinate with the utility owner as to when the work is to be done. Any costs for such work must be absorbed in the unit prices or included in the lump sum amounts proposal for the various Contract items.

7.23.4 By the Contractor - Service Connections:

The alteration, temporary relocation or reconstruction of service connections to adjacent property must be the responsibility of the Contractor, and the contractor must notify occupants of the affected properties before service is interrupted and make all arrangements with the utility owners regarding requirements of interruption and reconstruction of service connections. The costs for such work on service connections must be absorbed in the unit prices or included in the lump sum amounts proposal for the various Contract items, unless otherwise specified in the Special Provisions. Reconstruction of sanitary sewer house connections must be accomplished in the manner shown on the Plans.

7.23.5 By the Contractor for His Own Convenience:

The temporary relocation or the alteration of any utility desired by the Contractor solely for its own convenience in the performance of the Contract work to a position or condition other than that provided for in the Special Provisions or shown on the Plans must be the Contractor's own responsibility, and the contractor must make all arrangements with the owners of the utility regarding such work. Any cost of such work for the Contractor's own convenience must be absorbed in the unit prices or included in the lump sum amounts proposal for the various Contract items.

7.23.6 By the Contractor or by Others – Unknown Utilities Disclosed during Contract Work:

In the event that a utility is disclosed subsequent to the award of Contract, such utility not being indicated on the drawings, the alteration, relocation, or proper support and protection must be done and paid for as follows:

7.23.6.1 When said utility is found to occupy the space required to be occupied by a part of the permanent works to be constructed under the Contract, or when said utility is more or less parallel with the conduit and, in the case of the pipe conduit, found to be within vertical planes of each side

of the pipe a distance away from the pipe equal to ten inches for pipe 96 inches or less in diameter and equal to twelve inches for pipe greater than 96 inches in diameter or to be within the specified excavation pay lines (when such are specified or shown on the drawings), the City will arrange for the relocation or alteration of said utility or require the Contractor to do same as extra work. However, when said utility is found to cross the excavation laterally, but not to intercept the permanent works to be constructed, then the Contractor will be required to maintain the utility in place at its own expense.

7.23.6.2 When said utility is more or less parallel with and any portion of it does not lie within the vertical planes specified hereinabove (for pipe conduit) or does not lie within the excavation pay lines (when such are specified or shown on the drawings), the Contractor must advise the City thereof, and, in cooperation with the City, provide and place the necessary support for proper protection to insure continuous and safe operation of the utility structure. All costs for such work must be borne by the Contractor, unless it is ascertained by the City that the utility's franchise is such as to require the utility to bear such costs, in which case it must be the responsibility of the Contractor to secure enforcement of said franchise if it so desires.

7.23.7 Responsibility of the Contractor

The Contractor must be held responsible for all costs for the repair of any and all damage to the Contract work or to any utility (whether previously known or disclosed during the work), as may be caused by its operations. Utilities not shown on the drawings to be relocated or altered by others must be maintained in place by the Contractor. Utilities which are relocated by others in order to avoid interference with structures and which cross the project work must be maintained in their relocated positions by the Contractor.

At the completion of the Contract work, the Contractor must leave all utilities and appurtenances in a condition satisfactory to the owners and the City.

7.23.8 Delays Caused by Failure to Relocate Utilities

Where parties other than the Contractor are responsible for the relocation of utilities, in accordance with the provisions of these Plans and Specifications, and a delay in the Contractor's work is caused by the failure on the part of said parties to remove or relocate such utilities in time to prevent such delay. It must be understood that the Contractor must not be entitled, as a result of such delay to its work, to damages or additional payments over and above the Contract price. If delays in the Contractor's work are caused by the reason mentioned hereinabove, the Contractor must be entitled to an extension of time. The length of such extension of time will be determined by the City, with consideration as to the effect of the delay on the project as a whole.

In order to minimize delays to the Contractor caused by the failure of other parties to relocate utilities which interfere with construction works, the Contractor, upon request to the City, may be permitted to temporarily omit the portion of work affected by the utility. The portion thus omitted must be constructed by the Contractor immediately following the relocation of the utility involved. Should the omitted portion of the work consist of concrete pipe, the Contractor may complete said portion by constructing a field joint.

Unless otherwise specified, where sewers, drainage water, gas or any other conduits and related structures and appurtenances which have been abandoned or which are to be abandoned as a result of the construction of this project are found to interfere with construction, the interfering portions must be removed and the remaining exposed portions sealed with either a wall of concrete not less

than six inches thick. All salvable castings or steel parts which interfere with construction must be removed, and the Contractor must contact the owners and, if required, must deliver such materials f.o.b. the owner's trucks at the site of the work; otherwise, such material must become the property of the Contractor and must be disposed of by the contractor away from the site of work.

The cost of all such work must be absorbed in the prices proposal for the various items of work, unless it is ascertained that the franchise of the former owner is such as to require it to bear such costs, in which case it must be the responsibility of the Contractor to secure enforcement of said franchise if it so desires.

SECTION 8

PROSECUTIONS AND PROGRESS

8.1 SUBCONTRACTS

The Contractor may sublet the Contract work only in accordance with the provisions of these Specifications and with the consent of the City. The prime Contractor must be held responsible to see that its subcontractors and material suppliers conform to all the provisions of these Specifications. If the Contractor, after complying with these conditions, must sublet any portion of the proposed work to a Subcontractor, the Contractor under the original Contract must remain directly responsible to the City for all work being performed by it or by any Subcontractor under it, and all obligations imposed upon the Contractor in the original Contract must be equally binding upon any Subcontractor under it. The City will deal directly with and make all payment to the original Contractor. Contractor understands and acknowledges that the Subletting and Subcontracting Fair Practices Act (as set forth in the California Public Contracts Code) applies to the Contract and Contractor Agrees to comply with the terms of said Act.

8.2 ASSIGNMENT

The Contractor must not assign the Contract or sublet it as a whole without the written consent of the City. The Contractor must not assign or permit the assignment of or any lien on any money due or to become due to it hereunder without the proper consent of the City.

8.3 PROGRESS OF THE WORK

Time is of the essence in this Contract. Unless otherwise provided in the Special Provisions, the Contractor must begin work not later than 15 calendar days after the date of the Notice to Proceed, and the contractor must prosecute the work with due diligence so as to complete the work within the time specified in the Special Provisions or within such extension of time as may be granted.

Should the Contractor begin work in advance of receiving notice that the Contract has been approved as above provided, any work performed by it in advance of said date of approval must be considered as having been done by it at its own risk and as a volunteer, unless such Contract is so approved.

8.4 CHARACTER OF WORKMEN

The Contractor must employ none but skilled foremen and workmen upon work requiring special qualifications. When required by the Engineer, the contractor must discharge from the work and must not again employ without the consent of the Engineer any employee who is incompetent, disorderly, abusive, dangerous, insubordinate, or who in any way attempts to interfere with the employees of the City in the inspection and supervision of the work.

Any representative of the Contractor who is proven to have deliberately given false information about the performance of any part of the work must be discharged if so ordered by the City Engineer.

8.5 TEMPORARY SUSPENSION OF WORK

The City Engineer may order the Contractor to suspend work when, in his/her opinion, the conditions are such as to prevent the work being properly carried out. Such conditions may include: war, government regulations, labor disputes, strikes, fire, floods, adverse weather or elements, inability to obtain material, labor or equipment, required extra work, or other specific as may be further described in the Specifications. When delay is caused by such order, an extension of time

may be granted when the conditions, in the opinion of the City Engineer, are such as could not have reasonably been foreseen. It is agreed that under no circumstances must the Contractor be excused from performance or entitled to any extra compensation or reimbursement because of any such suspension.

8.6 TIME OF ESSENCE, LIQUIDATED DAMAGES, EXTENSION OF TIME BY CITY

Time is of the essence, and, in case all the work called for under the Contract in all parts and requirements is not finished or completed by the date set forth in the Special Provisions, it is agreed by the parties to the Contract that circumstances and conditions as reflected by records of the City are such that material damage will be sustained by the City, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the City will sustain in the event of any by reason of such delay. It is, therefore, expressly agreed that the Contractor will pay to the City the sum stated in Special Provisions per day for each and every calendar days delay in finishing the work beyond the date prescribed; and the Contractor agrees to pay said liquidated damages as herein provided. In case the same are not paid, Contractor agrees that the City may deduct the amount thereof from any monies due or that may become due the Contractor under the Contract.

It is further agreed that in case the work called for under the Contract is not finished and completed in all parts and requirements by the date specified, the City must have the right to extend the time of completion or not, as may be deemed to best serve the interest of the City. If it is decided to increase said time, said City must further have the right to charge to the Contractor, its heirs, assigns or sureties and to deduct from the final payment for the work all or any part, as may be deemed proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the Contract and which accrue during the period of such extension, except that cost of final surveys and preparation of final estimate must not be included in such charges.

The time of completion will be extended and the Contractor must not be assessed with liquidated damages during any delay beyond the day named for completion of the work caused by Acts of God or acts of the public enemy, fires, floods, epidemics, quarantine restrictions, strikes, and freight embargoes or delay of subcontractors due to such causes, provided the Contractor must notify the Engineer in writing of such cause or causes of delay within ten (10) days from the beginning of any such delay and includes in each monthly pay request the number of days of such delay which occurred in said pay period. Subject to and until entry of a judgment of a court of competent jurisdiction holding contrary to the decision of the Engineer's ascertainment of the facts of existence of such a cause of delay, the extent of the delay and of what constitutes a reasonable extension of time of completion in consequence thereof must be final and conclusive. Failure to give notice of cause of such time delay and failure of inclusion of the Contractor's request for extension based thereon in the monthly pay request as hereinabove provided will be deemed a waiver of right to extension of time for such cause subject only to impossibility of compromise therewith by the Contractor.

It is agreed that under no circumstances must the Contractor be excused from performance or entitled to any extra compensation or reimbursement because of any delay occasioned by or in any way arising out of any Acts of God or acts of the public enemy, fires, floods, epidemics, quarantine restrictions, strikes, and freight embargoes or delay of subcontractors due to such causes.

8.7 DEFAULT BY CONTRACTOR

If the Contractor fails to begin delivery of material and equipment, to commence the work within the time specified, to maintain the rate of delivery of material, to execute the Work in the manner and at such locations as specified, or fails to maintain the work schedule which will insure the Agency's interest, or, if the Contractor is not carrying out the intent of the Contract, the Agency may serve written notice upon the Contractor and the Surety on its Performance Bond demanding satisfactory compliance with the Contract.

The Contract may be canceled by the City without liability for damage, when in the City's opinion the Contractor is not complying in good faith, has become insolvent, or has assigned or subcontracted any part of the work without the City's consent. In the event of such cancellation, the Contractor will be paid the actual amount due based on Contract unit prices or lump sums proposal and the quantity of the work completed at the time of cancellation, less damages caused to the City by acts of the Contractor. The Contractor, in having tendered a Proposal, must be deemed to have waived any and all claims for damages because of cancellation of Contract for any such reason. If the City declares the Contract canceled for any of the above reasons, written notice to that effect must be served upon the Surety. The Surety must, within 5 days, assume control and perform the work as successor to the Contractor.

If the Surety assumes any part of the work, it must take the Contractor's place in all respects for that part, and must be paid by the City for all work performed by it in accordance with the Contract. If the Surety assumes the entire Contract, all money due the Contractor at the time of its default must be payable to the Surety as the work progresses, subject to the terms of the Contract.

If the Surety does not assume control and perform the work within 5 days after receiving notice of cancellation, or fails to continue to comply, the City may exclude the Surety from the premises. The Agency may then take possession of all material and equipment and complete the work by City forces, by letting the unfinished work to another Contractor, or by a combination of such methods. In any event, the cost of completing the work must be charged against the Contractor and its Surety and may be deducted from any money due or becoming due from the Agency. If the sums due under the Contract are insufficient for completion, the Contractor or Surety must pay to the City within 5 days after the Notice of Completion resolution, all costs in excess of the sums due.

The provisions of this subsection must be in addition to all other rights and remedies available to the City under law.

8.8 WORK AT NIGHT – Not Applicable

8.9 MAXIMUM LENGTH OF OPEN TRENCH

Except by special permission of the Engineer, the maximum length of open trench where prefabricated pipe is used must not be greater than 500 feet, or the distance necessary to accommodate the amount of pipe installed in a single day, whichever is the greater. The distance is the collective length, including excavation, construction, pipe laying, backfilling, and compaction at any one location.

Except by special permission of the Engineer, the maximum length of open trench in any one location where concrete structures are poured in place will be that which is necessary to permit the uninterrupted progress of construction of the concrete structure, with construction pursued as

follows: excavation, setting of reinforcing steel, pouring of floor slab, walls, and cover slab or arch are to follow each other without any one of these operations preceding the next nearest operation by more than 200 feet.

Except by special permission of the Engineer, the maximum length of open trench in any one location where prefabricated concrete box conduit is used will be that which is necessary to permit the uninterrupted progress of construction of the concrete structure with construction pursued as follows: excavation, setting of reinforcing steel, pouring of floor slab, erection of side walls, erection of cover slab, and pouring of filler spaces are to follow each other without any one of these operations preceding the next nearest operation by more than 200 feet.

8.10 LIMITED ACCEPTANCE OF WORK

At any time during the progress of the work, the City may, upon written notice to the Contractor, take over and utilize the whole or part of the work, or appurtenance thereto which has been completed, giving, if desired, permits to utilize the same. Such use by the City must constitute a limited acceptance of that part of the work so taken over and utilized which must relieve the Contractor and its sureties from responsibility for any damage to, or defect in, that part of the work not inherent in its construction which may be caused by the use of such part by the City or by property owners under its permits.

SECTION 9

MEASUREMENT AND PAYMENT

9.1 MEASUREMENT FOR PAYMENT

Measurement and calculations of quantities for payment will be as hereinafter specified for the particular material to be furnished or class of work to be performed, unless otherwise specified in the Special Provisions.

It must be understood that the unit prices or lump sum amounts proposal must include full compensation for furnishing all labor, materials, tools, and equipment and doing all work shown on the Plans or stipulated in the Specifications for that particular item of work, unless otherwise specified in the Special Provisions.

When payment is specified to be made on the basis of weight, the weighing must be done on certified platform scales, and the Contractor must furnish the Engineer with the duplicate Certified Weighmaster's Certificates showing the actual net weights. When weighing is done on certified scales at a mixing plant, duplicate weight delivery tickets will be accepted. One ticket must be furnished to the inspector at the plant and one ticket to the Engineer at the site of work. The City will accept the certificates as evidence of the weight delivered.

9.2 SCOPE OF PAYMENT

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

9.3 DEDUCTIONS FROM PAYMENTS

The City may, at its option and at any time, retain out of any amounts due the Contractor sums sufficient to cover any unpaid claims, provided that sworn statements of said claims must have been filed with the City.

9.4 SCHEDULE OF VALUES

Prior to the Contractor's application for the first progress payment, Contractor must submit a detailed breakdown of its bid by scheduled Work items and/or activities, including coordination responsibilities and project record document responsibilities. Where more than one subcontractor comprises the work of a work item or activity, the Schedule of Values must show a separate line item for each subcontract. Contractor must furnish such breakdown, of the total Contract Sum, by assigning dollar values (cost estimates) to each applicable Progress Schedule network activity, which cumulative sum equals the total Contract Sum. The format and detail of the breakdown must be as directed by City to facilitate and clarify future progress payments to Contractor for direct Work under Contract Documents. This breakdown must be referred to as the Schedule of Values.

Contractor's overhead, profit, insurance, cost of bonds and/or other financing, as well as "general conditions costs," (e.g., site cleanup and maintenance, temporary roads and access, off site access roads, temporary power and lighting, security and the like), must be prorated through all activities so that the sum of all the Schedule of Values line items equal Contractor's total Contract Sum.

City will review the breakdown in conjunction with the Progress Schedule to ensure that the dollar amounts of this Schedule of Values are, in fact, fair market cost allocations for the Work items listed. Upon favorable review by City, City will accept this Schedule of Values for use. City must be the sole judges of fair market cost allocations.

Any attempt to increase the cost of early activities, i.e., "front loading," will be rejected by City, resulting in a complete reallocation of monies until such "front loading" is corrected. Repeated attempts at "front loading" may result in suspension or termination of the Work or refusal to process progress payments, until such time as the Schedule of Values is acceptable to City.

9.5 PAYMENTS AND MONTHLY ESTIMATES

The City Engineer will, after the award of Contract, establish a monthly payment closure date. This date will be the date which will terminate each working month during the life of the Contract for which a monthly payment is payable. The Contractor will, within 5 days after the established monthly payment closure date of each month during the period in which work is being performed, make and deliver to the City two signed copies of monthly Contract payment applications stating the amount or percentage of work completed according to the Contract, as of the closure date established, estimated on the basis of the unit or lump sum Contract prices. No allowance will be made for materials and equipment not incorporated into the work. The City will independently verify the Contractor's monthly payment application and create a monthly progress payment request. The City's determinations for the amounts or percentages of work completed are final.

Except as otherwise provided in a labor compliance program applicable to the Work or as otherwise required by Owner, concurrently with each Application for Payment, Contractor shall submit to Owner Contractor's and its Subcontractors' certified payroll records required to be maintained pursuant to Labor Code Section 1776 for all labor performed during pay periods ending during the period covered by the Application for Payment

The City will prepare a warrant in an amount sufficient with all previous payments to make the aggregate 95 percent of the amount earned as certified, provided, however, that the City at any time after 50 percent of the work has been completed, if it finds that satisfactory progress is being made, may make any of the remaining partial payments in full, less authorized deductions.

The partial payments made as the work progresses will be payments on account and must in no way be considered as an acceptance of any part of the work or materials of the Contract, nor must they in any way govern the final estimate. Extra work will be paid for as specified in Section 4.3.3. Payments for unit price items will be made upon the basis of the unit prices proposal and the quantities of work done, calculated as hereinafter specified, for each particular item of work. However, where several types of work are included in a unit price item, the City will make partial payment for the portions of such work as are completed at the time of making the monthly estimates. All monies due the Contractor under the Contract will be paid on demand by the City, prepared and approved as required by law, and it is understood that any delay in the preparation, approval and payment of these demands will not constitute a breach of Contract on the part of the City.

Payments for lump sum items will be based upon the lump sum proposal and the City's estimate as

to the percentage of completion.

9.6 PAYMENT FOR EXTRA WORK

Payment for extra work will be made as provided by Section 4.3.3. Where payment is to be made on a force account basis, the Contractor and the City's representative must compare records of extra work performed by the Contractor on a force account basis at the end of each day. Copies of these records will be made in duplicate by the City's representative and must be signed by both the inspector and the Contractor's Representative, one copy being forwarded to the Contractor and one copy to the City. Bills for extra work must be signed by the Contractor and submitted to the City.

Each month the Contractor must include in the monthly payment application an estimate of the amount or cost of extra work performed as included in approved Contract Change Orders. The Contractor must submit, at the same time it returns the signed monthly payment application, a complete itemized statement of claim for all costs of extra work performed. Failure to include such a statement or claim for extra work for the pay period, or failure to deliver a complete statement for extra work in excess of that estimated by the City Engineer, must constitute a waiver on the part of the Contractor to any claim for payment for extra work not therein included.

9.6.1 Method of payment for extra work approved as specified in Section 4 under unit price or lump sum amounts or at stipulated prices must be the same as that for Contract items as set forth in this Section.

9.6.2 Payment for extra work by Contractor's force account must be made in the following manner:

Upon verification by the Engineer of the Contractor's statement for force account work, a claim will be prepared upon the proper claims form for approval of the City Engineer and presentation to the City Manager or Assistant City Manager, for his approval and direction.

9.7 FINAL PAYMENT

Upon completion of the Contract work, the City Engineer will, upon acceptance of the work by the City and 35 days after the date of recordation of the Notice of Completion, present the Contractor's claim for the balance of the total Contract price, less any sums which may lawfully be retained under the Contract.

Unless qualified by the Contractor under the procedure established in Section 9.5 hereof, the final progress payment request of the City Engineer must be taken as conclusive evidence of the amount of work done under the Contract. If the Contractor qualified its acceptance of the final progress payment and the parties fail to agree prior to the termination of the 35-day period after recordation of Notice of Completion, the final payment must not be delayed but must be made in accordance with the City Engineer's determination, subject to further claim of the Contractor and compliance by City with court order.

SECTION 10

CLAIMS BY CONTRACTOR

10.1 OBLIGATION TO FILE CLAIMS FOR DISPUTED WORK

10.1.1 Should it appear to Contractor that the Work to be performed or any of the matters relative to the Contract Documents are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of the Contract Documents, or should any dispute arise regarding the true value of any work performed, work omitted, extra work that the Contractor may be required to perform, time extensions, payment to the Contractor during performance of this Contract, performance of the Contract, and/or compliance with Contract procedures, or should Contractor otherwise seek extra time or compensation FOR ANY REASON WHATSOEVER, then Contractor shall first follow all other procedures set forth in the Contract Documents and Standard Specifications. If a dispute remains, then Contractor shall give written notice to City that expressly invokes this Section 10. City shall decide the issue in writing within 15 days; and City's written decision shall be final and conclusive. If Contractor disagrees with City's decision, or if Contractor contends that City failed to provide a decision timely, then Contractor's SOLE AND EXCLUSIVE REMEDY is to promptly file a written claim setting forth Contractor's position as required herein.

10.1.2 Contractor shall present as its claims all Subcontractor, sub-Subcontractor and supplier claims of any type, and prove them under the terms of the Contract Documents. City shall not be directly liable to any Subcontractor, any supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages or extra costs of any type arising out of or resulting from the Project.

10.2 FORM AND CONTENTS OF CLAIM

10.2.1 Contractor's written claim must be submitted via registered mail or certified mail with return receipt requested and must identify itself as a "Claim" under this Section 10 and must include the following: (i) a narrative of pertinent events; (ii) citation to contract provisions; (iii) theory of entitlement; (iv) complete pricing of all cost impacts; (v) a time impact analysis of all time delays that shows actual time impact on the critical path; (vi) reasonable documentation supporting items (i) through (v); and (vii) a verification under penalty of perjury of the claim's accuracy. The Claim shall be submitted to City within thirty (30) calendar days of receiving City's written decision, or the date Contractor contends such decision was due, shall be priced like a change order, and must be updated monthly as to cost and entitlement if a continuing claim. Routine contract materials, for example, correspondence, RFI, change order requests, or payment requests shall not constitute a Claim. Contractor shall bear all costs incurred in the preparation and submission of a Claim.

10.2.2 Upon receipt of a Claim, City shall conduct a reasonable review of the Claim. Within 45 days, or such expended period as City and Contractor may agree, City shall provide Contractor with a written statement identifying what portion of the claim is disputed and what portion is undisputed.

10.2.3 If City's governing body must approve City's response to the Claim and the governing body has not met within the 45-day (or extended) period, then City shall provide its written statement within three (3) days of the governing body's meeting.

10.2.4 City shall pay the undisputed portions of the Claim within 60 days of the issuance of a written statement identifying an undisputed portion.

10.2.5 Claims must be submitted on or before the day of final payment. Claims not submitted before final payment are deemed waived.

10.2.6 Notwithstanding and pending the resolution of any claim or dispute, Contractor shall diligently prosecute the disputed work to final completion in accordance with City's determination.

10.3 INFORMAL CONFERENCE AFTER CLAIM SUBMISSION

10.3.1 If the Contractor disputes City's response to its Claim, including a failure to respond, it may submit via registered mail or certified mail, return receipt requested, a written demand for an informal conference to meet and confer for settlement of the issues in dispute. City shall schedule such a meet and confer conference within 30 days for settlement of the dispute.

10.3.2 Within ten (10) days of the meet and confer conference City shall provide Contractor with a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed.

10.3.3 City shall pay the undisputed portions of the Claim within 60 days of the issuance of a written statement identifying an undisputed portion.

10.4 MEDIATION

10.4.1 If the Contractor disputes City's statement provided under Paragraph 10.3(B) it shall inform City and the parties shall mutually agree to a mediator within 10 business days of the written statement. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

10.4.2 Mediation shall be confidential and non-binding. Unless otherwise agreed, by the parties or as provided in this Paragraph 10.4, the mediation shall be pursuant to the construction mediation procedures of JAMS and held at the JAMS office closest to the Project site.

10.4.3 The cost of mediation shall be equally shared by all parties to the mediation. The parties shall, prior to the commencement of mediation upon notice of the other party, exchange relevant, non-privileged project documents in compliance with Code of Civil Procedure Sections 2031.010, et seq. The parties may agree mutually to engage in additional discovery prior to mediation. Should the parties proceed with additional discovery, they shall, unless mutually agreed otherwise, comply with Code of Civil Procedure Sections 2019, et. seq. The mediator will undertake to resolve any discovery disputes relating to the mediation.

10.4.4 For Claims under \$375,000, unless the parties agree otherwise in writing, mediation pursuant to this Paragraph 10.4 shall excuse the mediation obligation under Public Contract Code Section 20104.4(a).

10.4.5 If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be resolved as otherwise provided by the Contract and applicable law.

10.4.6 Following receipt of a Claim, the parties may mutually agree, in writing, to waive the mediation requirements of this Paragraph 10.4 and proceed to the commencement of a civil action.

10.4.7 All statutes of limitation shall be tolled from the date of the demand for mediation until a date two weeks following the mediation's conclusion.

10.5 OTHER MATTERS

10.5.1 The provisions of this Section 10 constitute a non-judicial claim settlement procedure that, pursuant to Government Code Section 930.2, shall constitute a condition precedent to submission of a valid Government Code Claim under the Government Code. Contractor shall bear all costs incurred in the preparation, submission and administration of a claim. Any claims presented in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein and the previous dispositions under Paragraphs 10.3 and 10.4 above of the claims asserted. No suit may be brought against City arising out of or in connection with the Project unless and until Contractor presents to City a statutory Government Code Claim, in accordance with Government Code Sections 910, et seq. Pursuant to Government Code Section 930.2, the one-year period in Government Code Section 911.2 shall be reduced to 150 days from either accrual of the cause of action, substantial completion or termination of the contract, whichever occurs first; in all other respects, the Government Code shall apply unchanged.

10.5.2 Failure to submit and administer claims as required in Section 10 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) or issue(s) not raised in a timely protest and timely claim submitted under this Section 10 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

10.5.3 Contractor shall submit Subcontractor claims in the same manner as other Claims. In the event a Subcontractor (on behalf of the Subcontractor or a lower-tier subcontractor) requests Contractor in writing to present a Claim to the City and furnishes reasonable documentation supporting the Claim, Contractor shall, within 45 days of receipt of the written request, notify the Subcontractor in writing as to whether the Contractor presented the claim to City and, if the Contractor did not present the Claim, provide the Subcontractor with a statement of the reasons for not doing so.

10.5.4 All waivers or modifications of this Section 10 may only be made a writing signed by City and Contractor, and approved as to form by legal counsel for both; oral or implied modifications shall be ineffective.

10.5.5 Any failure by City to respond within any time frame contained in Paragraphs 10.2 through 10.5 of this Section shall result in the Claim being deemed rejected in its entirety. No failure to meet a time requirement shall constitute an adverse finding with regards to the merits of the Claim or the responsibility or qualifications of the Contractor.

10.6 COMPLIANCE WITH STATUTORY PROCEDURES

10.6.1 The foregoing provisions of Paragraphs 10.2 through 10.5 are intended to comply with Public Contract Code Section 9204 and, to the extent applicable, Public Contract Code Section 20104, et seq. In the event of any conflict, the applicable Public Contract Code provision will apply.

PART 4 – TECHNICAL SPECIFICATIONS

12.1 DESCRIPTION OF BID ITEMS

Item 1 - Mobilization: Includes project management tasks such as mobilization, organizing the work, submitting and revising (if necessary) materials submittals, ordering parts and equipment, training, public notifications, coordinating with subcontractors, and other tasks necessary to plan and execute the work to the City's satisfaction.

Item 2 - Traffic Control: Includes cost of materials, equipment and labor to provide traffic control for lane or shoulder closures and/or temporary stop control.

Item 3 – Remove and Become Property of Contractor existing Traffic Signal Backplates and replace with Yellow retroreflective border backplates: Includes cost of materials, equipment, labor to remove existing traffic signal backplate from existing traffic signal head mounted on signal mast arm or signal pole and furnish and install a new yellow retroreflective border backplate (3-section, 4-section, or 5-section, as noted on the plans) on existing or new 12” traffic signal heads as shown on the plans.

Item 4 - Remove and Become Property of Contractor 8" Traffic Signal Heads and signal mountings and replace with 12" signal heads and mountings: Includes cost of materials, equipment and labor to remove existing 8” traffic signal head and mounting from signal mast arm or signal pole and furnish and install new 12” signal head (3-section, 4-section, or 5-section as noted on the plans), furnish and install mounting bracket on mast arm or signal pole, remove and dispose of existing traffic signal mounting, configure new or existing signal heads on new mounting, and terminate conductors on signal heads to provide operation as shown on the plans.

Item 5 - Remove and Become Property of Contractor pedestrian signal head and mounting and replace with countdown pedestrian signal head and mounting: Includes cost of materials, equipment and labor to remove existing pedestrian signal head and mounting from signal pole and furnish and install new countdown pedestrian signal head and mounting on signal pole, remove and dispose of existing pedestrian signal mounting, furnish and install new mounting, configure new countdown pedestrian signal heads on new mounting, and terminate conductors on countdown pedestrian signal heads to provide operation as shown on the plans.

Item 6 - Remove and Become Property of Contractor pedestrian push button assembly and replace with Accessible Pedestrian Signal push button assembly: Includes cost of materials, equipment and labor to disconnect existing push button conductors, remove and dispose existing pedestrian push button assembly and replace and furnish and install an Accessible Pedestrian Signal push button assembly mounted on an existing signal pole or new push button post, filling holes in the existing signal mast arm pole or Type 1 pole galvanized steel plugs or bolts, furnish and install new conductors in existing conduit between the pedestrian signal head and the Accessible Pedestrian Signal for the respective pedestrian phase, and terminate push button conductors on Accessible Pedestrian Signal to provide operation as shown on the plans.

Item 7 - Remove and Become Property of Contractor existing pedestrian push button post and replace with Accessible Pedestrian Signal push button post: Includes cost of materials, equipment and labor to remove and dispose of the existing pedestrian push button post, furnish and install an Accessible Pedestrian Signal push button post on existing pedestrian push button post foundation, disconnect existing push button assembly conductors, remove existing pedestrian push button assembly and mount and install an Accessible Pedestrian Signal push button assembly and terminate push button conductors on Accessible Pedestrian Signal to provide operation as shown on the plans.

Item 8 - Remove and Salvage existing Emtrac EVP system and replace with GTT Opticom GPS/Radio EVP system: Includes cost of materials, equipment and labor to remove and salvage existing Emtrac EVP system and mountings from signal or street light pole and replace and furnish and install GPS/Radio EVP unit and mountings on existing traffic signal pole or street light pole, furnish and install GPS/Radio EVP cable in existing pull boxes and existing conduits from GPS/Radio EVP unit to the traffic signal cabinet, disconnect, remove and dispose of Emtrac EVP conductors from unit to traffic signal cabinet, remove and dispose of Emtrac card rack and Emtrac phase selector inside traffic signal cabinet, and furnish and install GPS/Radio EVP system inside traffic signal cabinet, consisting of GPS/Radio cable, multimode phase selector, auxiliary interface panel, and GPS card rack, configuring and programming the GPS/Radio EVP system.

Item 9 - Furnish and Install GTT Opticom GPS/Radio EVP system - Includes cost of materials, equipment and labor to furnish and install GPS/Radio system and mountings on signal pole or street light pole, installing GPS/Radio cable in existing pull boxes and existing conduits from GPS/Radio EVP unit to the traffic signal cabinet, furnish and install GPS/Radio EVP system inside traffic signal cabinet, consisting of GPS/Radio cable, multimode phase selector, auxiliary interface panel, and GPS card rack, configuring and programming the GPS/Radio EVP system.

Item 10 - Furnish and Install new Iteris Vantage Vector video detection system - Includes cost of materials, equipment and labor to furnish and install Iteris Vantage Vector video detection system and mountings on signal mast arm or signal pole, furnish and install video detection cables between cameras and traffic signal cabinet, furnish and install video detection system equipment inside traffic signal cabinet, programming and configuring video detector zones to provide the operations shown on the plans.

Item 11 – Remove and become property of Contractor existing traffic signal controller and replace with Model 2070LX controller: Includes cost of materials, equipment and labor to disconnect, remove and dispose of existing Type 170 controller unit, Type 2070, or Type 2070E controller unit, remove existing conflict monitor (at Type 170 controller unit locations only), furnish and install EDI Model 2010 ECL conflict monitor, coordinate with software vendor to obtain timing sheets, furnish, install and program new Type 2070LX controller unit with D4 software to provide the operations shown on the plans, replacing conductors for the new phasing shown on the plans, furnishing and installing new load switches or removing and salvaging existing load switches, re-terminating field conductors for the new phases to provide the operations shown on the plans.

Item 12 - Furnish and install Alpha battery backup system and external BBS cabinet on side of existing traffic signal cabinet: Includes cost of materials, equipment and labor to furnish and install an external BBS cabinet and BBS system and mounted to the side of the existing traffic signal cabinet, replace 120V service conductors and route to BBS and then to service terminals per BBS manufacturer's recommendations.

12.2 TRAFFIC CONTROL FOR TRAFFIC SIGNAL SHUTDOWNS

Traffic signal shutdowns shall be limited to the hours of 9:00 a.m. to 4:00 p.m., Mondays to Fridays. Contractor shall provide typical traffic control plans as part of Materials Submittals for three-leg and four-leg intersections. Traffic Control Plans shall conform to Section 6 of the most recent California Manual on Uniform Traffic Control Devices.

At a minimum, Contractor shall provide temporary Stop signs on temporary mountings that place the signs at 7 feet from pavement surface to bottom of sign, at least two signs per approach (one on the right sidewalk and one in the median, or if no median, one each on the right and left sidewalks-pedestrian access shall be always maintained). Signs shall be covered or turned away from traffic while the traffic signal is in normal operations.

Temporary warning signs with text "CHANGED CONDITIONS AHEAD" and red or orange warning flags shall be posted on each modified approach the day work on the traffic signal modification begins. Signs and flags shall remain in place for 90 days after signal work is completed. Signs shall not be placed in vehicle lanes, shall be positioned so at least 3-foot clear space is available in bike lanes and 4-foot clear space is available on sidewalks.

12.3 SIGNS

Signs and mounting brackets shall conform to section 82, "Signs and Markers" of the Caltrans Standard Specifications, the California Manual on Uniform Traffic Control Devices (most recent edition), and the Caltrans Sign Specification (most recent edition), and these Special Provisions.

Sign panels shall be aluminum and sign legends shall be retroreflective.

12.4 SIGNALS AND STREET LIGHTING SYSTEMS

Traffic signal modification work shall conform to the provisions in Section 86, "General," and Section 87, "Electrical Systems," and all referenced sections, of the 2022 (most recent revision) Caltrans Standard Plans and Specifications and these Special Provisions.

12.4.1 Maintaining Existing Signal Systems

See Section 87.21.03B in the Standard Specifications. Contractor shall call Underground Service Alert at 811 or 800-642-2444 a minimum of 5 working days before beginning excavation.

Contractor shall coordinate with City of Rohnert Park staff to ensure all traffic signal conduits are marked with special care for traffic signal interconnect.

Traffic signal shutdowns shall be limited to the hours of 9:00 a.m. to 4:00 p.m. Manual traffic control shall be provided near schools, if school is in session, during morning and evening school access times when traffic signals are shut down.

12.4.2 Equipment Lists and Drawings

Submittals will be required for the following items:

- Covid Protocol
- Model 2070LX Controller unit
- Controller Software
- Vehicle Signal Faces and Signal Heads
- Yellow retroreflective border backplates
- Vehicle and Pedestrian signal mountings
- Accessible Pedestrian Signal Push Button Post
- Conductors
- Countdown Pedestrian Signal Heads
- Accessible Pedestrian Signals
- Alpha Battery Backup System
- GTT Opticom GPS/Radio EVP system
- Iteris Vantage Vector Video Detection System
- Schedule
- Warning flags
- Traffic Control Plan

12.4.3 Signal Conductors And Wiring

Conductors shall be per Caltrans Standard Specifications Section 86-1.02F “Conductors”. Existing Emtrac EVP conductors in traffic signal mast arm poles that will no longer be needed shall be removed and disposed of by the Contractor. Existing Emtrac EVP conductors that will no longer be needed shall be disconnected from terminals in the controller cabinet and removed and become property of the contractor.

New conductors for GPS/Radio cable shall be tagged in each pull box and the controller cabinet. Tags shall be embossed metal or heavy-gage plastic with permanent ink text and show text “GPS/Radio”.

12.4.4 Model 2070LX Controller Unit

Furnish and install controller unit that meets Caltrans TEES (including all addenda) and is listed on their Approved Materials List/Qualified Products List. The controller shall have Unit Chassis

2070-1B CPU, 2070-2A Field I/O, 2070-3B Front Panel, 2070-4B Power Supply, and other standard items as required to provide the operations shown on the plans.

Furnish and install Fourth Dimension-D4 software, and two Data Keys as described in Section 9.2.6 of the Caltrans TEES. Data keys shall be placed within the controller cabinet in a clearly marked envelope.

An EDI Model 2010 ECL conflict monitor shall be provided at locations where an existing Model 170 controller exists in the traffic signal cabinet. Conflict monitors shall be programmed for standard 8-phase operations with custom modifications as necessary to match the traffic signal phasing shown on the plans.

Contractor shall obtain a copy of the existing timing sheets from the controller cabinet, verify the accuracy of the timing sheet compared to controller settings or mark the timing sheet to reflect inputs in the existing controller, then replicate the timing sheets for the new software and deliver to the City a minimum of 15 working days before each traffic signal will be shut down and modified. The original timing sheet must remain in the controller cabinet.

Load switches shall conform to the latest edition of the Caltrans Traffic Electrical Equipment Specification (TEES) and all addenda.

The Contractor shall arrange to have a signal technician, qualified to work on the controller unit and employed by the controller unit manufacturer or his representative, present at the time the equipment is turned on.

The existing controller units become the property of the Contractor unless otherwise noted on the plans.

12.4.5 Controller Testing

Contractor shall deliver the controller unit and timing sheets, and all auxiliary equipment to the City's signal maintenance contractor for 7-day burn-in testing. Contractor shall contact the City for signal timing sheets a minimum of 10 working days before start of testing: Jason Sampietro, jsampietro@rpcity.org. City will transmit timing sheets to the test lab.

Contractor shall contact the test lab a minimum of 10 working days in advance of the desired test date to schedule the test, deliver the controller unit to the test site, pick up controller unit when the 7-day test is successfully passed and deliver it to the project site and install it in the controller cabinet.

Pre-approved test labs include:

DC Electric Group, Inc.
605 W. Sierra Avenue

Cotati, CA 94931-7525
707-992-0141
Attn: Tim Carter

The cost of the testing will be paid by the City after invoicing by the test lab.

12.4.6 Traffic Signal Faces And Heads

Traffic signal heads shall conform to Section 86-1.02R “Signal Heads” of the Caltrans Standard Specifications. All new signal faces shall be 12” LED. Housings, brackets shall be painted black, backplates shall be painted flat black with yellow retroreflective border per section 86-1.02R(3) “Backplates”. Existing mounting brackets that are modified shall be painted black.

12.4.7 Pedestrian Push Buttons

Pedestrian push buttons shall be per Caltrans Standard Specifications Section 86-1.02T “Accessible Pedestrian Signals” and shall be the Accessible Pedestrian Signal (APS) type and shall match the existing equipment and vendor at the traffic signal where push buttons are being modified.

Where new APS buttons are shown on the plans and need to be lowered per Caltrans standard plan push button height, holes in the existing signal mast arm pole or Type 1 pole shall be filled with galvanized steel plugs or bolts. All conductors between the push button and pedestrian signal head must be replaced in kind.

Where new APS buttons and APS posts are being installed adjacent to an existing curb ramp at the intersection of Commerce Blvd/Alison Ave, contractor shall install PBAs with a 6-inch (minimum) extension to ensure compliance with ADA maximum reach requirements. Any damage to the existing curb ramp caused by the Contractor’s activity shall be repaired at no cost to the City.

Where new APS buttons are being installed on the same pole, contractor shall install adapter plates so that

APS system shall be Polara Navigator system.

12.4.8 Conduit

Underground utilities are not shown on the plans. Contractor shall call USA to have underground utilities marked and meet on site with the City representative before starting any excavation.

Conduit shall be per Section 86-1.02B “Conduit and Accessories” and shall be Schedule 40 PVC if installed in a trench or Schedule 80 HDPE if installed by the directional boring method, or galvanized rigid steel.

Trench backfill shall conform to City Standard 215.

12.4.9 Pedestrian Signal Heads

Pedestrian signal heads shall conform to Section 86-1.02S “Pedestrian Signals” and shall be countdown type.

12.4.10 Pedestrian Push Button Posts

Pedestrian push button posts shall conform to Section 86-1.02J “Standards, Poles, Pedestals, and Posts”.

12.4.11 Emergency Vehicle Preemption System

Emergency Vehicle Preemption System shall be **GTT Opticom GPS/Radio system**.

System Description

Key System Requirements

1. Vehicle Equipment

- GPS-enabled geo-spatial locating and improved locational accuracy with dead reckoning
- Vehicle to intersection communication via 2.4GHz radio and/or cellular networks
- Internet of Things (IoT) communication capability using MQTT messaging protocol standard
- Ability to send vehicle position and system data in real-time to centrally located management systems or store on-vehicle and send when a network connection is available
- Ability to send vehicle position and system data including turn signal status to intersection equipment for the purpose of preemption and priority control
- Ability to interface with other on-board equipment using J1708 or discrete wiring
- Ability to remotely manage the device from a central location

2. Intersection Equipment

- Ability to receive and process preemption and priority requests from infrared, radio, cellular, and fiber network-based communication systems
- Vehicle to intersection and Intersection to Intersection communication via 2.4GHz radio and/or cellular networks
- Internet of Things (IoT) communication capability using MQTT messaging protocol standard
- Ability to send preemption and priority requests to intersection controllers via the NTCIP-1211 communication standard or discrete connections
- Ability to sense the green traffic signal status
- Ability to receive preemption and priority requests from multiple vehicles and process the requests based on pre-programmed conditions and relative priority levels

- Ability to send vehicle position and preemption/priority system data in real-time to centrally located management software for remote management

System Operation

The required priority control system will employ data-encoded radio communication to identify the presence of designated priority vehicles. A record of system users by agency identification number, vehicle classification and vehicle identification number will be created. In priority vehicle mode, the data-encoded communication will request the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available.

The priority control system will consist of a matched system of vehicle equipment, intersection equipment and management software. The vehicle equipment includes a vehicle control unit and a GPS antenna and a radio antenna contained in one module. The intersection equipment includes a phase selector, and a radio, radio antenna, GPS receiver, and GPS antenna contained in one module. The system shall be intersection-centric, where configuration of [most] system operation parameters shall be completed on the intersection equipment and not require interaction with the vehicle equipment. In this fashion, central system control can be achieved from the Traffic Management Center (TMC) using the management software using Ethernet-based communications, thus minimizing operational complexity and ongoing costs when working on a multi-agency environment. The system shall be able to continue operating even if partial or total loss of communications to the intersection occurs. The system shall be independent from traffic control system software (e.g., ATMS, etc.)

The GPS receiver on the vehicle will obtain vehicle location, heading and speed from the U.S. Department of Defense (DoD) operated GPS satellites. The receiver shall be capable of receiving and using corrections signal from the WAAS satellites. The vehicle equipment will also monitor the vehicle's turn signal status. A 2.4 GHz spread spectrum/frequency hopping radio in the vehicle equipment will transmit this data to nearby intersections, when it is within radio communication range of an intersection. The data is received by a similar radio located at the intersection. The vehicle radio will communicate to intersection radios at distances up to at least 2,500 feet (762 m) with no obstructions. The intersection radios will communicate to vehicles and other intersection radios at distances of at least 2,500 feet (762 m) with no obstructions. The phase selector will process the vehicle information to ensure that the vehicle is (1) in a predefined approach corridor, (2) heading toward the intersection, (3) requesting priority, and (4) within user-settable range. If these conditions are met, the phase selector will generate a priority control request to the traffic controller for the approaching priority vehicle. If the approaching vehicle has an active turn signal, the approach intersection will relay the priority request to the next nearest in-range intersection in the direction of the approaching vehicle's turn signal. Optionally, the output of the phase selector may be set to vary depending on the state of the approaching vehicle's turn signal.

The system will require no action from the vehicle operator other than to turn on the vehicle equipment. A remote activation line will be provided so that activation may happen at the same time as the driver activates other equipment such as a lightbar. The system will operate on a first-come, first-served basis. High priority requests will override Low priority requests. The system will interface with most traffic signal controllers that have the firmware to support EVP and TSP.

Intersection Equipment – Detailed Specifications

1.2. Phase Selector

The phase selector will be located within the controller cabinet at the intersection and will process the data in order to validate that all parameters required for granting a priority request are met. It will request the controller to provide priority to a valid priority vehicle by connecting its outputs to the traffic controller's preemption inputs. Alternately the phase selector shall be able to connect to the traffic controller via Ethernet and send the priority request messages to the controller following the NTCIP 1211 communication protocol.

1. The phase selector shall be capable of receiving vehicle preemption and priority requests via infrared, radio, cellular and fiber network based communication.
2. The phase selector shall be capable of acting as a Priority Request Generator providing priority request information over ethernet per the NTCIP-1211 v02 communication standard.
3. The phase selector is designed to be installed in the traffic controller cabinet and is intended for use directly with most traffic controllers. These include 170/2070 controllers with compatible EVP/TSP software, NEMA TS-1, TS-2 controllers, or other controllers along with the system card rack and suitable interface equipment and controller software.
4. The phase selector will be a plug-in, four-channel, multiple-priority device intended to be installed directly into a card rack located within the controller cabinet.
5. The phase selector will be powered from 120 VAC or +24 VDC.
6. Programming the phase selector and retrieving the data stored in it will be accomplished using a computer and system interface software. The connection can be direct via the computer's communication (COM) port. The communication ports on the phase selector shall include:
 - Ethernet
 - RS-232
 - USB

Additional communication ports are available using the Auxiliary Interface Panel, see the Auxiliary Interface Panel specifications.

7. The phase selector will include the ability to directly sense the green traffic controller signal indications using dedicated sensing circuits and wires connected directly to field wire termination points in the traffic controller cabinet. This connection will be made using either the auxiliary interface panel or the auxiliary harness.
8. The phase selector will have the capability of storing up to 10,000 of the most recent priority control calls. When the log is full, the phase selector will drop the oldest entry to accommodate the new entry. The phase selector will store the record in non-volatile memory and will retain the record if power terminates. Each record entry will include the following points of information about the priority call:

- Agency: Indicates the operating agency of the vehicle

- Classification: Indicates the class type of vehicle
 - Identification number: Indicates the unique ID number of the vehicle
 - Priority level: Indicates the vehicle's priority level (High or Low priority)
 - Direction: Channel A, B, C, or D; indicates the vehicle's direction of travel
 - Call duration: Indicates the total time in seconds the priority status is active
 - In range duration: Indicates the total time in seconds the vehicle was in range
 - Final greens at end of call: Indicates which signal phases are green at the end of the call
 - Duration of the final greens: Indicates the total time green signals were active at the end of call
 - Time and date call started and ended: Indicates the time a priority call started and ended, provided in seconds, minutes, hours, day, month, year
 - Turn signal status: Indicates the status of the turn signal at the beginning of the hold time
 - Priority output active: Indicates if the phase selector requested priority from the controller for the call
 - Preempt output activated; Lists the output that was activated in response to the request from the vehicle
 - No preempt cause: Indicates the condition that prevented the call or caused it to terminate.
 - Speed of vehicle: entry speed, exit speed, average speed through call
 - Relative priority: relative priority of vehicle class logged at time of call
 - Directional Priority: Indication of directional priority (if used)
9. Conditional Priority: Indication of low priority conditional priority value (if used). The phase selector will include several control timers that will limit or modify the duration of a priority control condition, by channel, and can be programmed from a computer. These values may be set to vary by time of day and day of the week. The control timers will be as follows:
- MAX CALL TIME: Will set the maximum time a channel can be held active by a specific vehicle. It will be settable from 60 to 65,535 seconds in one-second increments. The factory default shall be 360 seconds.
 - OFF APPROACH CALL HOLD TIME: Will set the time a call is held on a channel after the vehicle has left the approach. It will be settable from four to 255 seconds in one-second increments. The factory default shall be six seconds.
 - LOST SIGNAL CALL HOLD TIME: Will set the time a call is held on a channel after the intersection has lost contact with the vehicle. It will be settable from one to 255 seconds in one-second increments. The factory default shall be six seconds.

- CALL DELAY TIME: Sets the amount of time a call must be recognized before the phase selector activates the corresponding output. It shall be settable from zero to 255 seconds in one-second increments. The factory default shall be zero seconds.
10. The phase selector shall have the ability to limit how many low priority calls will be placed within user defined time periods. There shall be two user defined peak periods. The amount of time between low priority calls shall be user selectable from 0-59 minutes for each of the two peaks periods and during times outside of the two peak periods. The phase selector shall have the ability to enable or disable all calls of both priority levels. This shall be settable independently by channel. A unique intersection name, which will be broadcast, shall be settable for each phase selector.
 11. Up to 25 different radio channels will be available to be assigned to the phase selector.
 12. The phase selector will have the option of operating in a mode that will vary the output based on the status of the approaching vehicle's turn signal. Additional outputs available on an Auxiliary Interface Panel may be needed. Settings will be available for this mode as follows:
 - Output mappings for each channel
 - Separate setting for each of the four channels
 - Separate settings for each Left turn, right turn or straight signal status for each of the above four channels
 13. The phase selector's default values will be re-settable by the operator using the interface software.
 14. The phase selector will be capable of two levels of signal discrimination, as follows:
 - Verification of the presence of the signal of either High priority or Low priority
 - Verification that the vehicle is approaching the intersection
 15. Determination of when the vehicle is within the prescribed range. The phase selector will include one opto-isolated NPN output per channel that provides the following electrical signal to the appropriate pin on the card edge connector:
 - 6.25Hz \pm 0.1Hz 50% on/duty square wave in response to a Low priority call
 - A steady ON in response to a High priority call
 - The phase selector will also have the option of providing separate outputs for High and Low priority calls for controllers that do not recognize a 6.25 Hz pulsed Low priority request
 - Low priority outputs may also be set to steady on
 - Low priority outputs may be set to be activated on a first come-first served basis or all set to activate an output for all channels receiving requests from vehicles
 - Additional outputs will also be available on the auxiliary interface panel

16. The phase selector will accommodate two methods for setting range thresholds for High and Low priority signals. The range values shall also be adjustable based on time of day and day of the week.

- Based on the approaching vehicle's Estimated Time of Arrival (ETA). This will be settable between 0 and 255 seconds. The factory default will be 30 seconds. The ETA threshold will be independently settable by each of the following parameters; vehicle class, channel and priority level.
- Based on the approaching vehicle's distance from the intersection. This will be settable between 0 and 5000 feet. The factory default will be 1000 feet. The distance threshold will be independently settable by each of the following parameters; vehicle class, channel and priority level.
- Input of the range requirements will be done via the communication port and configuration software.

The phase selector will have the following indicators:

- i. A STATUS indicator that illuminates steadily to indicate proper operation.
- ii. A link indicator on the phase selector illuminates green if other radios are within range.
- iii. A radio indicator that indicates the status of the communication between the phase selector and the radio/GPS unit. The indicator illuminates amber to indicate that there is communication between the phase selector and the radio/GPS unit. The indicator illuminates green to indicate that a GPS signal has been acquired and the 2.4 GHz radio is on the air.
- iv. LED indicators (one for high priority, one for low priority) for each channel display active calls as steady ON and pulse to indicate pending preemption requests.

17. The phase selector will have a switch to test proper operation of high or low priority for each channel.

18. The phase selector will relay a priority request to the next adjacent intersection based on the intended direction as indicated by the vehicle's turn signal.

19. The phase selector will provide one isolated confirmation light control output per channel. These outputs are user configurable through software for a variety of confirmation light sequences.

20. The phase selector will utilize the time obtained from the GPS satellites to time stamp the activity logs. The user will set the local time zone (offset from GPS time) via the interface software.

21. The phase selector includes multi-purpose communication ports compliant with the RS-232 communication standard. These ports enable unit configuration to be set into the phase selector unit and read from phase selector. It also allows real-time communication between the phase selector and the interface computer as well as interfacing with other devices. One of the ports may be configured to output GPS data at a user selectable baud

rate in the NEMA format. It will output the following messages (depending on the baud rate):

- GGA Global Positioning System Fix Data (2400 baud and higher)
- GSA GPS DOP and active satellites (2400 baud and higher)
- GSV Satellites in view (4800 baud and higher)
- RMC Recommended Minimum Navigation Information (1200 baud and higher)

For traffic controllers that are capable of interpreting GPS data in the NMEA serial format, this GPS data may be used to synchronize the controller's clock using the GPS date and time.

Additionally, a discrete output from the phase selector may be used to reset the traffic controller using the clock reset function/input of the controller. This output shall be referenced to the GPS date and time.

This output may be configured as follows:

- Enabled or Disabled
- Time of day reset is activated (12:00 A. M. to 6:00 A.M. in 30-minute increments)
- Duration of reset pulse (100-2000 milliseconds)
- Repeat every (days 1-30)

22. The following diagnostic tests are incorporated in the phase selector

- Power up built in test
- Preemption output test call

23. The phase selector shall be capable of call bridging. Call bridging enables the treatment of two vehicles requesting priority activation to have their calls linked together to hold a call to the controller so that they may traverse the approach together. This value shall be adjustable based on time of day and day of the week.

24. The phase selector shall have the ability to assign priority based on the direction that the low priority vehicle is approaching the intersection. This may be varied based on time of day and day of the week.

25. The phase selector shall support evacuation mode for low priority calls. Upon activation of this mode from the central management software, low priority vehicle calls shall be recognized by the phase selector as if they were high priority vehicle calls for a temporary period of time as defined by the user. Vehicles transmitting high priority signals shall continue to maintain priority over the evacuation mode priority vehicles.

26. The phase selector shall allow relative priority. Relative priority allows emitter classes to be used as an additional level of prioritization within priority levels (i.e. high and low priority levels have different sets of relative priorities). Relative priority shall support up

to 15 unique classes in each priority level (High and Low). Relative priority class level 15 will have the highest weight and 1 the lowest weight in each. If relative priority is enabled, a priority call will be granted to the caller with the higher-class level within high and low priority levels. A vehicle with a call granted, shall be able to have its call taken away by a higher-level class vehicle. The system shall provide a lockout threshold that once met, shall disallow higher relative priority calls from taking away a call. Call thresholds shall be specified as an ETA in seconds. The default ETA shall be 12 seconds. Threshold values for both types of calls shall be settable via system software. High priority calls will always be served over low priority calls regardless of either's relative class. Preemption for vehicles with the same base priority (high, low) and the same relative priority is done using the default first come, first served mechanism. Relative priority is capable of being enabled or disabled using system software. Relative priority for high and low can be separately enabled or disabled using system software. The default settings for all relative priority (high and low) values will be 15. Relative priority shall be disabled by default for both high and low priority. This may be varied based on time of day and day of the week.

27. The phase selector shall be capable of (Message Queuing Telemetry Transport) MQTT communication per ISO/IEC PRF 20922 publisher/subscriber messaging protocol. It shall work on top of the TCP/IP protocol and support TLS\SSL security. The registered default port shall be 8883 over SSL.
28. The phase selector shall be capable of distributing data in real-time. The unit shall distribute the data to other systems as it is collected by the device versus persisting the data for offloading at a scheduled time or relying on a client to poll at a specific interval.

1.3. Intersection Radio/GPS Module

The intersection radio/GPS module is required for the phase selector to communicate with vehicles having compatible 2.4GHz radio communication technology. The intersection radio/GPS module will transmit a beacon every second and receive the data transmitted by the vehicle equipment and relay this information to the phase selector as well as other system-equipped intersections. It will also obtain position information from the GPS satellites.

1. The intersection radio/GPS module will contain a GPS receiver and antenna with the ability to obtain vehicle position, speed and heading from the GPS satellite system operated by the DoD. The time information from the GPS satellites will also be used to synchronize the frequency hopping of the 2.4 GHz radio and to time stamp an activity log. A dual-band GPS/2.4 GHz module and antenna will be included.
2. The intersection radio/GPS module will contain a 2.4 GHz spread spectrum/frequency hopping radio that will provide the communications from the intersection to the vehicle as well as from intersection to intersection. The radio shall have a maximum transmit power of not more than 1 watt. The radio will meet FCC Part 15 and Canada ICES-003 rules. A dual-band GPS/2.4 GHz module and antenna will be included.

3. The intersection radio/GPS module will be housed in a white, impact-resistant polycarbonate housing that will include a water-resistant wire entry point for mounting on a mast arm or strain pole. As an alternative, the intersection radio will be available for mounting inside a traffic cabinet with a matched, dual-band GPS/2.4 GHz antenna for mounting on top of the traffic cabinet.

1.4. Auxiliary Interface Panel

The auxiliary panel will provide additional preemption outputs if needed. It will also provide a connection point for the phase selector to monitor the status of the intersection's green lights (green sense). Additional communication ports may also be accessed via this panel. The panel will also supply an output that may be used to synchronize other devices in the traffic cabinet to GPS time. GPS time synchronization will be available either via discrete output or stream the GPS time via a serial port.

1. The auxiliary interface panel will be available as an expansion device to facilitate interconnections between the phase selector and traffic cabinet wiring as well as provide additional outputs.

1.5. Card Rack

The card rack will provide simplified installation of a phase selector into controller cabinets that do not already have a suitable card rack. The card rack will provide 120 VAC to operate the phase selector.

1. The required card rack will provide simplified installation of a phase selector into controller cabinets that do not already have a suitable card rack.
2. The card rack will be factory wired with one connector, located behind the card slot, a power supply inside the card rack and one connector on the front of the card rack.
3. The card rack connector on the front will provide four wires for each of the four outputs on the phase selector. It will also contain a wire for logic common and wires for 120 VAC Hot neutral and ground.
4. The card rack will capable of being powered by 100-240 VAC 50-60 Hz which will be passed to the phase selector. The rack shall also have terminals for connecting Infrared detectors.
5. Additionally, there shall be an optional card rack with a built-in electromechanical relay for use in switching high current loads such as flashers and gate operators. The relay shall be capable of switching the following loads.
 - a. Resistive
 - i. 10 A, 240 VAC
 - ii. 10 A, 30 VDC
 - b. General Use
 - i. 7.5 A, 120 VAC
 - ii. 7.5 A, 240 VAC
 - iii. 7 A, 30 VDC
 - iv. 1/6 hp, 120 VAC

v. 1/3 hp, 240 VAC

1.6. System Management Software

The GPS-enabled Traffic Signal Preemption and Priority Control System can be managed locally or remotely using System Management Software. See the Management Software specification for additional details.

Performance Analytics System

The analytics software will be available on a customer-hosted server or as a cloud-based service. The software will allow a means to provide aggregate or detailed analysis of system performance. Analytics will be available both as reports or as web-based views. See the Performance Analytics System specification for detailed specifications.

1.7. Reliability

1. All equipment supplied as part of the radio/GPS priority control system intended for use in the controller cabinet will meet the following electrical and environmental specifications spelled out in the NEMA Standards Publication TS2 2003, Part 2: v02.06

- Line voltage variations per NEMA TS2 2003, Paragraph 2.1.2
- Power source frequency per NEMA TS2 2003, Paragraph 2.1.3
- Power source noise transients per NEMA TS2 2003, Paragraph 2.1.6
- Temperature range per NEMA TS2 2003, Paragraph 2.1.5
- Humidity per NEMA TS2 2003, Paragraph 2.1.5
- Shock test per NEMA TS2 2003, Paragraph 2.2.9
- Vibration per NEMA TS2 2003, Paragraph 2.2.8
- Non-Destructive Transient immunity NEMA TS2 2003, Paragraph 2.1.8
- Input-output terminals NEMA TS2 2003, Paragraph 2.1.7
- FCC Part 15 Subpart B Class A EMC Standard
- Canada ICES-003, Issue 4:2004 Class A EMC Standard
- EN 50293: 2000 Electromagnetic Compatibility – Road Traffic Signal Systems – Product Standard
- EN 61326-1:2006 EMC Standard
- EN 55011:2007 +A2:2007 EMC Standard
- EN50498: EMC Compatibility
- FCC Part 15 Subpart C Radio Standard
- RSS GEN and RSS210 Annex 8 Radio Standard

2. Each piece of equipment supplied as part of the priority control system intended for use in or on priority vehicles will operate properly across the entire spectrum of combinations of environmental conditions (temperature range, relative humidity, vehicle battery voltage) per the individual component specifications.

3. Manufacturer will provide documentation of independent third-party certification to NEMA environmental compliance as part of initial submittal.
4. Manufacturer will be ISO 9001 certified and provide documentation as part of the initial submittal.

1.8 Qualifications

1. The manufacturer of the Traffic Signal Preemption Control System will verify a proven, safe and successful operation of the proposed solution through current examples of 15 installed GPS Based Traffic Signal Preemption Control Systems using the same products that consist of a minimum of 10 intersections and 10 emergency vehicles each having been in operation a minimum of 1 year.
2. The manufacturer of the Traffic Signal Preemption Control System will verify a proven, safe and successful operation of the proposed solution through current example of a single installed GPS Based Traffic Signal Preemption Control System using the same products that consists of a minimum of 200 intersections and 200 emergency vehicles each having been in operation a minimum of 2 years.
3. Upon request, the manufacturer will produce a list of user agencies having experience interfacing priority control equipment with programmable controller types.

1.9 Responsibilities

1. The manufacturer of the required priority control system and/or the manufacturer's representative will provide responsive service before, during and after installation of the priority control system. The manufacturer and/or the manufacturer's representative, as consultants to the installer, will provide certified, training technicians having traffic systems industry experience and operational knowledge of priority control systems.
2. The lowest fully responsive bidder will be required to supply working production components specified herein within 14 calendar days from the purchase order date. Failure to do so will render the bid non-responsive and manufacturer will be required to pay damages.
3. Paragraph B will not be required if, prior to the bid opening, the bidder demonstrated to the city that the equipment bid meets these specifications.
4. The manufacturer of required priority control system and/or the manufacturer's representative will implement and complete a test plan within 30 days of receiving notification of being the successful bidder.

2.0 Warranty

1. The protection plan will warrant that component parts of a matched component system that are not subject to coverage limitations and prove to be defective in workmanship and/or material for a minimum five (5) years from the date of shipment from manufacturer will be repaired at no charge, and that extended coverage will be available for an additional five (5) years.

2. A copy of the manufacturer's written warranty outlining the conditions stated above will be supplied with the bid. Coverage and coverage limitations are to be administered as detailed in the manufacturer's Warranty/Maintenance document.

2.1 Certificate of Insurance

1. The manufacturer of the required priority control system will provide a certificate of product liability insurance protection for \$5,000,000 assuring the priority control user that the manufacturer is insured against civil damages if proven to be at fault for an accident due to equipment failure within the system of matched priority control components. This certificate, however, need not, and is not meant to, provide liability insurance protection to the priority control system dealer, installer or user.

2.2 User Support Services

1. The manufacturer of the required priority control system will offer support programs to assist the purchase and implementation of a priority control system program, including:
 - Public relations assistance to promote the system within the user community.
 - Intersection survey service to document appropriate equipment interfaces.
 - Customized proposals to assist the procurement process.
 - Driver training program with materials

2.3 Certification

1. The manufacturer of the required GPS priority control system will certify that all component products are designed, manufactured and tested as a system of matched components and will meet or exceed the requirements of this specification.

2.4 Field Unit Verification/Validation Performance Test Plan

1. Successful Bidder will develop, document, and implement a Field Unit Verification/Validation Performance Test Plan. The Verification portion of the plan will demonstrate system performance to the specifications guaranteed by the equipment provider and insure that the installations are completed per manufacturer documented installation procedures. The Validation portion of the plan will demonstrate that the system meets user expectations as defined in the IFB document(s) and insure that any/all performance issues have been addressed.
2. Successful Bidder will work with the user, stakeholders, and installers to finalize, coordinate and implement the Field Unit Verification/Validation Performance Test Plan. Successful Bidder will, furthermore, document and distribute Verification/Validation Performance Test Plan results in a predetermined and agreed to format.
3. The Field Unit Verification/Validation Performance Test will be completed no later than 60 days after award of contract. The Final Test Plan will specify the number of completed intersections and vehicles required to perform a comprehensive test.

2.5 Patent Infringement

1. Bidder represents that the user's use of the products as contemplated herein does not and will not infringe any patent, copyright, or other proprietary right of any third party, and there is currently no actual or threatened suit by any such third party based on an alleged violation of such right by the Bidder.

3.0 Use of Intellectual Property

1. Bidder represents that it has secured all necessary licenses, consents or approvals to use the components of any intellectual property, including computer software, used in the rendering of the scope of services and the production of the materials produced under this Agreement, and that the user has full legal title or the right to use such materials. Bidder covenants to defend, indemnify and hold the user harmless of any loss, claim or liability in any way related to a claim that the user through its authorized use of the priority control system is violating federal, state or local laws, or any contractual provisions relating to trade names, licenses, franchises, patents or other means of protecting interests in products or inventions. Bidder shall bear all costs arising from the use of third party patented, copyrighted, trade secret or trademarked materials, equipment, devices or processes used on or incorporated in the performance of the scope of services and materials produced under this Agreement. In case such materials, equipment, devices or processes are held to constitute an infringement and their use is enjoined, Bidder, at its expense shall: (a) secure for the user the right to continue using the materials by suspension of any injunction or by procuring a license or licenses for the user; (b) modify the materials so that they become non-infringing; or (c) refund the applicable fees paid to the Bidder by the user for such infringing materials, equipment, devices or processes, excepting amounts reflecting depreciation, user's actual use of the infringing materials, equipment, devices or processes prior to their enjoined use, or other such reasonable adjustments. These covenants shall survive the termination of this Agreement.

12.4.12 Video Detection System

Video detection system shall be Iteris Vantage Vector Video detection system.

General

The Multi Sensor Video Detection System (MSVDS) also known as DET 1046-01 shall consist of two different technologies, video imaging and radar. The system shall detect and track vehicles at distances over 600 feet. In a low-visibility condition, the system shall be capable to switch automatically to either radar detection mode or constant call mode. The MSVDS shall fuse vehicle information from the two sensors to provide highly accurate and precise detection for simultaneous stop bar presence detection, advanced detection, and special or advanced applications. All equipment, cables, and hardware must be from the same manufacturer. The MSVDS shall be compatible with City's existing available

software. No rewiring of City standard 332L controller cabinet is allowed. The MSVDS shall meet the “Buy America” requirements.

System Hardware

The MSVDS shall consist of up to four hybrid video camera/radar sensors, a shelf or rack mounted form factor Central Control Unit (CCU) with up to four detection processors capable of processing from up to four sensors, video surge suppressors, a 17-inch monitor, system software, and a pointing device.

With use of software the system shall discriminately detects the presence of individual vehicles and bicycles in a single or multiple lanes using only the video image and sends vehicle and bicycles calls out to the controller via separate outputs. The system software shall also utilize artificial intelligence and deep learning to automatically count and detect pedestrian movement in the crosswalk, count turning movement counts and learn the back ground to count and distinguish left, through and right turn movements. The system software shall be able to work simultaneously with City’s existing cloud based ATSPM and the City’s cloud based Count DATA fusion live System. A minimum of 32 video detection zones and 16 radar detection zones per sensor shall be available and 5 Radar trigger lines for Dilemma zone mitigation.

In addition to creating vehicle and bicycle zones, the system shall provide a tracking mechanism that counts pedestrian volume moving within the crossing area, and determine the average, maximum, and minimum speed of pedestrians moving within the crossing zone. The system shall also provide discrete outputs when pedestrians are in the crosswalk during normal crossing phases (one for each direction of travel) and when a red phase input has been detected. The system shall also provide a visual indication on the video image that a pedestrian is in the crosswalk.

MSVDS Hardware

Central Control Unit (CCU)

The CCU shall be a single-rack detector card width, and provide provision for up to four sensors/cameras. The Detection Processor shall be embedded in the CCU to provide one single cabinet interface. Each sensor/camera shall be connected to the CCU via Ethernet cable. The interface connectors shall be RJ-45 type. The CCU shall have four detection status LEDs on the front panel. The CCU shall enable the loading of modified or enhanced software through either the Ethernet or front-panel USB port (using a USB thumb drive). The shelf-mount format CCU shall be powered from a 48V DC power supply. CCU power consumption shall not exceed 150 Watts. The CCU shall have logic inputs for future use.

The CCU shall incorporate surge suppression for each sensor input. The CCU shall incorporate power surge suppression both on the input power and on the power supplied to the sensors. The CCU shall incorporate power management for the various parts of the MSVDS such that if fault conditions are detected the power supply will safely shut down the power to that peripheral.

The CCU shall provide 2 USB 'A' ports on the front panel. These ports can be utilized for various functions. The USB ports shall be used as part of system setup and configuration. The CCU shall provide an output to a monitor. The port shall be HDMI. The native resolution of the monitor port shall be 1024 x 768.

An Ethernet communications port shall be provided on the front panel. The Ethernet port shall be compliant with IEEE 802.3 and shall use a RJ-45 type connector mounted on the front panel of the CCU. The Ethernet communications interface shall allow the user to remotely configure the system and/or to extract calculated vehicle/roadway information. The interface protocol shall be documented or interface software shall be provided. Each MSVDS shall have the capability to be IP addressable. The CCU shall support data rates of up to 100Mbps.

The CCU shall provide an SDLC or 7D card connection to the traffic controller. The connector shall be a 'D-15' type, in compliance with CALTRANS TEES 332L specifications. The CCU shall provide a Wi-Fi connection. The connection shall be over a standard 2.4GHz connection. The Wi-Fi connection shall be enabled and disabled by a switch on the CCU. The CCU shall provide an indicator when the Wi-Fi connection is active. The CCU shall provide a connection for a removable antenna. The antenna connection shall be a SMA Male type.

MSVDS Sensor/Camera

The MSVDS sensor shall have two components; a camera sensor and a radar sensor. The MSVDS sensor shall utilize a single shielded CAT5E or CAT6 cable for power, communications and video. Cable termination at the camera shall not require crimping or special tools. An optional RJ45 direct connector shall be made available.

The MSDS shall detect vehicles and bicycles and pedestrians in real time as they travel across each camera detection zone. Vehicles, bikes, and pedestrians' detection outputs shall be on separate channels within the same field of view. The MSVDS shall default to a safe condition, such as a constant call on each active detection channel, in the event of unacceptable interference or loss of the video and/or radar signal.

A user-selected alarm output shall be available to be used during the low-visibility condition that can modify the controller operation if connected to the appropriate controller input modifiers (Max1 or Max2). The system shall automatically revert to normal detection mode when the low-visibility condition no longer exists. An On-Screen Icon shall be displayed while the system is in this mode. Detection shall be at least 98% accurate in good weather conditions, with slight degradation possible under adverse weather conditions (e.g. rain, snow, or fog) which reduce visibility. Detection accuracy is dependent upon site geometry, sensor placement, camera image quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to sensor location or quality. Detection zone setup shall not require site specific information such as latitude and longitude to be entered into the system.

In addition to the count type zone, the MSVDS shall be able to calculate average speed and lane occupancy for all the video detection zones independently. These values shall be stored in non-volatile memory for later retrieval.

The MSDS shall have the capability to change the characteristics of a detection zone based on external inputs such as signal phase. Each detection zone shall be able to switch from one zone type (i.e. presence, extension, pulse, etc.) to another zone type based on the signal state.

The On-Screen Display shall include an Automatic Traffic Volume graph. This graph will display estimated Vehicles Per Hour (VPH) per movement for each camera view. The graph will display a rolling 24-hour period of VPH. The On-Screen Display shall include an Occupancy Graph. This graph will display estimated approach occupancy for each camera view. The graph will display a rolling 24-hour period of Occupancy. The On-Screen Display shall include a Speed Graph. This graph will display average speed of vehicles through the each sensor view for the last Bin Interval. The graph will display a rolling 24 hour period of Speed.

Installation

The CCU shall be appropriately grounded to the cabinet ground rod using 14 AWG (2.5mm²) minimum. The cable to be used between the MSVDS sensor/Camera and the CCU in the traffic cabinet shall be Cat-5e, shielded, direct burial. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. Shielded RJ-45 connectors shall be used where applicable. The MSVDS system shall be installed by factory-certified installers as recommended by the supplier and documented in installation materials provided by the supplier. Proof of factory certification shall be provided. Each cable shall be tagged in cabinet as well as in the pull box near each associated traffic signal pole. The following configuration shall be used for Cat5e/Cat6 cable installation.

Cable Color	Phases	CCU Port
Red	2 & 5	1
Green	4 & 7	2
Blue	6 & 1	3
Yellow	8 & 3	4

Warranty

Furnish minimum of 3-year replacement warranty from the manufacturer against defects in material and workmanship or failures. The effective date of the warranty is the date of acceptance of the project. Submit all warranty documentation before installation. Replacement parts must be furnished within 10 days of receipt of a fail unit. The City does not pay for replacement. During the warranty period, updates to DP software shall be available from the supplier without charge.

Maintenance and Support

The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the video detection system. These parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale for said parts.

The supplier shall maintain an ongoing program of technical support for the video detection system. This technical support shall be available via telephone, or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale for on-site technical support services. Installation or training support shall be provided by a factory-authorized representative and shall be a minimum IMSA-Level II Traffic Signal Technician certified.

12.4.13 Battery Backup System

Battery Backup System shall conform to TEES specifications and Section 86-1.02Q(4), except Contractor shall furnish and install the BBS system.

- A. The Contractor shall furnish and install a battery backup system (BBS) in compliance with Section 86 and 87 of the Standard Specifications. The BBS will include an external cabinet mounted to either the left or right side of Model 332L cabinet, flush with the bottom of the Model 332L cabinet and approximately equidistant from the front and rear door edges.
- B. External cabinet shall be **Alpha Model E-BBS**.
- C. The battery backup system shall be **Alpha Technologies, LTD. Model: FXM-1100**

12.4.1.13.1 General

This specification establishes the minimum requirements for a complete emergency battery back-up system for use at traffic signals utilizing Light Emitting Diodes (LED) signals and pedestrian heads. The Uninterruptible Power Supply (UPS) shall include, but not be limited to the following:

- UPS with Inverter, Charger, Tap Switching Transformer and Internal Power Transfer Switch.
- Automatic / Manual Bypass Transfer Switch unit.
- Batteries
- Cabinet
- Wiring

The UPS shall provide reliable emergency power to a traffic signal in the event of a power failure or interruption.

12.4.1.13.2 Operation

12.4.1.13.2.1 General

The UPS shall provide the following operational modes when operating on battery power:

- Full operation of all traffic signal devices

- Flash operation
- Combination of full and flash operation

12.4.1.13.2.2 Run Time

The UPS shall provide a minimum of 8 hours of full-time operation with a 450 watt load @ 25°C. The minimum battery size requirement is listed in the Batteries section.

12.4.1.13.2.3 Compatibility

The UPS shall be compatible with Model 30X, 33X, and 34X cabinets; the ITS cabinet; model 170 and 2070 controllers and any NEMA style cabinet, enclosures and controllers; the Advanced Transportation Controller; and all cabinet components for full time or flash operation.

12.4.1.13.2.4 Output Capacity

The UPS shall provide a minimum of 1100W/1100VA@25°C active output capacity with 83 percent minimum inverter efficiency with 30% minimum loading.

12.4.1.13.2.5 Output Voltage

When operating in backup mode, the UPS output shall be 120VAC \pm 2%, pure sine wave output, \leq 3%THD, 60Hz \pm 5%.

12.4.1.13.2.6 DC System Voltage

The UPS DC system voltage shall be 48VDC nominal.

12.4.1.13.2.7 Transfer Time

The maximum transfer time allowed, from disruption of normal utility line voltage to stabilized inverter line voltage from batteries, shall be 5 milliseconds (ms). The same maximum allowable time shall also apply when switching from the inverter line voltage to utility line voltage after the line has been qualified. Transfers to and from battery operation shall not interfere with the operation of the other equipment in the intersection.

12.4.1.13.2.8 Line Qualify Time

The UPS shall have a user definable line qualify time. The user shall be able to set a time within the range of 3s-999s. The default line qualify time shall be 3 seconds.

12.4.1.13.2.9 Operating Temperature

The UPS and all components shall operate without performance degradation over a temperature range of -40°C (-40°F) to +74°C (+165°F) with a maximum load of 70% of rated output of the UPS inverter.

12.4.1.13.2.10 Feedback Level

The UPS shall be tested and certified to Electrical Standards UL 1778 and CSA 107.3.

12.4.1.13.2.11 Surge Protection

The UPS shall have surge protection compliant with IEEE/ANSI C.62.41 Cat. A & B.

12.4.1.13.2.12 Power and Control Connections

The UPS shall be easily installed, replaced, or removed by using easily removable cables for AC input, AC output, DC input, external transfer control/alarm and battery temperature sense.

2.12.1 AC Connection

The AC input and output hardwired connections shall be separate 3-position euro style terminal blocks mounted on a rotatable panel as part of the front of the UPS.

2.12.2 DC Connection and Circuit Breaker

The DC connection shall be a recessed one-piece Gray Anderson style connector rated to handle the maximum DC current required by the inverter while running on batteries. The UPS shall have a flush

mounted Battery circuit breaker installed on the front panel of the UPS inverter module.

2.12.3 Temperature Probe Connection

The battery temperature sense inputs shall be panel-mounted Telco style connector.

12.4.1.13.2.13 AC Input Circuit Breaker

The UPS shall be equipped with a flush mounted AC Input circuit breaker that protects both the UPS and the loads connected to the output. Should the AC Input breaker on the UPS trip, it shall allow the UPS to go to inverter mode to power the intersection off batteries. Should an overload condition still exist when the inverter is energized the inverter will revert to its internal electronic protection, preventing damage to the inverter due to the overload or short circuit condition, on the output.

12.4.1.13.2.14 AC Output Circuit Breaker

The UPS shall not have an AC Output circuit breaker or combination Input/Output breaker. An AC output breaker prevents the inverter from powering the load from batteries when tripped.

12.4.1.13.2.15 Battery Circuit Breaker

The UPS shall have a flush mounted Battery circuit breaker installed on the front panel of the UPS inverter module.

12.4.1.13.2.16 Overload

The UPS Inverter Module must be able to shutdown in order to protect against internal damage in the event of an overload at the output. The Inverter shall support an overload up to 110% for 2 minutes and then turn off the inverter output. The fault recovers when the overload is removed and line power returns. There shall not be an AC output circuit breaker.

12.4.1.13.2.17 AC Feedback

The UPS shall prevent a malfunction feedback to the cabinet or from feeding back to the utility service.

12.4.1.13.2.18 UPS Failure Mode

In the event of UPS failure (inverter/charger or battery) or complete battery discharge, the internal power transfer relay shall revert to Normally Closed (de-energized) state and provide utility power to the intersection when utility line power is available to the cabinet.

12.4.1.13.2.19 Automatic Shutdown

The UPS shall initiate an automatic shutdown when battery output reaches 42.0VDC.

12.4.1.13.2.20 Destructive Discharge or Overcharge

The UPS shall be equipped with an integral system to prevent the battery from destructive discharge or overcharge.

12.4.1.13.2.21 Battery Test

The UPS Inverter Module shall be programmable to perform automatic battery tests at user defined intervals to meet specific requirements or manufacturer's recommendation.

- Intervals are set in days between tests
- Programmable start hour
- Programmable test timeout range 6 minutes to 10 days 10 hours
- Programmable test termination voltage
- Web browser to show battery test time remaining, elapsed time, error condition, last test completed date/time, and days until next test
- During self-test the UPS Inverter Module shall identify a weak battery string and initiate an Alarm.

12.4.1.13.2.22 Scheduler - Time of Day Schedule (TOD)

The UPS shall provide a scheduler with settings programmable by the user.

- The scheduler shall allow the user to program at least five (5) time spans with start and end times
- Each time span shall be selectable as to whether it is applicable All Days, Weekdays, or Weekends
- The scheduler shall allow the user to schedule operational modes as required, per intersection.
- A dry contact relay shall be programmable to use a programmed time span to prevent a relay from being energized during the time span

12.4.1.13.2.23 Battery State of Health (SOH)

The SOH is a percentage estimate of the state of health of the battery. The UPS shall show the approximate SOH of the battery when discharges of greater than 20% are done during a battery test.

12.4.1.13.2.24 User Configurable Alarms

The UPS shall have at least 70 user configurable alarms. Each alarm shall be configurable as to:

- Enabled or Disabled
- Alarm Priority levels – Settable to Warning, Minor, Major, and Critical
- Parameter – Customizable user value for filtering
- Custom Name
- Dry Contact Relay – User can select which relay will be controlled by the alarm

2.24.1 Alarm Cut-Off - If an alarm is triggered the user can select the alarm window and click, “Alarm Cut-Off” to cut off the alarm for the set period and the system will show the alarm(s) as “Acknowledged” and deactivate any assigned relays.

2.24.2 Color severity – The alarm window background on the LCD and web browser interface shall be color coded with the highest active alarm severity level:

- LCD – No Alarms/Warning = Green, Minor = Yellow, Major/Critical = Red
- Web – No Alarms/Warning = Blue, Minor = Orange, Major/Critical = Red

12.4.1.13.2.25 Custom Data and Custom Actions

The UPS shall have the ability to capture custom data by either numeric or state value. These values can then be used in user created formulas to produce a numeric or Boolean output. The output can be used for reporting or for controlling dry contact relays by creating Custom Actions. In addition, counters and timers can be created to further custom data and actions.

- Counters – An Up or Down counter can be created to count how many times an event has happened and drive a custom action.
- Timers - The Delay Timer can be used with Custom Data to produce a programmable delay when a certain event happens. The Interval Timer can be used with Custom data to measure the time between two events.

12.4.1.13.2.26 Optional Analog Digital Input Output (ADIO) device

An optional ADIO device can be connected to the UPS for external control of devices via additional dry contact relays or for monitoring current, DC volts, temperature, and digital input (contact closure). The ADIO communicates with the UPS via the CAN bus.

12.4.1.13.3.0 Automatic Voltage Regulation (AVR) – Buck/Boost

12.4.1.13.3.10 AVR Functionality

The UPS shall include AVR (Auto Voltage Regulation) Functionality. The UPS shall be Double Buck/Double Boost (two steps of each) – Line-Interactive, True UPS.

- 3.1.1 The Double Buck/Double Boost mode shall have a minimum input range of 85 - 171 VAC.
- 3.1.2 There shall not be any user definable transfer set points for the buck or boost modes.
- 3.1.3 Whenever AVR mode is selected, the output of the system shall be regulated between 108-130VAC. When the output of the system can no longer be maintained with this range, the UPS shall transfer to Inverter or Backup Mode.

12.4.1.13.4.0 Battery Charger

12.4.1.13.4.1 Battery Charger

The UPS shall have an integral three (3) stage charger that is compatible with Gel and AGM battery topology. The charger shall be an intelligent charger with control systems that automatically incorporates bulk, absorption and float charging modes. Two stage chargers are not allowed.

- 4.1.1 The integral intelligent charger shall use temperature compensation. The charging system shall compensate over a range of -100.0 – 0.0 mV/°C/Cell (-55.6 - 0.0mV/°F/Cell), user adjustable when required. Default setting shall be -2.5 mV/°C/Cell (-1.4 mV/°F/Cell). Temperature compensation shall occur during absorption and float modes.
- 4.1.2 A temperature probe which plugs into the front panel of the UPS shall be used to monitor the internal temperature of the batteries. The Temperature sensor shall be 2 meter in length, external to the inverter/charger module and have a 3/8” lug for attaching to the negative terminal of the battery string.
- 4.1.3 If the temperature probe fails or is not connected to the UPS, the charger shall still charge the batteries but to a maximum of 52.5VDC.
- 4.1.4 The batteries shall not be recharged whenever the battery temperature exceeds 50°C (122°F).

- 4.1.5 The recharge time for the batteries from “protective low-cutoff” to 80 percent or more of full charge capacity shall not exceed 8 hours if the charger is set to maximum. The UPS charger shall be capable of providing 15 amps at 54VDC.

12.4.1.13.5.0 User Interface and Displays

12.4.1.13.5.1 UPS Inverter/Charger Display

The UPS inverter/charger unit shall include a 4.3” backlit LCD Touchscreen display for viewing all status and configuration information. The screen shall be easily viewable in both bright sunlight and in darkness. The screen assembly shall be rotatable.

12.4.1.13.5.2 LCD Screen Layout

5.2.1 The screen shall have different sections that contain:

- System Status Dashboard – Shows six I/O values or configuration
- Dashboard Paging – Allows navigation to all four user configurable System Status panels. Total of 24 user configurable System Status fields displayed.
- Alarms – Shows highest level active alarm. Color coded based on severity. Touching takes user to see all active alarms and allows for alarm cutoff
- Maintenance – Access to alarm cutoff, battery testing, and relay testing
- Information – Access to serial number and software and OS version
- Menu – Access to all controller menus
- Shortcuts – Access to most often used areas
- Login/Logout – For permissions to edit settings

5.2.2 At a minimum the LCD screen and web pages can show any of the following active real time readings and information:

- Operating Mode (Line, Standby, Backup, Buck / Boost)
- Utility Input Voltage
- UPS output Voltage and Current
- Battery Voltage, Temperature, SOH, SOC
- Input Frequency
- Output Power
- Charger Voltage, Current, Mode
- Battery Mode
- Timer Relays delay remaining
- IP Address
- Accumulated output power in kW hours
- Battery Runtime Remaining
- Unit Serial Number
- Unit Firmware Version
- Any Alarms

5.2.3 The Menu shortcut layout shall follow the web browser interface menu navigation and allow for full programmability of the UPS.

12.4.1.13.5.3 Web Browser Interface

The UPS shall be provided with an embedded web server for user configuration and management through a web browser without needing to install computer software.

5.3.1 Quick Status Area

The quick status area shall remain at the top of all pages and show any active alarms and show 8 fields of the LCD dashboard and be scrollable to show all 24. It shall also include a search field to aid the user in quickly finding the item they are looking for.

5.3.2 Menus

The menu system shall include the following menu sections and abilities:

- Dashboard – Controller and UPS Status

- Power Flow – See 5.3.3
- Controller – Comm setup, NTP, Users & Security, Scheduler for TOD
- System – UPS Status and Configuration
- Modules – UPS Firmware upgrades
- Alarms – Configure Alarms
- Logs – Events, Alerts, Battery, Power Outage, Datalogs, and Performance Logs

5.3.3 Power Flow

There shall be a live Power Flow diagram that shows the active flow of power with values from the AC Source, Input Circuit Breaker, UPS, Load, Battery Breaker, and Battery. The UPS section shall show any active dry contact relays and alarms. The battery shall show any active alarms.

5.3.4 Minimum Capabilities

The UPS shall allow the user to do the following through the web browser:

- | | |
|--------------------------------|---|
| • View Logs | • Configure Time/Date, NTP |
| • Configure network parameters | • Configure Communications |
| • Configure email | • Configure Users and Security |
| • Adjust line qualify time | • Controller and UPS firmware to be upgradeable remotely via Ethernet |
| • Configure dry contact relays | |
| • Configure alarms | |

12.4.1.13.5.4 Status LED's

The UPS shall have discrete status LED indications on the front of the inverter/charger.

5.4.1 Green Output LED shall be Solid ON any time that the output of the UPS is in Line or AVR (Buck/Boost) modes. When the UPS output is in Backup (Inverter) Mode the LED will flash On and Off.

5.4.2 Red LED shall be Solid On any time there is one or more major or critical active alarms.

5.4.3 Yellow LED shall be Solid On any time there is one or more minor active alarms.

12.4.1.13.5.5 Logs - Event, Alerts, Battery, and Power Outage Logs

5.5.1 Event Log

The UPS shall maintain an event log containing a minimum of 3000 of the most recent events. The event log shall be downloadable as a csv file by web browser and exportable by USB port on the UPS. The log shall be date and time stamped. The most recent 300 events of the log shall be viewable by web browser and 25 by LCD. The event log shall capture:

- UPS System Mode
- AC Power Outage
- Configuration Changes
- Battery Mode
- Dry Contact Relay Status
- User Logon
- Firmware Updates
- Web Sessions

5.5.2 Alert Log

The UPS shall maintain an alert log containing a minimum of 3000 of the most recent events stored in a 'first in first out' (FIFO) buffer. The alert log shall be downloadable as a csv file by web browser and exportable by USB port on the UPS. The log shall be date and time stamped. The most recent 300 events of the log shall be viewable by web browser and 25 by LCD. The alert log shall capture all alarms.

5.5.3 Battery Log

The UPS shall maintain a battery log containing a minimum of 3000 of the most recent events stored in a 'first in first out' (FIFO) buffer. The battery log shall be downloadable as a csv file by web browser and exportable by USB port on the UPS. The log shall be date and time stamped. The most recent 300 events of the log shall be viewable by web browser and 25 by LCD. The battery log shall capture:

- Duration
- Starting SOH%
- Battery Capacity
- Change in SOH%
- Ah Delivered
- Battery Current Average
- Change in SOC%

5.5.4 Power Outage Log

The UPS shall maintain a power outage log containing a minimum of 3000 of the most recent events stored in a 'first in first out' (FIFO) buffer. The battery log shall be downloadable as a csv file by web browser and exportable by USB port on the UPS. The log shall be date and time stamped. The most recent 300 events of the log shall be viewable by web browser and 25 by LCD. The power outage log shall capture Start Time, End Time, and Duration.

5.5.5 Data Logs

The UPS shall be capable of recording up to 10 data logs each with up to 20 data signals. The data logs shall be downloadable as a csv file by web browser and exportable by USB port on the UPS. User can configure the interval between the samples within a range of 2 seconds to 3 hours. User can configure the number of samples to capture from a range of 60-3600. When the maximum number of samples has been captured the newest sample replaces the oldest. Data capture can run continuously or be triggered by an equation. The UPS shall create a preview chart that shows continuous feed of data of up to 30 samples, FIFO, viewable on web browser only.

5.5.6 Performance Logs

The UPS shall have pre-configured performance logs that run continuously and automatically, viewable on a web browser. There shall be separate charts for Seconds, Minutes, Hours, and Days that shows the Average, Minimum, and Maximum values for each sample. A daily log that has the Average, Minimum, and Maximum values shall be logged and be downloadable as a csv file by web browser. The signals to be monitored are:

- Controller Memory in Use
- CPU Usage
- AC Output Voltage
- Battery Current
- AC Output Current
- Battery Voltage
- AC Output Voltage
- AC Output Apparent Power

12.4.1.13.5.6 Counters

The UPS shall keep track of the following:

- The number of times that the unit was in Inverter, Buck, and Boost, logged separately since the last reset.
- The accumulated number of hours and minutes that the unit has operated in Inverter, Buck, and Boost, logged separately since the last reset.
- The total power consumed by the load in kWh

12.4.1.13.5.7 Programmable Dry Contact Relays

The UPS shall provide the user six dry relay contacts. Five (5) programmable and one (1) 48VDC relay contact. As a minimum, the programmable options shall be On Battery, Low Battery + No Line, Timer, and Alarms. The UPS shall also have three (3) input contacts pre-programmed for Battery Test, User Alarm, and AC Shutdown

5.7.1 Relays C1-C5 shall be able to be triggered/driven by more than one condition.

5.7.2 Relays C1-C5 shall be able to have their default state programmed to be energized (NO contacts closed) when not triggered/driven.

5.7.3 The relay contacts shall be made available on the front panel of the UPS via 6, 3 position plug-in terminal blocks with screw down wiring connections.

5.7.4 Each relay, C1 through C6 shall have their own common and their own set of normally open (NO) and normally closed (NC) terminals. The terminals for each relay shall be oriented as NO-C-NC on the terminal block. C6 shall provide continuous 48 VDC voltage for powering of enclosure DC fan.

5.7.5 The contacts on the terminal block shall be labeled 1-18, left to right. Additionally, each set of contact shall be labeled with the NO-C-NC designation, as well as C1...C6 from left to right. Printed labels noting all alarms and faults shall be provided with the UPS Inverter/Charger to be installed when required.

5.7.6 The relay contacts shall be rated at a minimum of 1 amp @ 250 VAC.

5.7.7 On Battery Relay Contact

The dry relay contacts that are configured for “On Battery” shall only energize when the UPS is operating in Inverter Mode.

5.7.8 Timer Relay Contacts

The UPS shall include timers that will energize the associated “Timer” dry relay contact after the user configured time has elapsed when the UPS is in Inverter mode. The timer is started when the UPS enters Inverter Mode. The user shall be able to configure the timer to the required time. The timer shall have an adjustable range of 0-720 minutes. The user shall be able to create at least 10 user settable timers.

5.7.9 Low Battery + No Line Relay Contact

The UPS shall have an adjustable low battery relay setting. This setting shall be adjustable so that the user can set the point at which the low battery relay contact is energized. The low battery setting shall be adjustable from 0-100%. Once energized, the Low Battery + No Line relay shall de-energize as soon as line power has been restored and qualified.

12.4.1.13.5.8 User Input Contacts

The UPS shall have three optically isolated, programmable user input contacts. The user input contacts shall be able to be programmed for Self Test Start, User Alarm, and UPS Shutdown.

12.4.1.13.5.9 Probe Jacks

The UPS shall provide voltmeter standard probe input-jacks (+) and (-) to read the exact battery voltage at the inverter input.

12.4.1.13.6.0 Communications

12.4.1.13.6.1 Ethernet Interface

The UPS shall have two (2) internal Ethernet communication interface ports for user configuration and management. One of the ports shall be static with a manufacturer set IP address of 192.168.0.90 and the other port set to DHCP. The Ethernet Ports shall be an RJ-45, EIA 568B Pin Out Connector.

- The UPS shall include remote monitoring & alarms transmission capabilities through the Ethernet RJ-45 IP Addressable Port, using SNMP v3 protocol.
- System shall have the capability of notifying Operations, Maintenance or TMC via e-mail of any alarms, user selectable.

- Emails are to be held in a batch and released after the configured interval has elapsed. Interval can be set from 5-60 minutes. Interval timer starts after first alarm trigger. Email to include:
 - o Subject line with filterable text and alarm counts
 - o Static title for filtering
 - o Configurable name of the controller
 - o A Google map link to location (if setup)
 - o Time and date of notification
 - o List up to 10 active alarms, sorted by priority with an active alarm count indicator showing total active alarms
 - o List up to 10 cleared alarms, sorted by priority with a cleared alarm count indicator showing total cleared alarms
- All UPS configuration menus shall be accessible and programmable from the Ethernet Port.
- The UPS shall support TCP, UDP, and HTTP over IP protocol communications.

6.1.1 User Accounts

The UPS shall have seven user accounts: one administrator, one account manager and five operators. Each account shall have five different User Roles that could be assigned to it: administrator, account manager, operator, restricted operator, and guest, each with different permission levels.

6.1.2 Passwords

Password length shall be up to 32 characters (256 bit)

12.4.1.13.6.2 Integrated USB Host – USB Type A

The UPS shall have a USB Type A connector for firmware upgrades and file management. The USB shall support:

- Exporting and importing UPS configuration to copy configuration to other units
- Exporting log files
- Firmware and software upgrades
- Mouse and Keyboard input

12.4.1.13.6.3 Serial – USB Type Mini B

The UPS shall have a USB Type Mini B connector for soft shutdown of MegaTec protocol compliant client.

12.4.1.13.6.4 CAN

The UPS shall have an RJ12 connector for CAN bus communications to ADIO interfaces and other devices.

12.4.1.13.6.5 Time/Date

- SNTP (Simple Network Time Protocol) - The UPS shall have the ability to synchronize with a network or internet-based time server
- The UPS shall have the ability to synchronize to web browser
- Daylight Savings – The user shall be able to choose Standard Time, US/Can Daylight Savings, or always Daylight Savings

12.4.1.13.7.0 Automatic Bypass Transfer Switch

12.4.1.13.7.1 Rating

The UPS shall include a rack mounted Automatic/Manual Transfer Relay rated at 120VAC/30 amps.

12.4.1.13.7.2 Automatic & Manual Bypass Switch

The Automatic Bypass Transfer Switch shall be a combination automatic/manual bypass switch. Placing the bypass switch in the “Bypass” mode shall transfer the intersection load from the UPS output directly to commercial power. AC commercial power must still be available to the UPS input, allowing the UPS to keep the batteries charged. A UPS Supply Breaker shall be provided and located on the Bypass Switch, which allows the user to be able to manually shut off commercial power to the UPS input, allowing them to safely disconnect and remove the inverter. With the inverter turned off, the batteries can be safely disconnected from the system.

12.4.1.13.7.3 Indicator Light

The Automatic Bypass Transfer Switch shall include a bypass indicator light that automatically notifies the user when the Manual bypass switch is in Bypass position. The indicator light shall be illuminated when in UPS mode.

12.4.1.13.7.4 Integrated Switch

The manual bypass switch and the automatic transfer relay shall be integrated together within the Automatic Bypass Transfer Switch allowing the manual bypass switch to be rated at 10 Amps and to be integrated with the bypass indicator light.

12.4.1.13.7.5 Terminal Blocks

The Automatic Bypass Transfer Switch shall have terminal blocks capable of accepting #6 AWG wiring for the AC input and output with #10 AWG from the Automatic Bypass Transfer Switch to inverter/charger module.

12.4.1.13.8.0 Automatic Generator Transfer Switch

12.4.1.13.8.1 Rating

The UPS cabinet shall include a rack mounted Automatic Generator Transfer Switch rated at 120VAC/30 amps.

12.4.1.13.8.2 Automatic & Manual Generator Transfer

The Automatic Generator Transfer Switch shall be a combination automatic/manual generator switch. Placing the generator switch in the “Line” mode shall pass the utility power from the Line Input to Line Output. With the switch in “Gen” mode the transfer switch will automatically disconnect the utility and connect generator power to Line Output when the generator input voltage is approximately 102VAC or greater.

12.4.1.13.9.0 Batteries

12.4.1.13.9.1 Battery Type

The battery shall be virgin lead alloy, calcium based, extreme temperature, float cycle, AGM (Absorbed Glass Mat) VRLA (Valve Regulated Lead Acid). Batteries designed for Cycle applications, such as Solar or deep cycle, are not acceptable. The battery must be designed for Standby UPS applications. Individual batteries shall meet the following specifications:

- Voltage Rating: 12V
- Amp-hour rating: 112 Ah, at the 20-hour rate, to 1.75 Volts per cell, minimum battery rating.
- Group size: Case 31
- Batteries shall be easily replaced and commercially available off the shelf.
- Batteries shall provide 100% runtime capacity out-of-box. Each battery must meet its specification without the requirement of cycling upon initial installation and after the initial 24 hour top off charge.
- Quantity: 4

12.4.1.13.9.2 Battery String

Batteries used for the UPS shall consist of 4 batteries configured for a 48 VDC battery buss system.

12.4.1.13.9.3 Operating Temperature

Batteries shall be certified to operate at extreme temperatures from -40°C to $+60^{\circ}\text{C}$.

12.4.1.13.9.4 Handle

An integral lifting handle shall be provided on the batteries for ease of removal/installation.

12.4.1.13.9.5 Battery Cable Assembly

The battery cable assembly shall be a two-part modular harness.

9.5.1 Part 1 - Battery Pig Tail

Part 1 shall be equipped with red (+) and black (-) cabling that can be permanently connected to the positive and negative posts of each battery with a ¼” ring terminal. Each red and black pair shall be terminated into a one-piece Anderson style Power Pole connector or equivalent.

9.5.2 Part 2 - Main Cable

Part 2 shall be equipped with the mating Power Pole style connector for the batteries and a one-piece, insulated gray Power Pole style connection to the inverter/charger unit. Harness shall be fully insulated and constructed to allow batteries to be quickly and easily connected in any order to ensure proper polarity and circuit configuration.

9.5.3 Harness Wiring

All battery cable wiring shall be UL Style 1015 CSA TEW all of proper gauge with respect to design current and with sufficient strand count for flexibility and ease of handling.

9.5.4 Boots

Battery terminals shall be covered and insulated with molded boots so as to prevent accidental shorting.

12.4.1.13.10.0 Cabinet

12.4.1.13.10.1 General

- The dimensions for the UPS cabinet shall be 48 inches in height, 16.5 inches in width and 16.5 inches in depth.
- The Inverter/Charger Unit shall be shelf or rack mounted on a standard EIA19” rack.
- All interconnect wiring shall be provided and shall be UL Style 1015 CSA TEW.
- The Automatic Transfer switch shall be mounted on EIA 19” Rail.
- The Generator Transfer switch shall be mounted on EIA 19” Rail.

12.4.1.13.10.2 UPS Replacement

The UPS equipment and batteries shall be easily replaced and shall not require any special tools for installation.

12.4.1.13.10.3 Hot Swappable

The UPS inverter and batteries shall be hot swappable. There shall be no disruption to the Traffic Signal when removing the inverter or batteries for maintenance.

12.4.1.13.10.4 Ancillary Internal Installation Hardware

All necessary internal installation hardware (bolts, fasteners, washers, shelves, racks, etc.) shall be included.

12.4.1.13.10.5 Cabinet Sizing

The external cabinet shall be capable of housing four batteries up to a group 31 size, inverter/charger power module, automatic transfer switch, control panels, wiring, wiring harnesses, and all other ancillary equipment.

12.4.1.13.10.6 Cabinet Mounting

The UPS cabinet can be installed either as:

- Side-mounted to a Traffic Controller cabinet with no mounting brackets required.

- Pole-mounted cabinet with optional pole mount bracket kit.
- Free-standing base-mounted cabinet with optional riser for easy cable entrance.

12.4.1.13.10.7 Rating

All external cabinets shall be NEMA 3R rated. The enclosure shall be made of 0.125 inch (5052-H32) aluminum.

12.4.1.13.10.8 Ventilation

The external cabinet shall be ventilated through the use of louvered vents, filter, and a minimum of one thermostatically controlled fan. The filter shall be the re-usable type and matching the dimensions of the louver with both located on the bottom half of the door. The cabinet fan shall be DC operated for longer reliability.

12.4.1.13.10.9 Accessibility

All components, terminations, terminal blocks, relays, etc. shall be fully accessible.

12.4.1.13.10.10 Shelves

Two battery shelves shall be located in the bottom half of the enclosure. The bottom battery shelf shall be removable, and the top battery shelf will be welded to the enclosure sides. Air must be allowed to flow from the bottom of the cabinet and up the back internal wall. Neither the top battery shelf nor the Power Module shelf shall inhibit the airflow to the top of the cabinet.

12.4.1.13.10.11 Locking

The cabinet shall include a 3-point locking system, including a Type 2 Corbin lock and utilize a handle with pad locking capability.

12.4.1.13.10.12 Generator Plug Compartment

The UPS cabinet shall include a generator plug compartment with a flush mounted and gasketed locking access door, which locks the generator power cable in place when connected. The lock shall be a Type 2 Corbin lock. The generator compartment shall include a wired NEMA L5-30P Flanged Inlet connector.

12.4.1.13.10.13 Cabinet Extras

The following extras may be required ("Shall have") or optional ("Optional"), read each item.

- Optional On-Battery lamp mounted externally on the top of the cabinet that illuminates when the UPS is operating in inverter mode.
- Optional 8" Pedestal/Riser to raise the cabinet above the pad.
- Optional Battery Heater Mats to increase battery capacity in cold climates.
- Optional Internal lamp with door push-button switch to illuminate the interior of the cabinet.

12.4.1.13.11.0 **Warranty**

12.4.1.13.11.1 Uninterruptible Power Supply System

The UPS System shall include a 5-year warranty on parts and labor on UPS, Transfer/Bypass Switches, and Enclosure System to the Agency when utilizing the UPS Manufacturers own designed enclosure, meeting the above cabinet specifications. The RBMS shall have a 2-year warranty.

12.4.1.13.11.2 Enclosure

Should the agency decide not to use the enclosure provided by the UPS Manufacturer, the manufacturer shall provide a 3-year warranty on parts and labor on the UPS Inverter Module and a 2-year warranty on the Batteries and Transfer switches.

12.4.1.13.11.3 Batteries

The UPS Manufacturer shall provide a 5-year unconditional full replacement warranty for every battery sold to the Agency with the UPS under this specification when used with a BCMS or RBMS in the UPS manufacturer's own enclosure. Under the warranty time period, the battery must provide a minimum of 70% of its original capacity; otherwise it will be considered to be non-compliant to the warranty and replaced at no cost to the Agency or DOT by the UPS manufacturer.

12.4.1.13.12.0 Vendor Support

12.4.1.13.12.1 Technical Support

The UPS manufacturer shall provide at no charge, a toll-free 24/7 technical support phone number. The toll-free phone number shall be included in the UPS manual.

12.4.1.13.12.2 Local Support

There shall be a local distributor available to support the product.

12.4.1.13.12.3 Documentation

Equipment manuals shall be provided for each UPS cabinet. Equipment manuals shall include installation, operation, programming, maintenance and troubleshooting.

12.4.1.13.13.0 Quality Assurance

12.4.1.13.13.1 Design and Production

Each UPS shall be manufactured in accordance with a written manufacturer's Quality Assurance program. The QA program shall include, as a minimum, specific design and production QA procedures.

12.4.1.13.13.2 ISO and TL Certified

The UPS Power Module manufacturer shall be ISO14001 and TL9000 certified.

12.4.1.13.13.3 UL/CSA Testing and Marks

The UPS shall be tested to comply with UL 1778, CSA 22.2 No. 107.3 and must bear the UL CSA mark.

12.4.1.13.13.4 Design Qualification Testing

Equipment manuals shall be provided for each UPS cabinet. Equipment manuals shall include installation, operation, programming, maintenance and troubleshooting.

12.4.1.13.14.0 Remote Battery Monitoring System

12.4.1.13.14.1 A Remote Battery Monitor System (RBMS) shall be permanently installed into the UPS/Battery cabinet to monitor the four UPS batteries (4-12V battery blocks). The RBMS shall have the ability to monitor, read and record both the battery string and individual battery voltages, individual battery admittance (inverse of impedance), and individual battery temperatures and to provide a real-time evaluation of the battery bank health.

12.4.1.13.14.2 The device shall be hardened and operate at a temperature range of -40°C to 80°C (-40°F to 175°F). The device shall include 4 individual 12-volt battery sensors that attach to the top of the battery via adhesive backed hook-loop fasteners. Each sensor shall have an LED for status information.

12.4.1.13.14.3 The RBMS shall have a built-in web interface for communications over Ethernet which is viewable with Chrome and Edge web browsers. Web interface must not require Java plugins.

14.3.1 Battery voltage, admittance, and temperature shall be immediately viewable for each battery upon opening. These values shall be displayed on color coded bar graphs that represent the value. Bar graphs are to be green for no alarm, red for major alarm, and yellow for minor alarm.

14.3.2 User shall be able to set major and minor, high and low alarms for battery voltage, admittance, and temperature.

14.3.3 Battery string and delta voltages are to be reported and have user settable major and minor, high and low alarms.

- 14.3.4 Baseline admittance shall be user settable. The set baseline admittance will be used by all batteries and will automatically display the percentage difference between the baseline and current state.
 - 14.3.5 There shall be a checkbox to Flash the Sensor LED on an individual battery, which aids in being able to physically identify it.
 - 14.3.6 IP Address of RBMS can be changed through web interface.
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- 12.4.1.13.14.4 The RBMS shall be able send alarm notifications via email and SNMP.
 - 12.4.1.13.14.5 The RBMS shall include software to automatically poll each intersection, up to 1000 devices per software program, reading individual battery voltage, admittance, and temperature, while confirming each is within its user programmable parameters and save this data to a csv file. The software communications shall be SNMP via TCP/IP. The system shall have the ability to program the intervals as to when each reading is taken, by days, weeks or months. The software shall be provided as part of the system cost.
 - 12.4.1.13.14.6 The RBMS shall also perform as a battery balancer, continuously monitoring and balancing all batteries in the string, which can extend the life of the battery. The RBMS shall allow for any single 12V battery within the battery string to be replaced without replacing all batteries in the string during the battery warranty period.

PART 5 – DRAWINGS
