



# Buildings & Grounds Project Manual

**Name of project:**  
Zero Emissions Bus Depot

**Department:**  
Public Works Engineering

*Notice to Contractors, Proposal, and Special Provisions for the*  
**Zero Emissions Bus Depot Project**  
Public Works – Engineering

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**Pre-Bid information can be found at:**  
[https://www.roseville.ca.us/business/procurement\\_services/bids\\_rfps](https://www.roseville.ca.us/business/procurement_services/bids_rfps)

**Recommended for Approval:**

Stefanie A. Kemen Digitally signed by Stefanie A. Kemen  
Date: 2022.01.27 14:00:45 -08'00'

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Stefanie Kemen  
*Engineering Manager*

**Approved By:**

Jason Shykowski Digitally signed by Jason Shykowski  
Date: 2022.01.27 14:04:21 -08'00'

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Jason Shykowski  
*Public Works Director*

**Contract: 500111**

For use in connection with the 2015 State of California Standard, 2015 Standard Plans,  
Labor Surcharge and Equipment Rental Rates

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CITY OF ROSEVILLE

DEPARTMENT OF PUBLIC WORKS

Name of Project: Zero Emissions Bus Depot

NOTICE TO CONTRACTORS

NOTICE IS HEREBY GIVEN THAT sealed Proposals will be received at the Office of the City Clerk, 311 Vernon Street, Roseville, California, until March ## at 3:00 p.m. Late Proposals will be rejected. No exceptions.

The Proposals will be publicly opened and read by the City Clerk or designee of the City of Roseville at 3:05 p.m. on March ##, 2022 at the Office of the City Clerk located at 311 Vernon Street, Roseville California for the following project: Zero Emissions Bus Depot.

A pre-bid meeting will be held at \_\_\_\_\_  
\_\_\_\_\_.

A Project Manual, including all Contract Documents and the Proposal forms for bidding this project, may be obtained on-line from the City of Roseville's website at [https://www.roseville.ca.us/business/procurement\\_services/bids\\_rfps](https://www.roseville.ca.us/business/procurement_services/bids_rfps). All communications relative to this project shall be conducted through Public Purchase.

Bids shall be submitted on the City's Proposal Forms included in the Project Manual, plainly endorsed with the Bidder's name together with signed acknowledgement of any and all addenda. Proposal Forms shall be securely sealed in a suitable envelope marked with the name and address of the Bidder, and marked in capital letters on the front and back of the envelope as follows:

## **ZERO EMISSIONS BUS DEPOT**

(Name of Bidder)

(Address of Bidder)

Whether mailed or personally delivered, all bids shall be addressed to the City of Roseville, Office of the City Clerk, 311 Vernon Street, Roseville, California, 95678.

Each bid must be accompanied by a Bid Guaranty in the form of a Certificate of Deposit, Certified or Cashier's Check, Bidder's Bond or Irrevocable Standby Letter of Credit in an amount equal to at least ten percent (10%) of the Bidder's Grand Total Price. The Bid Guaranty will be retained by the City and applied to any and all damages sustained by the City in the event that the successful Bidder fails or refuses to enter into the Contract awarded to it and to furnish all required bonds and Certificates of Insurance. The City intends to award the Contract to the lowest responsible Bidder based on the Grand Total Bid Price for all components of the Project. To the extent allowed by law, the City reserves the right to reject any and all bids and/or to waive any irregularities or informalities in any bid or in the bidding procedure. The City specifically reserves the right to not award the Contract after the opening of bids.

Any bid may be withdrawn at any time prior to the time fixed in the public notice for the deadline submission of bids only by written request for the withdrawal of the bid filed with the City Clerk. The request shall be executed by the Bidder or his or her duly authorized representative. The withdrawal of a bid does not prejudice the right of the Bidder to file a new bid by the submission deadline. Whether or not bids are opened exactly at the time fixed in the public notice for opening bids, a bid will not be received after the deadline submission of bids nor may any bid be withdrawn after the time fixed in the public notice for deadline for

submission of bids. Immediately following the deadline for submission of bids all bids shall become the property of the City of Roseville and the City is under no obligation to return bids.

Bids will be examined and reported to the City Council within sixty (60) business days after the bid opening. Except as permitted by applicable law, no Bidder may withdraw its bid for a period of sixty (60) business days after the date of bid opening. Each Bidder will be notified of any award of the Contract by the City.

The City will affirmatively ensure non-discrimination on the basis of one or more of the following: race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, age, sexual orientation, or military and veteran status in the award and administration of contracts that it awards.

Pursuant to Public Contract Code Section 22300, the successful Bidder may submit certain securities in lieu of the City withholding retention of payments during the Project.

The City has determined that the Contractor shall possess a valid Class A, General Engineering Contractor's license at the time that the bid is submitted, as well as any other license classification as may be required by the laws of the California for the performance of the work specified in the Contract Documents. Said license shall be maintained during the Contract period. Failure to possess the specified license shall render the bid nonresponsive and will act as a bar to the award of the Contract to any Bidder not possessing such a license at the time of bid submittal. The Contractor shall provide certification of the license, its number and the expiration date on the proposal form.

The work is to be done in Placer County. Pursuant to California Labor Code Section 1773, the City has ascertained the General Prevailing Rate of Wages in the County in which the work is to be done to be as determined by the Director of Industrial Relations of the State of

California. The Contractor is hereby made aware that information regarding prevailing wage rates may be obtained from the State Department of Industrial Relations and/or the following website address: <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>. The Contractor is required to post a copy of the applicable wage rates at the job site. Attention is directed to Section 5 “Legal Relations and Responsibility” of the General Conditions.

Pursuant to Labor Code Section 1771.1(b), notice is hereby given that a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in Labor Code Sections 1720, et seq., unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5 or exempt from registration requirements pursuant to Labor Code Section 1725.5(f). It is not a violation of Labor Code Section 1771.1 for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform work pursuant to Labor Code Section 1725.5 at the time the contract is awarded or is exempt from registration requirements pursuant to Labor Code Section 1725.5(f). The Contractor is hereby notified that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

All questions prior to the deadline for bid submissions shall be directed to the attention of \_\_\_\_\_ via Public Purchase. The deadline for submissions of questions and clarifications regarding the Contract Documents is 10 calendar days before the deadline for bid submissions. Only Addenda issued by the City are binding.

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City Clerk, City of Roseville

Dated: \_\_\_\_\_

Published: \_\_\_\_\_

## INSTRUCTIONS TO BIDDERS

### **SECTION 1. GENERAL**

1-1.01        **GENERAL.** These Instructions to Bidders form a part of the Contract Documents. Capitalized terms are defined in the General Conditions Section 1.

1-1.02        **EXAMINATION OF PLANS, CONTRACT DOCUMENTS AND SITE OF THE WORK.** The Bidder shall examine carefully the site of the Work and all the Contract Documents, including these Instructions to Bidders, and shall inform itself of the conditions relating to the execution of the Work. Failure to do so will not relieve the successful Bidder of its obligation to enter into an Agreement and complete the Work in strict accordance with the Contract Documents. Conditions relating to the execution of the Work include the requirements of federal, state, and local laws, statutes and ordinances relative to the execution of Work, including, but not limited to, applicable regulations concerning prevailing wage rates, non-discrimination in the employment of labor, protection of the public, employee health and safety, and environmental protection.

The submission of a bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work to be performed, the quantities of materials to be furnished, and as to the requirements of all the Contract Documents.

1-1.03        **EXISTING INFORMATION.** Where the Department has made investigations of site conditions, including subsurface conditions in areas where Work is to be performed under the Contract, such investigations are made only for the purpose of study and design. City does not represent that such conditions as found in these investigations or inferences or conclusions drawn as a result of these investigations will represent actual site

conditions and hereby disclaims any liability as a result of Contractor's or Bidder's reliance on such investigations. City will presume that all Bidders have conducted their own site investigations, including investigations of subsurface conditions. Where such investigations have been made, Bidders or Contractors may, upon written request, inspect the records of the Department as to such investigations subject to the conditions set forth in these Instructions to Bidders. Such inspection of records may be made only at the location noted above. The records of such investigations are not a part of the Contract Documents and are shown solely for the convenience of the Bidder or Contractor. The City assumes no responsibility whatsoever with respect to the sufficiency or accuracy of the investigations made, the records thereof, or of the interpretations set forth therein or made by the City in its use thereof. The City makes no warranty or guarantee, either express or implied, that the conditions indicated by such investigations or records are representative of those existing throughout such areas, or any part thereof, or that unforeseen developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

No information derived from such inspection of records of investigations or compilation thereof made by the City, the Department or from the Engineer, or his or her assistants, will in any way relieve the Bidder or Contractor from properly examining the site and making such additional investigations as it may elect, or from properly fulfilling the terms of the Contract.

## SECTION 2: BID REQUIREMENTS

2-1.01            **PROPOSAL FORMS.** The Department will furnish to each Bidder standard Proposal Forms, which, when filled out and executed may be submitted as the bid. Proposals shall include all pages in the Project Manual with page numbers marked “PROP” plus the Addendum acknowledgment form (front sheet) from all Addenda received by the Bidder. Proposals shall be removed from the Project Manual. The full Project Manual shall not be submitted with the proposal. Bids not presented on forms so furnished will be disregarded.

The Proposal and one (1) copy thereof shall be submitted as directed in the “Notice to Contractors” under sealed cover plainly marked as a Proposal, and identifying the project to which the Proposal relates and the date of the bid opening therefor. Proposals which are not properly marked may be disregarded.

All blank spaces in the Proposal must be completed, as required, in ink. All price information shall be shown, clearly legible, in figures where required.

The Bidder shall sign the Proposal in the blank space provided therefor. If the Bidder is the sole owner, the Proposal shall be signed by the owner. If the Bidder is a corporation, the legal name of the corporation and its State of incorporation shall be set forth and the Proposal shall be signed by at least two officers authorized to sign contracts on behalf of the corporation. If the Bidder is a partnership, the true name of the firm shall be set forth, the names and addresses of all partners shall be given and the Proposal shall be signed by a partner in the firm authorized to sign contracts on behalf of the partnership. If the Bidder is a joint venture, the Proposal shall be signed on behalf of each participating company by officers or other individuals who have the full and proper authorization to do so. If the Proposal is signed by an agent of the Bidder other than an officer of a corporation or a member of a partnership, a notarized Power of

Attorney must be on file with the City prior to opening of bids or must be submitted with the Proposal. If requested by the City, the Bidder shall promptly submit evidence satisfactory to the City of the authority of the person signing the Proposal.

2-1.02            **SUBMISSION OF BIDS.** Bids must be submitted at the prescribed time and location specified in the Notice to Contractors. Any submission received after the prescribed time shall be rejected, regardless of whether or not bids are opened exactly at the prescribed time.

Any unauthorized conditions or qualifications entered on, or changes made to, the Proposal may render it invalid and may cause its rejection.

No telegraphic, telephonic, or facsimile or other electronically transmitted bids will be considered.

2-1.03            **REQUIRED LISTING OF PROPOSED SUBCONTRACTORS.** Each Proposal shall list the name, address and Contractor license number of each Subcontractor to whom the Bidder proposes to subcontract portions of the Work in an amount in excess of one-half of one percent (0.5%) of its total bid, in accordance with Section 4100 to 4114, inclusive, of the Public Contract Code for the State of California. The Bidder shall list the Subcontractor's license number and the portion of the Work that will be done by each Subcontractor. If the Bidder fails to specify a Subcontractor for any portion of the Work, the Bidder agrees to perform that portion of the Work itself, and represents that it is qualified to perform that portion of the Work itself. The Bidder's attention is invited to other provisions of the Public Contract Code related to the imposition of penalties for a failure to observe its provisions by using unauthorized Subcontractors or by making unauthorized substitutions.

2-1.04            **CONTRACTOR'S LICENSING LAWS.** Attention is directed to the

provisions of Business and Professions Code Chapter 9 of Division 3 concerning the licensing of Contractors.

All Bidders at the time of bid submittal shall be licensed as Contractors in accordance with the laws of this State. Any Bidder or Contractor not so licensed is subject to the penalties imposed by such laws. The form of Contractor's license required is stated in the Notice to Contractors, provided that the City makes no representation as to whether the State may require other or additional licenses. It is the Bidder's and Contractor's responsibility to obtain the correct Contractor's licenses. Bidders shall be skilled and regularly engaged in the general class or type of Work called for under this Contract.

All Bidders and Contractors, including Subcontractors, shall have a current City business license before undertaking any Work.

2-1.05        **NONCOLLUSION DECLARATION.** By submitting a bid, the Bidder represents and warrants that such bid is genuine and not a sham or collusive or made in the interest or on the behalf of any person therein named, and that the Bidder has not, directly or indirectly, included or solicited any other Bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding, and that the Bidder has not in any manner sought collusion to secure the Bidder an advantage over any other Bidder.

Bidders shall submit a properly completed and executed "Noncollusion Declaration" in the form required by Public Contract Code Section 7106 and provided with the Proposal (PROP-11).

2-1.06        **DISQUALIFICATION, REMOVAL OR OTHER PREVENTION OF BIDDING.** A bid may be rejected on the basis of a Bidder, any officer of such Bidder, or any employee of such Bidder who has a proprietary interest in such Bidder, having been disqualified,

removed, or otherwise prevented from bidding on, or completing a federal, state, or local project because of a violation of law or a safety regulation.

2-1.07            **PROPOSAL GUARANTY.** All bids shall be accompanied by one of the following forms of Bidder's security: Cash, a cashier's check, a certified check, or a Bidder's bond executed by an admitted California surety insurer, made payable to the City of Roseville, or any other form of security deemed acceptable by the City Attorney. The security shall be in an amount equal to at least ten percent (10%) of the amount bid. A bid will not be considered unless one of the form of Bidder's security is enclosed with it.

A Bidder's bond shall conform to the City's bond form in the Proposal and shall be properly filled out and executed.

2-1.08            **SCHEDULE OF BID PRICES.** Bidders are directed to submit unit and lump sum prices for all Work set forth in the Contract Documents on the Proposal Form entitled "Schedule of Bid Prices."

Unit prices and lump sum prices, as indicated, must be entered in the appropriate spaces provided in the Schedule of Bid Prices. If applicable, unit prices shall be multiplied by the quantities shown, and the total shall be inserted in the Amount column. In the event of any error or discrepancy between the unit price and the calculated amount, the unit prices shall govern.

The City may correct any mathematical errors apparent on the face of the bid.

The amounts shown in the Amount column must be added together in arriving at the Grand Total Bid Price.

Amounts for Allowance bid items must be entered in the exact amount in the Amount column.

The prices included within the Schedule of Bid Prices shall include all costs for labor,

materials, tools, equipment, services, Subcontractors, suppliers, taxes, insurance, shipment, delivery, overhead, profit, and all other costs necessary to perform the Work in accordance with the Contract Documents.

The Grand Total Bid Price shall be indicated in the Summary table form included with the Schedule of Bid Prices. The Grand Total Bid Price shall be the sum of the amounts bid for each of the designated portions of the Work, as more specifically described on the Schedule of Bid Prices form itself.

Full compensation for complying with the Contract Documents, including requirements of the Standard Specifications, the General Conditions, Supplemental Conditions, and all warranties, shall be considered included in the bid items and no additional compensation shall be allowed therefor.

Full compensation for completion of all work as shown on the plans, as specified in the Specifications, and as directed by the City, shall be considered included in the bid items and no additional compensation shall be allowed.

Bidders are strongly discouraged from submitting unbalanced bids. As used herein, the term “unbalanced bid” is defined as any bid that does not include a reasonable proportionate allocation of indirect costs and profit of each bid item indicated in the Schedule of Bid Prices. The City reserves the right to reject any unbalanced bid if the City determines that there is a reasonable doubt that an acceptance of the bid will not result in the lowest ultimate cost to the City with regard to the work or a disproportionate distribution of contract funds.

The City reserves the right to delete any bid item in its entirety and/or significantly reduce the quantity of Work under a bid item. The City makes no representation that any Work under a bid item will be performed during the course of the Project or that the Work will be

performed at the quantities included in the Schedule of Bid Prices. As provided in the General Conditions, for any deleted Work, Contractor shall not be entitled to payment of the indirect costs and profit included for said bid item. All bid items shall be considered distinct and severable from the remaining bid items, and each Bidder acts at its peril if its bid is unbalanced.

The City shall compare bids on the basis of the Grand Total Bid Price, which includes the base bid and any alternates designated on the Schedule of Bid Prices. Alternates may or may not be awarded, or may be awarded in any combination, at the City's discretion.

2-1.09            **WITHDRAWAL OF PROPOSALS.** Any bid may be withdrawn at any time prior to the time fixed in the Notice to Contractors for the opening of bids, provided that a request in writing, executed by the Bidder or its duly authorized representative, for the withdrawal of such bid is filed with the City Clerk. Facsimile and electronic mail requests are not acceptable. The withdrawal of a bid shall not prejudice the right of a Bidder to file a new bid. The withdrawal of any bid after the time fixed in the Notice to Contractors for the opening of bids will not be permitted.

2-1.10            **ADDENDUM.** Proposals shall include all costs and account for all Addenda issued prior to opening of bids. The Bidder is responsible for verifying that all issued Addenda have been received. An Addendum acknowledgment form for each Addendum shall be included as part of the Proposal submittal.

2-1.11            **PUBLIC OPENING OF PROPOSALS.** Proposals will be publicly opened and read at the time and place indicated in the Notice to Contractors. Bidders or their authorized agents are invited to be present.

2-1.12            **TRENCHING AND EXCAVATION WORK.** In accordance with the provisions of California Labor Code Section 6707, if the Work involves construction of a

pipeline, sewer, sewage disposal system, boring or jacking pits, or similar trenches or open excavations, which are five feet (5') or deeper, each bid submitted shall contain, as a bid item, adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life or limb, which shall conform to all applicable safety orders.

### SECTION 3: EVALUATION OF BIDS

3-1.01        **BID EVALUATION PROCESS.** Bids will be evaluated to determine the apparent low Bidder. The apparent low Bidder will be determined on the basis of the Grand Total Bid Price, as shown in the Schedule of Bid Prices. If additive or deductive alternates are used in the Schedule of Bid Prices, the apparent low Bidder will be the Bidder with the lowest total of the bid prices for base contract items plus the alternates designated by the City as those that will be used for determining the lowest bid price. However, the City reserves the right to (1) not award any alternates or (2) award any combination of alternates.

In case of discrepancy between the total of the base contract items and any specified alternates and the stated Grand Total Bid Price, the total of the base contract items plus specified alternates shall prevail. Any mathematical errors that appear on the face of the bid will be corrected by the City and the City will use the mathematically corrected addition. For example, if the mathematical total of Bidder's base contract items plus specified alternates equals \$1,000,000, but the Bidder has written \$1,250,000 as the Grand Total Bid Price, the City will consider \$1,000,000 to be the Bidder's Grand Total Bid Price for purposes of comparison to other Bidders and actual bid award. The City reserves its rights to reject or accept bids based on discrepancies between the stated Grand Total Bid Price and the actual mathematical total of the base contract bid items, plus specified alternates.

3-1.02        **REJECTION OF IRREGULAR PROPOSALS.** Proposals may be rejected in the City's sole discretion if they show any alterations of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. However, the City reserves the right to waive any minor irregularities and informalities in any bid or in the bid procedure for any reason.

3-1.03            **COMPETITIVE BIDDING.** If more than one proposal is offered by any individual, firm, partnership, corporation, association, or any combination thereof, under the same or different names, all such proposals may be rejected. A party who has quoted prices on materials or Work to a Bidder is not thereby disqualified from quoting prices to other Bidders, or from submitting a bid directly for the materials or Work.

All Bidders are put on notice that any collusive agreement to control or affect the awarding of this Contract is in violation of the competitive bidding requirements of the City Charter, State Contract Act and the Business and Professions Code and may render void any Contract let under such circumstances.

3-1.04            **RELIEF OF BIDDERS.** If the Bidder claims a mistake was made in its bid, the Bidder shall give the Department written notice within five (5) Days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred. No relief from a claimed mistaken bid shall be granted unless such mistake clearly appears on the face of the bid submitted to the City. Claimed mistakes on backup worksheets, spreadsheets, computerized bidding programs, or any other similar calculative bidding mistake which is not apparent on the face of the bid shall not under any circumstance be considered as a basis for relief. The burden of proving the occurrence of a mistake entitling a Bidder to relief from its bid rests entirely on the Bidder. Relief from bids shall be in the City's sole discretion.

## **SECTION 4: AWARD AND EXECUTION OF CONTRACT**

4-1.01           **AWARD OF CONTRACT.** The City reserves the right to reject any and all proposals and to award (or not award) any combination of bid items at its option. Any such award will be to the lowest responsible Bidder whose proposal complies with the requirements prescribed for the bid items awarded. Such award, if made, will be made within sixty (60) business days after the opening of the proposals. If the lowest responsible Bidder refuses or fails to execute the Contract, or provide an acceptable Performance Bond, Payment Bond, and insurance certificate(s), the City may award the Contract to the second lowest responsible Bidder. Such award, if made, will be made within eighty-two (82) business days after the opening of proposals. If the second lowest responsible Bidder refuses or fails to execute the Contract, or provide an acceptable Performance Bond, Payment Bond, and insurance certificate(s), the City may award the Contract to the third lowest responsible Bidder. Such award, if made, will be made within one hundred four (104) business days after the opening of the proposals. The above time periods within which the award of Contract may be made are subject to extension for such further period as may be agreed upon in writing between the City and the Bidder concerned.

4-1.02           **RETURN OF BIDDER'S SECURITIES.** Within ten (10) Days after the award of the Contract, the City Clerk will return all Bidders' securities, other than Bidders' bonds, accompanying the proposals that are not to be further considered in making the award. Retained Bidders' securities will be held until the Contract has been fully executed, after which all Bidders' securities, except Bidders' bonds and any Bidders' securities that have been forfeited, will be returned.

4-1.03           **CONTRACT BONDS.** The successful Bidder shall furnish two (2)

bonds in the form contained in the section entitled Insurance Broker Information Packet and Bonds. One (1) bond shall secure the payment of the claims of laborers, mechanics or materialmen employed on the Work under the Contract, and the other bond shall guarantee the faithful performance of the Contract.

Each of the two (2) bonds shall be in a sum equal to one hundred percent (100%) of the Contract Price. If the Contract Price increases by the issuance of Change Orders, the penal amounts of the bonds required shall increase accordingly. Sureties on each of said bonds shall be satisfactory to the City.

All alterations, extensions of time, extra and additional Work, and other changes authorized by the Standard Specifications, the General Conditions, the Supplemental Conditions or any part of the Contract may be made without securing the consent of the surety or sureties on the Contract bonds.

Furthermore, the successful Bidder shall furnish a certificate from the County Clerk as required by California Civil Code of Procedure Section 995.660(a)(3).

4-1.04        **INSURANCE.** At the time of the execution of the Contract, the Contractor shall, at its own expense, procure, and at all times during the prosecution of the Work maintain in full force and effect Worker's Compensation Insurance, and Liability Insurance as specified in the General Conditions. The Contractor shall provide a Certificate of Insurance in the form contained in the section entitled Insurance Broker Information Packet.

4-1.05        **EXECUTION OF CONTRACT.** The Contract shall be signed by the successful Bidder and returned, together with all the required Contract bonds and insurance certificates, within fifteen (15) Days after the Contract has been awarded, or as otherwise directed, in writing, by the City.

If the Bidder is an individual, the Contract shall be executed personally by the Bidder. If the Bidder is a partnership, it is desirable that the Contract be executed by all of the partners, but it may be executed by one of them. If the Bidder is a corporation, it must be executed by two officers of the corporation consisting of (1) the chairman of the board, president or vice president; and (2) the secretary, assistant secretary, chief financial officer, treasurer or assistant treasurer, or by a person authorized by the corporation to execute written contracts on its behalf, and the corporate seal affixed thereto. In the alternative, a person other than an officer may sign the Contract, provided evidence satisfactory to the City is provided indicating the individual's authority to bind the corporation. If the corporate seal is not affixed to the Contract, or if it is executed by a person other than officers, or only by one officer, there must be attached to the Contract a certified copy of a resolution of the corporation authorizing such officer or person to execute written contracts for and on behalf of the corporation. If the Bidder is a joint venture, the Contract must be executed on behalf of each participating firm by officers or other individuals who have the full and proper authorization to do so.

4-1.06            **FAILURE TO EXECUTE CONTRACT.** Failure of the lowest responsible Bidder, the second lowest responsible Bidder, or the third lowest responsible Bidder to execute the Contract and file acceptable bonds and insurance as provided within fifteen (15) Days after the Contract has been awarded, or as otherwise directed, in writing, by the City, shall be just cause for annulment of the award and forfeiture of the Bidder's security. The successful Bidder may file with the City Clerk a written notice, signed by the Bidder or Bidder's authorized representative, specifying that the Bidder will refuse to execute the Contract if presented to Bidder. The filing of such notice shall have the same force and effect as the failure of the Bidder to execute the Contract and furnish acceptable bonds within the time prescribed.

## **SECTION 5: BID PROTEST PROCEDURES**

5-1.01        **POLICY/PROCEDURES.** It is the policy of the City to consider fully and adjudicate promptly protests filed by prospective Bidders relating to the City's bidding procedure or award of the Contract. Protests shall be filed and processed in accordance with Section 4.12.150 of the Roseville Municipal Code. A Bidder's failure to follow the bid protest procedures may result in rejection of the protest by the City.

PROPOSAL TO THE DEPARTMENT OF \_\_\_\_\_

Project: \_\_\_\_\_

Name of Bidder \_\_\_\_\_ Business Phone \_\_\_\_\_

Business Address \_\_\_\_\_

Place of Business \_\_\_\_\_

Contractor's License No. \_\_\_\_\_

License Expiration Date \_\_\_\_\_

License Classification Type \_\_\_\_\_

DIR Registration No. \_\_\_\_\_

Type of business organization: \_\_\_\_\_

\*If a Corporation, incorporated under the laws of the State of: \_\_\_\_\_

City of Roseville Business License No. \_\_\_\_\_

The undersigned Bidder herewith submits this Proposal and binds itself on award by the City of Roseville under this bid to execute a Contract in accordance with its bid and the Contract Documents.

The Notice to Contractors, Instructions to Bidders, Form of Agreement, Specifications, General Conditions, Supplemental Conditions, Contract Drawings, and Addenda, if any, are made part of this bid and all provisions thereof are hereby accepted, and all representations and warranties are required thereby are hereby affirmed.

The work to be done is described in the Bidding Documents entitled \_\_\_\_\_, City of Roseville, California.

This offer shall be irrevocable for a period of sixty (60) Days after the date on which bids are opened.

The undersigned Bidder understands that any clarification made to the above or any new and different conditions or information submitted on or with its Proposal, other than that requested, may render the bid non-responsive.

The undersigned, as Bidder, declares that the only persons or parties interested in this Proposal as principals are those named herein; that this Proposal is made without collusion with any other person, firm, or corporation; that the Bidder has carefully examined the location of the proposed Work, the attached Form of Agreement, and the plans, Specifications, and other Contract Documents; and agrees if this Proposal is accepted, that it will contract with the City of Roseville, in the form of a copy of the Agreement contained in the Project Manual, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Contract Documents, in the manner and time therein prescribed, and according to the requirements of the Director, as therein set forth, and that the Bidder will take in full payment therefore prices indicated in the Schedule of Bid Items, including all work modified by addendum numbers \_\_\_\_\_. (IF NONE, STATE NONE).

Bids are required for all Bid Items. The amount of the Bid for comparison purposes will be the total of all items awarded.

The Bidder shall set forth for each item of work, in clearly legible figures, an item (“unit”) price and a total for the item in the respective spaces provided for this purpose in the Schedule of Bid Items.

The prices included within the Schedule of Bid Items include all costs for labor, materials, tools, equipment, services, Subcontractors, suppliers, taxes, insurance, shipment, delivery, overhead, profit, and for all other costs necessary to perform the Work in accordance

with the Contract Documents.

Accompanying this Proposal is \_\_\_\_\_.

(Notice: Insert the words “Cash \$\_\_\_\_\_,” “Cashier's Check,” “Certified Check,” or “Bidder's Bond,” as the case may be, in an amount equal to at least ten percent (10%) of the total of the Bid.)

The names of all persons interested in the foregoing Proposal as Principals, are as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If SOLE OWNER, execute here:

I sign as sole owner of the business named above:  
\_\_\_\_\_

If PARTNERSHIP, one or more partners sign here:

The undersigned certify that we are partners in the business named above and that we sign this bid with the full authority to do so:  
\_\_\_\_\_  
\_\_\_\_\_

If CORPORATION, execute here:

Corporate Name: \_\_\_\_\_

Incorporated under the laws of the State of \_\_\_\_\_

The undersigned certify that they sign this bid with the full and proper authorization so to do:

By \_\_\_\_\_  
*Signature of Authorized Official\**

By \_\_\_\_\_  
*Signature of Authorized Official\**

\_\_\_\_\_  
*Title*

\_\_\_\_\_  
*Title*

\_\_\_\_\_  
*Typewritten or Printed Name*

\_\_\_\_\_  
*Typewritten or Printed Name*

If JOINT VENTURE, execute here:

Joint Venture name composed of: \_\_\_\_\_

The undersigned certify that they sign this bid with the full and proper authorization so to do:

\_\_\_\_\_  
*Signature of Authorized Official\**

\_\_\_\_\_  
*Signature of Authorized Official\**

\_\_\_\_\_  
*Title*

\_\_\_\_\_  
*Title*

\_\_\_\_\_  
*Typewritten or Printed Name*

\_\_\_\_\_  
*Typewritten or Printed Name*

\*If Bidder is a partnership or Joint Venture, give the full names of all partners and/or Joint Ventures in the space provided (use additional sheet if required). If Bidder is a corporation, two signatures are required as follows: (1) the Chairman, President, or Vice-President and (2) the Secretary, Assistant Secretary, Chief Financial Officer, Treasurer, or Assistant Treasurer. In the alternative, this Agreement may be executed by a single officer or a person other than an officer provided that evidence satisfactory to City is provided demonstrating that such individual is authorized to bind the corporation (example, a copy of a certified resolution from the corporation's board or a copy of the corporation's bylaws).

[LIST OF SUBCONTRACTORS FOLLOWS ON NEXT PAGE.]

## LIST OF SUBCONTRACTORS

Contractor's Name: \_\_\_\_\_

The Bidder is required to furnish the following information in accordance with the provisions of Section 4100 and 4114, inclusive, of the Public Contract Code of the State of California. This list and information shall include all Subcontractors that perform work, provide labor or render services to the Bidder in connection with the Project in an amount in excess of one-half of one percent (0.5%) of the total amount of the Bidder Grand Total Price.

PORTION/ TYPE OF WORK	% OF CONTRACT	SUB- CONTRACTOR'S NAME	CONTRACTOR LICENSE NO.	DIR REG NO.	BUSINESS ADDRESS (CITY, STATE)

SECURITY FOR COMPENSATION CERTIFICATE

(Required by California Labor Code Section 1861)

TO: City Council  
City of Roseville

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.

---

---

(Signature of Bidder)

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---

Business Address

---

Telephone

BIDDER'S BOND

City Council of the City of Roseville

KNOW ALL MEN BY THESE PRESENTS:

That we \_\_\_\_\_  
\_\_\_\_\_, as PRINCIPAL, and  
\_\_\_\_\_

a, \_\_\_\_\_ and duly authorized to transact business  
under the laws of the State of California, as SURETY, are held and firmly bound unto the City of  
Roseville in the penal sum of \_\_\_\_\_ dollars  
(\$ \_\_\_\_\_), being at least TEN PERCENT (10%) OF THE TOTAL AMOUNT OF  
THE BID of the Principal above named, submitted by said Principal to the City of Roseville,  
acting by and through the Public Works Director, for the work described below, for the payment  
of which sum in lawful money of the United States, well and truly to be made, to the Director of  
the Department to which said Bid was submitted, we bind ourselves, our heirs, executors,  
administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above-mentioned Bid to the City Council of  
the City of Roseville, as aforesaid, for certain construction specifically described as follows, for  
which Bids are to be opened at the Office of the City Clerk located at 311 Vernon Street,  
Roseville, California, on \_\_\_\_\_, 20\_\_ FOR

\_\_\_\_\_  
(Copy here the exact title of work as it appears on the Proposal.)

NOW, THEREFORE, IF THE AFORESAID PRINCIPAL is awarded the Contract and, within the time and manner required under the Contract Documents, after the prescribed forms are presented for signature, enters into a written Contract, in the prescribed form, in accordance with the Bid, and files all insurance and two (2) Bonds with the Department, one (1) to guarantee Faithful Performance and the other to guarantee Payment for Labor and Materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect.

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

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

Principal

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

Surety

\_\_\_\_\_

\_\_\_\_\_

Business Address

NOTE: To be considered complete, both the Principal and the Surety must sign this Bidder's Bond. In addition, signatures of those executing for the Surety must be properly acknowledged.

ZERO EMISSIONS BUS DEPOT PROJECT

CONTRACTOR: \_\_\_\_\_

SCHEDULE OF BID ITEMS

ITEM No.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (IN FIGURES)	SUBTOTAL (IN FIGURES)
1	Mobilization (10%)	LS	1	_____	_____
2	Clearing and Grubbing	LS	1	_____	_____
3	Water Quality Compliance	LS	1	_____	_____
4	Job Site Management	LS	1	_____	_____
5	Traffic Control	LS	1	_____	_____
6	Roadway Excavation	CY	6,038	_____	_____
7	Remove Tree	EA	10	_____	_____
8	Remove Sign & Post	EA	1	_____	_____
9	Remove & Salvage Weather Station	EA	1	_____	_____
10	Remove & Salvage Metal Bike Rack	LS	1	_____	_____
11	Remove & Salvage Wooden Bench	LS	1	_____	_____
12	Remove & Salvage Ash Receptacle	LS	1	_____	_____
13	Relocate PCC (Wheel Stops)	EA	30	_____	_____
14	Remove PCC (Curb)	LF	438	_____	_____
15	Remove PCC (Curb and Gutter)	LF	644	_____	_____
16	Remove PCC Sidewalk	CY	278	_____	_____
17	Remove Valley Gutter	LF	68	_____	_____
18	Remove Water Line Pipe (8" PVC)	LF	172	_____	_____
19	Remove Storm Drain Pipe (8",10" or 12" RCP)	LF	21	_____	_____
20	Remove Area Drain	EA	1	_____	_____
21	Remove Irrigation Structures	LS	1	_____	_____
22	Remove Fire Protection Water BFP and Meter	EA	3	_____	_____
23	Remove Electrical Conduit	LS	1	_____	_____
24	Cold Plane AC Pavement	SY	1,951	_____	_____
25	HMA (Type A)	TON	2,004	_____	_____
26	HMA (Overlay)	TON	198	_____	_____
27	Pavement Reinforcing Fabric	SY	1951	_____	_____

**ZERO EMISSIONS BUS DEPOT PROJECT**

CONTRACTOR: \_\_\_\_\_

ITEM No.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (IN FIGURES)	SUBTOTAL (IN FIGURES)
28	PCC Pavement	CY	0		
29	PCC Sidewalk	CY	2		
30	PCC Island Paving	CY	24		
31	Class II AB	CY	2,006		
32	PCC Curb (Vertical Curb)	LF	696		
33	PCC Curb (Flush Curb)	LF	38		
34	PCC Curb (Retaining Curb)	LF	397		
35	PCC (Valley Gutter)	LF	7		
36	PCC (Wheel Stops)	EA	17		
37	Detectable Warning Surface	SF	15		
38	Type F SD DI	EA	3		
39	Storm Drain Connection to (E ) Structure	EA	3		
40	6" DIP Pipe - Fire	LF	115		
41	6" PVC Pipe - Storm	LF	32		
42	8" PVC Pipe - Water, Storm	LF	598		
43	6" Perforated PVC Pipe - Basin	LF	289		
44	Perforated Pipe Cleanout - Basin	EA	17		
45	Relocate Fire Hydrant Assembly	EA	2		
46	Fire Department Connection - Relocated	EA	3		
47	Fire Post Indicator Valve - Relocated	EA	3		
48	Fire Protection Water BFP and Meter	EA	3		
49	Water Connection with (E) Water Line	EA	6		
50	Weather Station - Relocated	EA	1		
51	PG&E Pipe Relocations (Trenching/Backfill/Coordination)	LS	1		
52	Biofiltration Area	SF	1,803		
53	Landscape Planting	SF	4,740		
54	Irrigation Pipe	LF	300		
55	Signing and Striping	LS	1		
56	Electrical - Light Duty Fleet	LS	1		

ZERO EMISSIONS BUS DEPOT PROJECT

CONTRACTOR: \_\_\_\_\_

ITEM No.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (IN FIGURES)	SUBTOTAL (IN FIGURES)
57	Electrical - Bus Charging	LS	1	_____	_____
<b>TOTAL OF BASE BID ITEMS (1 TO 57)</b>				_____	_____
<b>ADDITIONAL CHARGER INSTALLATION ADD ALTERNATE</b>					
58	150kW Heavy Vehicle Charger (CS)	EA	3	_____	_____
59	Depot Charge Box (Dispenser)	EA	6	_____	_____
<b>GRAND TOTAL OF BID ITEMS (1 TO 59)</b>				_____	_____

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].

\_\_\_\_\_  
(Signature of Declarant)

DISQUALIFICATION QUESTIONNAIRE

The Bidder shall complete, under the penalty of perjury, the following questionnaire:

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

Yes \_\_\_\_\_

No \_\_\_\_\_

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

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NAME OF BIDDER: \_\_\_\_\_

SIGNATURE OF BIDDER: \_\_\_\_\_

TITLE OF BIDDER: \_\_\_\_\_

DATE: \_\_\_\_\_

ACKNOWLEDGEMENT OF INSURANCE AND BOND REQUIREMENTS

Included in the Bid Price is full compensation for the requirements set forth in the INSURANCE BROKER INFORMATION PACKET of the Project Manual.

NAME OF BIDDER: \_\_\_\_\_

SIGNATURE OF BIDDER: \_\_\_\_\_

TITLE OF BIDDER: \_\_\_\_\_

DATE: \_\_\_\_\_

DISCLAIMER OF WARRANTIES AND ACCURACY OF DATA

Although soil and site investigation reports have been obtained from sources believed to be reliable, no warranty expressed or implied is made regarding accuracy, adequacy, completeness, legality, reliability or usefulness of any information contained therein. These reports are subject to change at any time, may be incomplete, and/or may contain errors. This information is provided for informational purposes only. The City of Roseville provides this information on an "as is" basis. Warranties of any kind, express or implied, or statutory, including but not limited to the implied warranties of merchantability, and fitness for a particular purpose ARE DISCLAIMED to any party viewing these documents or to any third party.

The City of Roseville does not accept and expressly disclaims liability to any party viewing such information, or to any third party whatsoever, for any loss, damage, or injury (including incidental or consequential damages) whether such loss, damage, or injury is the result of negligence, willful or intentional misconduct, or any other cause.

I have read and acknowledged the above disclaimer and agree to hold harmless the City of Roseville on any theory of liability for any loss, damage or injury whether in contract, strict liability or tort arising in any way out of the use or contents of the released information or documents described above or the performance of the work called for herein.

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Business/Company/Corporation

\_\_\_\_\_  
Date

\_\_\_\_\_  
Address

\_\_\_\_\_  
Phone

**END OF PROPOSAL**

A G R E E M E N T

THIS AGREEMENT, is made and entered into this \_\_\_\_ day of \_\_\_\_\_,  
20\_\_\_\_, by and between the City of Roseville, a municipal corporation, (“CITY”), and  
\_\_\_\_\_, a \_\_\_\_\_,  
 (“CONTRACTOR”); and

W I T N E S E T H:

WHEREAS, the City Council of the CITY, at a meeting held on the \_\_\_\_ day of  
\_\_\_\_\_, 20\_\_\_\_, approved plans and specifications for the  
\_\_\_\_\_  
and directed the City Clerk to advertise for sealed proposals for doing said work and providing  
that bids be submitted on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_; and

WHEREAS, the City Clerk, thereafter duly and regularly caused a notice to be published  
in the manner and for the time prescribed by law; and

WHEREAS, CONTRACTOR, pursuant to the provisions of said notice duly filed a bid  
with the City Clerk, a true copy of which bid is now on file in the office of the City Clerk, and is  
hereby referred to and by this reference made a part hereof as fully as if set forth at length herein;  
and

WHEREAS, all bids received pursuant to said notice were opened and examined and  
publicly declared at the time specified in said advertisement for bids and at a meeting of the City  
Council held on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the Council found and

declared the bid of CONTRACTOR to be the lowest responsible bid and thereupon awarded a contract to CONTRACTOR to do the work referred to in the aforementioned specifications.

NOW, THEREFORE, the parties agree as follows:

1. THE WORK. CONTRACTOR agrees:

a. To do the work and furnish all the labor, materials, tools, supplies, equipment, superintendence, insurance, and bonds required for the \_\_\_\_\_

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in accordance with the Contract Documents (the Work).

b. To do and perform the Work contemplated hereby in a good and workmanlike manner under the direction of and to the satisfaction of the Director of Public Works of the City of Roseville.

2. PAYMENT. CITY shall pay CONTRACTOR \_\_\_\_\_ dollars (\$ \_\_\_\_\_) for the Work to be done under this Agreement in accordance with the Contract Documents.

3. CONTRACT DOCUMENTS. The complete Agreement between the parties hereto consists of the following documents:

a. The advertisement for bids (including the notice to bidders, instructions to bidders and proposals);

b. The accepted bid;

c. Plans and specifications (including general conditions, supplemental conditions, special provisions and construction details);

d. Bonds and insurance required by the specifications; and

e. This contract.

All documents specified above are intended to operate so that any work called for in any one and not mentioned in the other, or vice versa, is to be executed the same as if mentioned in all said documents.

4. LIQUIDATED DAMAGES. In the event CONTRACTOR does not complete the Work within the time specified, CONTRACTOR agrees that CITY will suffer damages. Inasmuch as the actual damages which would result from such breach by CONTRACTOR under this Agreement are uncertain, and would be impractical or extremely difficult to fix, CONTRACTOR agrees that it shall pay, or CITY shall deduct from CONTRACTOR’s fee, the amount of \$\_\_\_\_\_ per day as liquidated damages, in the event of such delay.

5. TIME OF COMPLETION. Time is of the essence of this Agreement. CONTRACTOR shall complete all Work under the Contract Documents within \_\_\_\_\_ Days of the date of this Contract. CONTRACTOR shall begin work by the date specified in the “Notice to Proceed” letter and shall diligently prosecute all of the Work under this Contract in all parts and requirements as defined in the Contract Documents.

6. SERVICE OF NOTICE. Any notice required or permitted to be given under this Agreement shall be deemed given when (a) personally delivered to the recipient identified below; (b) mailed by registered or certified mail, return receipt requested, postage pre-paid, to the address specified below; or (c) sent by facsimile, with confirmation of receipt, to the facsimile number identified below.

CITY OF ROSEVILLE

CONTRACTOR

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CITY may also act through either its architect or construction manager if CITY expressly gives notice to CONTRACTOR, in writing, that CITY's designee has authority to act for CITY in a specific capacity.

7. DISPUTES. Disputes arising from this Agreement will be determined in accordance with the Contract Documents and Public Contract Code Sections 10240-10240.13.

8. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

9. INDEPENDENT CONTRACTOR. CONTRACTOR shall act as an independent contractor, and covenants and agrees that it will conduct itself consistent with such status, that it will neither hold itself out as, nor claim to be, an officer or employee of CITY by reason of this Agreement.

10. SUCCESSORS IN INTEREST. This Agreement shall be binding upon the heirs, successors, executors, administrators and assigns of the respective parties hereto.

11. MODIFICATION. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

12. SEVERABILITY. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

13. INTEGRATED AGREEMENT. This is an integrated agreement and contains all of the terms, considerations, understanding and promises of the parties. It shall be read as a whole.

14. CONTRACTORS LICENSE LAW. CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS' STATE LICENSE

BOARD WHICH HAS JURISDICTION TO INVESTIGATE COMPLAINTS AGAINST CONTRACTORS IF A COMPLAINT REGARDING A PATENT ACT OR OMISSION IS FILED WITHIN FOUR (4) YEARS OF THE DATE OF THE ALLEGED VIOLATION. A COMPLAINT REGARDING A LATENT ACT OR OMISION PERTAINING TO STRUCUTRAL DEFECTS MUST BE FILED WITHIN TEN (10) YEARS OF THE DATE OF THE ALLEGED VIOLATION. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' STATE LICENSE BOARD, P.O. BOX 26000, SACRAMENTO, CALIFORNIA 95826.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. \_\_\_\_\_, adopted by the Council of the City of Roseville on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, and CONTRACTOR has caused this Agreement to be duly executed.

CITY OF ROSEVILLE, a  
municipal corporation

\_\_\_\_\_, a  
\_\_\_\_\_

BY: \_\_\_\_\_  
DOMINICK CASEY  
City Manager

BY: \_\_\_\_\_  
its: \_\_\_\_\_

and

ATTEST:

BY: \_\_\_\_\_  
its: \_\_\_\_\_

BY: \_\_\_\_\_  
SONIA OROZCO  
City Clerk

APPROVED AS TO FORM:

BY: \_\_\_\_\_  
MICHELLE SHEIDENBERGER  
City Attorney

APPROVED AS TO SUBSTANCE:

BY: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

## INSURANCE BROKER INFORMATION PACKET

Project: Zero Emissions Bus Depot

### NOTICE TO CONTRACTOR:

For your convenience, this package contains the Requirements for Insurance and Bonds for this project, including the necessary City forms. You are required to return these forms in addition to the executed Contract within fifteen (15) calendar days after the award of the Bid, unless otherwise directed by City in writing. (See the Instructions to Bidders.)

Please insert the dollar amount of your accepted Bid into the blank on page INS-1 and present this entire package to your insurance broker if you are awarded the Bid.

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Notice to Insurance Broker	INS 1
Insurance Requirements	INS 2
Public Works Faithful Performance Bond	INS 10
Public Works Payment Bond	INS 13

NOTICE TO INSURANCE BROKER

Your client has been awarded a bid by the City Council of the City of Roseville to perform a public works project known as \_\_\_\_\_.  
The Contract Conditions for that project require your client (“the Contractor”) to return certain evidence of insurance and bonds to the City Attorney of the City within fifteen (15) days after the Bid award, unless otherwise directed by the City in writing, or else the Bid award may be terminated and awarded to another company.

This package contains the information you will need as an insurance broker to provide the appropriate insurance and bonds to the City. The insurance coverages the Contractor needs are specified in the section entitled “Insurance Requirements.” Please note that, in addition to the insurance certificate itself, copies of several endorsements must be actually furnished.

Please refer to the Supplemental Conditions for modifications of the General Conditions, if any, and the requirements of this insurance packet.

Please use the standard City of Roseville Bond Forms provided in this package.

The Bonds required must each be in the penal amount of: \$ \_\_\_\_\_.

Bonds must be sent to the following staff person:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Insurance documents must be provided using one of the following methods:

- a. By email to [roseville@ebix.com](mailto:roseville@ebix.com) and [riskmanagement@roseville.ca.us](mailto:riskmanagement@roseville.ca.us)
- b. By fax to (770) 335-5727 and (916) 774-5461

After using one of these methods, please **DO NOT** send the insurance certificate(s) by mail.

When forwarding the documents, please refer to the project name so that the documents can be matched with the Contract for which they are submitted.

Thank you.

## INSURANCE REQUIREMENTS

The following sections are quoted from the General Conditions:

5-1.23        **INSURANCE COVERAGE.**

A.        Evidence of Maintenance Required. The Contractor shall, at its expense, procure and at all times maintain in full force and effect at a minimum the insurance required by this section on all of its operations; and the Contractor shall not allow any Subcontractor to commence work until similar insurance required of the Subcontractor has been obtained and filed. An original Certificate of Insurance, and copies of all required endorsements, all in a form approved by the Risk Manager, evidencing all required coverage or policies shall be filed after the award of the bid and prior to approval of the Contract by the City Council. Contractor shall provide ten (10) days prior written notice to the City of any reduction of coverage limits or cancellation of the coverage or policies shall be given to the City of Roseville as Certificate holder.

B.        Qualifying Insurers. With the exception of the State Compensation Insurance Fund, all required insurance policies shall be issued by companies acceptable to the City and licensed to do business in the State of California and who hold a current policy holders alphabetic and financial size category rating of not less than AVII according to the most recent issue of Best's Insurance Reports.

C.        Insurance Required.

1.        **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations with limits of no less than Two Million Dollars (\$2,000,000) per occurrence for bodily injury, personal injury and property damage for projects under One Million Dollars (\$1,000,000) and

limits of no less than Five Million Dollars (\$5,000,000) per occurrence for bodily injury, personal injury and property damage for projects over One Million Dollars (\$1,000,000). If a general aggregate limit applies, either the aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit.

The Commercial General Liability insurance shall include the following, copies of which shall be provided:

a. Inclusion of the City of Roseville, and its officers, agents, employees, and volunteers, as additional insureds (except for workers' compensation) as respects services or operations under the Contract. The additional insured endorsement for the general liability policy shall be at least as broad as the ISO CG 2010 10 01 combined with ISO CGL Endorsement CG 2037 10 01. Any other endorsement must be approved in writing by the City. Endorsements must include coverage for on-going and completed operations, which coverage shall be maintained for four (4) years following completion of the Project. Endorsements shall cover the City of Roseville, its officers, agents, employees, and volunteers.

b. The insurance shall provide coverage for claims by one insured against another insured and the policies shall not contain any cross-suits exclusions, cross-liability exclusions, or insured versus insured exclusions. The policies shall not contain any classification exclusions purporting to deny coverage for any work to be performed by Contractor or any of its Subcontractors.

c. Stipulation that the insurance is primary and noncontributory, as evidenced by a separate endorsement (CG 20 01 04 13 or an equivalent) or section of the policy, and that neither the City nor its insurers will be called upon to contribute to a loss.

d. Such insurance shall specifically cover the contractual liability of

the Contractor.

e. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

f. Waiver of subrogation endorsement.

g. The Contractor shall furnish a certificate for the period covered.

2. **Automobile Liability:** Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), or if Contractor has no owned autos, Code 8 (hired) and Code 9 (non-owned), with limits of no less than One Million Dollars (\$1,000,000) per accident for bodily injury and property damage.

3. **Workers' Compensation:** In accordance with the provisions of the California Labor Code, Contractor is required to be insured against liability for Workers' Compensation or to undertake self-insurance. Statutory Workers' Compensation and Employers' Liability of at least One Million Dollars (\$1,000,000) shall cover all Contractors staff while performing any work incidental to the performance of this Agreement.

4. **Professional Liability:** Professional Liability (Errors and Omission) Insurance appropriate to Contractor's profession, with a limit of liability not less than One Million Dollars (\$1,000,000) per occurrence or claim and Two Million Dollars (\$2,000,000) aggregate to cover all design and engineering services rendered by Contractor pursuant to the Agreement. Coverage must commence from the first day that Contractor or any of its Subcontractors provided any design or engineering services in connection with the Project.

5. **Builder's Risk/Course of Construction Insurance Is \_\_\_\_ OR Is Not**

**\_\_\_\_ Required by Risk Management:** The Contractor shall be responsible for all loss, damage or destruction whatsoever to the work called for by this Contract until the approval of a Notice of Completion or acceptance of the Work if no Notice of Completion is to be recorded.

The Contractor shall secure "All Risk" type of builder's Risk Insurance of the type covering one hundred percent (100%) of the value of the work performed under this Contract (the value is presumed to be the Contract amount unless otherwise stated in Supplemental Conditions) and all materials, equipment, or other items to be incorporated therein while the same are located at the construction site, a bonded warehouse, or its place of manufacture. At any time, the policy shall cover the value of the work completed. The policy shall cover hazards including the losses due to fire, explosion, hail, rain, lightning, flood (separate insurance as needed), vandalism, malicious mischief, wind, collapse, aircraft, and smoke.

The policies providing such insurance shall name the City as a loss payee as its respective interests may appear, and certified copies of such policies shall be filed with the City. The maximum deductible allowable under the Builder's All Risk policy shall be five percent (5%) of the Contract amount.

Builder's Risk Insurance is not required for coverage of losses in excess of five percent (5%) of the Contract amount for damages resulting from earthquake in excess of a magnitude of 3.5 on the Richter scale, or tidal waves. Coverage in the amount of five percent (5%) of the Contract amount for such losses is required.

6. **Pollution Coverage:** Contractor shall procure pollution liability coverage or other insurance covering claims for bodily injury or property damage arising out of the abatement, removal, storage, transportation, or other exposure to hazardous materials or

pollutants, in limits not less than Two Million Dollars (\$2,000,000). Contractor shall add the City and all parties required to be indemnified by Contractor as additional insured on all pollution liability policies.

7. **Higher Coverage Limits:** If Contractor maintains higher coverage limits than the amounts shown above, then the City requires and shall be entitled to coverage for the higher coverage limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

8. **Claims Made Coverage:** Liability insurance coverage may not be written on a “claims made” or modified occurrence basis. The Certificate of Insurance must clearly provide that the coverage is on an “occurrence” basis.

5-1.24 **OTHER INSURANCE PROVISIONS.**

A. The requirements of the Standard Specifications as to types and limits of insurance coverage to be maintained by the Contractor, and any approval of insurance by the City, are not intended to, and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to the Contract, including, but not limited to, the provisions concerning indemnification, nor preclude the City from taking any other action available to it under any other provision of the Contract or law.

B. The City acknowledges that some insurance requirements contained in these Standard Specifications may be fulfilled by self-insurance on the part of the Contractor. However, this shall not in any way limit liabilities assumed by Contractor under the Contract. Any self-insurance must be approved in writing by the City, in its sole discretion and shall not reduce the limits of liability. Any deductibles or self-insured retentions (“SIR”) must be declared on the certificate of insurance and approved by City in writing. Policies containing any

SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

C. The Contractor agrees to include in its contracts with all subcontractors the same requirements and provisions of this Contract, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor's work. Furthermore, the Contractor shall require its subcontractors to agree to be bound to the Contractor and the City in the same manner and to the same extent as the Contractor is bound to the City under this Contract. Additionally, the Contractor shall obligate its subcontractors to comply with these same provisions with respect to any tertiary subcontractor, regardless of tier. A copy of the City's indemnity and insurance provisions will be furnished to the subcontractor or tertiary subcontractor upon request. Alternatively, the Contractor may insure subcontractor(s) under its own policy.

D. The City, its officers, agents, employees, and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. Coverage shall 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 California Insurance Code Section 11580.04.

E. The limits of insurance required in this Contract may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be

endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of the City (if agreed to in a written contract) before the City's own insurance shall be called upon to protect it as a named insured.

F. The insurance procured by Contractor shall be subject to the approval of the City, but any acceptance of insurance certificates by the City shall in no way limit or relieve Contractor of its duties and responsibilities under the Agreement.

G. Contractor shall be responsible for all premiums, deductibles, and self-insured retention applicable to the insurance it is required to procure under the Contract. All deductibles or self-insured retentions over five hundred thousand dollars (\$500,000) must be approved by the City, in writing. Contractor shall be responsible for all deductibles, self-insured retention payments, and/or increased premiums incurred if the City's policies of insurance are forced to cover damages or respond to claims for which Contractor or its Subcontractors were obligated to provide insurance under the Contract.

H. Failure of the City to enforce in a timely manner any of the requirements of these insurance provisions shall not act as a waiver to enforcement of any of these provisions at a later date.

I. Contractor's indemnity obligations shall not be limited by these insurance provisions and shall survive the expiration of the Contract and the insurance provisions of the Contract shall likewise not be limited by the indemnity provisions of the Contract.

**J. THE CITY RESERVES THE RIGHT TO WITHHOLD ANY PROGRESS PAYMENTS TO THE CONTRACTOR IN THE EVENT OF NONCOMPLIANCE WITH ANY INSURANCE REQUIREMENTS.**

Bond No. \_\_\_\_\_  
Premium \$ \_\_\_\_\_

**PUBLIC WORKS  
FAITHFUL PERFORMANCE BOND**

(Project: \_\_\_\_\_)

WHEREAS, the City of Roseville ("CITY") has awarded a bid and contract to \_\_\_\_\_ as contractor ("PRINCIPAL") for the public work described as \_\_\_\_\_ (the "WORK"). The contract ("AGREEMENT"), for the public work described above, and all of its terms and conditions are incorporated by reference and made a part hereof; and

WHEREAS, the PRINCIPAL is required to furnish a bond in connection with the AGREEMENT guaranteeing its faithful performance; and

NOW, THEREFORE, we the undersigned PRINCIPAL and \_\_\_\_\_, a \_\_\_\_\_, admitted and duly authorized to transact business under the laws of the State of California, as SURETY ("SURETY"), are held and firmly bound unto the CITY or its successors and assigns in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_) (which amount is not less than 100% of the AGREEMENT price) to be paid to the CITY or its successors and assigns; and for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns jointly and severally, firmly by these presents.

The condition of this obligation is such that if the PRINCIPAL, or its heirs, executors, administrators, successors or assigns, shall abide by, and in all respects promptly and faithfully perform the covenants, conditions and provisions in said AGREEMENT and any alteration thereof made as therein provided, notice of which alterations to Surety being hereby waived, on its part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless CITY, its officers, agents, employees, volunteers as therein stipulated, then this obligation shall be null and void; otherwise, this obligation shall be and remain in full force and effect.

As condition precedent to the satisfactory completion of the contract, the obligation of the PRINCIPAL and SURETY under this Bond shall remain in effect for a period of one (1) year after the completion and acceptance of the WORK. During that time, if the PRINCIPAL, its heirs, executors, administrators, successors or assigns fails to make full, complete and satisfactory repair and replacement or totally protect the CITY from any loss or damage made evident during that year which results from or is caused by either defective materials or faulty workmanship in the prosecution of the WORK, then the obligation shall remain in full force and effect. However, anything in

this paragraph to the contrary notwithstanding, the obligation of the SURETY shall continue so long as any obligation of the PRINCIPAL remains.

No prepayment or delay in payments, and no change, extension, addition or alteration of any provision of the AGREEMENT or in the specifications agreed to between the PRINCIPAL and the CITY, or any forbearance on the part of the CITY shall operate to relieve the SURETY. The SURETY hereby waives the provisions of Section 2819 of the California Civil Code. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. If the contract price increases by the issuance of change orders, the amount specified in this bond shall increase by the same amount.

Whenever PRINCIPAL shall be and declared by CITY to be in default under the AGREEMENT, SURETY shall promptly remedy the default, or shall promptly do one of the follow at CITY's election:

1. Undertake through its agents or independent contractors, reasonably acceptable to CITY, to complete the AGREEMENT in accordance with its terms and conditions and to pay and perform all obligations of PRINCIPAL under the AGREEMENT, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages.
2. Reimburse CITY for all costs CITY incurs in completing the AGREEMENT, and in correcting, repairing or replacing defects in materials or workmanship and/or materials and workmanship which do not conform to the specifications in the AGREEMENT.

SURETY's obligations hereunder are independent of the obligations of any other surety for the performance of the AGREEMENT, and suit may be brought against SURETY and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing CITY's rights against the others.

No right of action shall accrue on this bond to or for the use of any person or corporation other than CITY or its successors or assigns.

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

[SIGNATURES NEXT PAGE]

IN WITNESS WHEREOF, this instrument has been duly executed by the PRINCIPAL and SURETY above-named, on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

PRINCIPAL:

SURETY:

BY: \_\_\_\_\_

BY: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

AND

MAILING ADDRESS:

BY: \_\_\_\_\_

\_\_\_\_\_

PRINT NAME: \_\_\_\_\_

\_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

\_\_\_\_\_

*(Notarization by Surety and copy of Power of Attorney required.)*

APPROVED AS TO FORM:

BY: \_\_\_\_\_  
City Attorney

Bond No. \_\_\_\_\_  
Premium \$ \_\_\_\_\_

**PUBLIC WORKS  
LABOR AND MATERIALS PAYMENT BOND**

(Project: \_\_\_\_\_)

WHEREAS, the City of Roseville ("CITY"), has awarded a bid and contract to \_\_\_\_\_ as contractor ("PRINCIPAL"), for the public work described as \_\_\_\_\_ (the "WORK"). The contract ("AGREEMENT"), for the public work described above, and all of its terms and conditions are incorporated by reference and made a part hereof; and

WHEREAS, the PRINCIPAL is required to furnish a bond in connection with the AGREEMENT guaranteeing payment of persons who provide labor and material; and

NOW, THEREFORE, we the undersigned PRINCIPAL and \_\_\_\_\_, a \_\_\_\_\_, admitted and duly authorized to transact business under the laws of the State of California, as SURETY ("SURETY"), are held and firmly bound unto the CITY or its successors and assigns in the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_) (which amount is not less than 100% of the AGREEMENT price) to be paid to the CITY or its successors and assigns; and for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns jointly and severally, firmly by these presents.

The condition of the obligation is such that if the PRINCIPAL, its subcontractors, heirs, executors, administrators, successors or assigns fails to pay any of the persons named in Section 8004 or 9100 of the Civil Code of the State of California, or the amounts due under the Unemployment Insurance Code of the State of California, or any amounts required to be deducted, withheld and paid over to the Employment Development Department from the wages of employees of the PRINCIPAL and its subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to work or labor performed by any such claimant, that the SURETY will pay for the same, in an amount not exceeding the sum specified in this bond, and also, in case suit is brought upon the bond, shall pay reasonable attorneys' fees, to be fixed by the Court.

This bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file a Stop Payment Notice pursuant to the provisions of Section 9350 et seq. of the Civil Code of the State of California, so as to give a right of action to them or their assigns in any suit brought upon this bond.

No prepayment or delay in payments, and no change, extension, addition or alteration of any provision of the AGREEMENT or in the specifications agreed to between the PRINCIPAL and the CITY, or any forbearance on the part of the CITY shall operate to relieve the SURETY. The SURETY hereby waives the provisions of Section 2819 of the California Civil Code. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. If the contract price increases by the issuance of change orders, the amount specified in this bond shall increase by the same amount.

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

IN WITNESS WHEREOF, this instrument has been duly executed by the PRINCIPAL and SURETY above-named, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

PRINCIPAL:

SURETY:

BY: \_\_\_\_\_

BY: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

AND

MAILING ADDRESS:

BY: \_\_\_\_\_

\_\_\_\_\_

PRINT NAME: \_\_\_\_\_

\_\_\_\_\_

PRINT TITLE: \_\_\_\_\_

\_\_\_\_\_

*(Notarization by Surety and copy of Power of Attorney required.)*

APPROVED AS TO FORM:

BY: \_\_\_\_\_  
City Attorney

**CITY OF ROSEVILLE**

**GENERAL CONDITIONS**

**FOR**

**BUILDINGS AND GROUNDS**

GC

**CITY OF ROSEVILLE  
GENERAL CONDITIONS  
FOR  
BUILDINGS AND GROUNDS**

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**SECTION 1**  
**DEFINITIONS AND TERMS**

1-1.01        **GENERAL.** When the following abbreviations and terms or pronouns in place of them appear in the Contract Documents, the intent and meaning shall be interpreted as provided in this Section 1.

1-1.02        **ACCEPTANCE.** Formal Acceptance by resolution by the Roseville City Council of the Contract when completed in all respects in accordance with the Contract Documents and any modifications previously approved.

1-1.03        **ADDENDUM.** Written interpretation or revision to any of the Contract Documents issued by the City before the bid opening.

1-1.04        **AS-BUILT DOCUMENTS, AS-BUILT DRAWINGS AND RECORD DOCUMENTS.** As-Built Documents, As-Built Drawings and Record Documents are all contract documents modified to reflect changes during the construction phase. Specifically, As-Built Documents/Drawings are a revised set of drawings submitted by the Contractor upon Final Completion of a project. They reflect changes made in the Specifications and Working Drawings during the construction process, and show the exact dimensions, geometry, and location of all elements of the work completed under the Contract. Record Documents, on the other hand, are compiled by the Engineer or Architect based on the As-Built Documents/Drawings submitted by the Contractor. They reflect the Engineer or Architect's concurring review of what changes were denoted, why they were made and where they occurred and create a record set of drawings.

1-1.05        **ASSESSMENT.** A cost imposed on the Contractor for non-compliance

with certain contractual requirements.

1-1.06            **BENEFICIAL OCCUPANCY.** The taking possession of a portion of the Work by the City for its use and/or occupancy on other than a temporary or emergency basis.

1-1.07            **BID GUARANTY.** The cashier's, certified check, irrevocable standby letter of credit, deposit of securities, or Bidder's Bond, accompanying the bid submitted by the Bidder, as a guaranty that the Bidder will enter into an agreement with the City for the performance of the Work, if the Agreement is awarded to Bidder, and the Bidder will submit the required Contract Bonds and Certificate of Insurance. Also referred to as the Bidder's Security.

1-1.08            **BIDDER.** Individual, firm, partnership, limited liability company, corporation, joint venture, or any combination thereof, submitting a Proposal for the Work, acting directly, or through a duly authorized representative.

1-1.09            **BIDDING DOCUMENTS.** Includes the Notice to Bidders, Bidding Requirements, Contract Conditions, Drawings, and Addenda.

1-1.10            **CHANGE ORDER.** Any written order to the Contractor directing an addition, deletion, or modification of the Work, or an adjustment in the Contract Price or Contract Time provided in the Contract Documents and issued after the Agreement has been signed.

1-1.11            **CITY.** The City of Roseville.

1-1.12            **CITY ATTORNEY.** The City Attorney of the City.

1-1.13            **CITY CLERK.** The City Clerk of the City.

1-1.14            **CLAIM.** A separate demand by Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following: (a) a time extension, including, without limitation, for relief for damages or penalties for delay assessed by

the City; (b) payment by the City of money or damages arising from work done by, or on behalf of, Contractor pursuant to the Contract Documents and payment for which is not otherwise expressly provided or to which Contractor is not otherwise entitled; and (c) payment of an amount that is disputed by the City.

1-1.15            **CONSTRUCTION SCHEDULE.** A list or graphic display of construction activities required for completing the Work, in a format required by the Contract Documents. The duration, start and finish date, and sequence of significant activities, critical path, float and milestones must be indicated in the Construction Schedule.

1-1.16            **CONTRACT OR AGREEMENT.** The written agreement relating to the Work to be performed, the labor, materials, and equipment to be furnished, and the payment to be made therefor. The Agreement/Contract is part of and incorporates all of the Contract Documents.

1-1.17            **CONTRACT CONDITIONS.** Includes the General Conditions, Supplemental Conditions, and Specifications.

1-1.18            **CONTRACT DOCUMENTS.** Includes those documents that form the basis of the Contract, including but not limited to, Bidding Documents, the Bid or Proposal, Contract Bonds, the Contract, all required insurance certificates or endorsements, all bonds, all required certifications or statements, Change Orders, any Contract Amendment, any City Standard which is incorporated by reference and these City of Roseville General Conditions for Buildings and Grounds.

1-1.19            **CONTRACT DRAWINGS.** The official drawings including plans, elevations, sections, detail drawings, diagrams, plated, General Notes, information and schedules thereon, or exact reproductions thereof, showing the location, character, dimension, and details

of the Work. The Contract Drawings include any drawings or plates bound within the Supplemental Conditions.

1-1.20        **CONTRACT PRICE.** The total compensation to be paid to the Contractor in accordance with the terms of the Agreement.

1-1.21        **CONTRACT TIME.** The number of Days, or portion thereof, allowed for completion of the Work, including all authorized time extensions. The effective date for commencement of the Work specified in the Notice to Proceed shall define the beginning of the Contract Time.

1-1.22        **CONTRACTOR.** Individual, firm, partnership, limited liability company, corporation, joint venture, or any combination thereof, who has entered into the Agreement with City.

1-1.23        **DAY OR DAYS.** Unless otherwise designated, Day or Days as used in the Contract Documents will be understood to mean calendar Day or Days.

1-1.24        **DEPARTMENT.** The Department for Contract Administration, as identified in the Supplemental Conditions.

1-1.25        **DIRECT COSTS.** Those cost items (including labor, materials, equipment and any subcontractor's work) that are used in the actual performance of, and are specifically and uniquely attributable to the Work or changed Work. Direct Costs do not include Overhead. Direct Costs only include the following:

A.        Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by City and Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include salaries and

wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. Such employees may include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Saturday, Sunday or legal holidays shall be included in the above only to the extent authorized by City in writing.

B. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and suppliers' field services required in connection therewith. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to City, and Contractor shall make provisions so that they may be obtained.

C. Payments made by Contractor to the subcontractors for work performed by subcontractors. If required by City, Contractor shall obtain competitive bids from subcontractors acceptable to Contractor and shall deliver such bids to City who will then determine which bids will be accepted. If a subcontract provides that the subcontractor is to be paid on the basis of cost of the work plus a fee, the subcontractor's cost of the work shall be determined in the same manner as Contractor's cost of the work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

D. Costs of special consultants (including engineers, architects, testing laboratories, surveyors, and accountants) employed for services specifically, and only, related to the Work.

E. Supplemental costs including the following:

1. The proportion of necessary transportation, travel and subsistence

expenses of Contractor's employees incurred in discharge of duties connected with the Work.

2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value of such items used but not consumed which remain the property of Contractor.

3. Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by City, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof, all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

4. Sales, consumer, use or similar taxes related to the Work, and for which Contractor is liable, imposed by laws and regulations.

5. The cost of utilities (including the meter and all associated installation costs), fuel and sanitary facilities at the site.

6. Cost of premiums for additional bonds and insurance required because of changes in the Work.

1-1-26 **DIRECTOR.** Director of the Department for Contract Administration or his or her designee.

1-1.27 **EMERGENCY.** Any sudden generally unforeseen occurrence (such as a fire, flood, storm, earthquake, civil disorder, or other natural and/or man-made disaster) that has the potential to adversely affect the safety of life, the Work, and/or adjacent property; to interrupt contracts essential to the performance of the Work; and/or to cause catastrophic failure of City

equipment and/or facilities.

1-1.28        **ENGINEER OR ARCHITECT.** Professional Engineer or Architect designated for a particular project responsible for signing and sealing the permit drawings, interpretation of the drawings where ambiguities exist, review of requests for information, design Change requests and Shop Drawings, resolution of errors and omissions, and finalization of Record Documents.

1-1.29        **FINAL COMPLETION.** When the project has been completed according to the terms and conditions set forth in the Contract Documents. Final Completion is not the same as Acceptance.

1-1.30        **FORCE ACCOUNT.** Payment by force account shall mean payment on the basis of the Contractor's time and materials.

1-1.31        **GENERAL NOTES.** The written instructions, provisions, conditions or other requirements appearing on the Contract Drawings and so identified thereon, which pertain to the performance of the Work.

1-1.32        **INSTALLATION, INSTALL.** Completely assembling, erecting, and/or connecting materials, parts, components, supplies, and related equipment specified or required for the completion of the Work.

1-1.33        **LABORATORY.** Established professional laboratories authorized by the City to test materials and Work involved in the Contract.

1-1.34        **LEGAL HOLIDAYS.** Those days designated as Federal holidays or declared by the City, or otherwise specified in the Contract Documents.

1-1.35        **LIQUIDATED DAMAGES.** The amount prescribed in the Contract Documents to be paid to the City or to be deducted from any payments due or to become due the

Contractor for each day's delay in completing the whole or any specified portion of the Work beyond the time allowed in the Supplemental Conditions.

1-1.36        **NOTICE OF COMPLETION.** A legal notice filed by the City with the Placer County Recorder's Office stating that construction has been completed and accepted by the City.

1-1.37        **NOTICE TO PROCEED.** A written notice given by the City to the Contractor fixing the date on which the Contract Time will commence to run.

1-1.38        **NOTICE OF TERMINATION.** Written notice from the City to the Contractor and/or its Surety terminating the Agreement, or a portion thereof, either for convenience of the City or for default due to the Contractor's failure to perform its contractual obligations.

1-1.39        **OVERHEAD.** Business or administrative expenses (including but not limited to office expenses, administrative staff, rent, insurance, utilities) not chargeable to a particular part of the Work. The term "Overhead" shall include all of the following:

A.        Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor whether at the Work Site or in Contractor's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications, all of which are to be considered administrative costs covered by the Contractor's fee.

B.        Expenses of Contractor's principal and branch offices other than Contractor's office at the site.

C. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

D. Cost of premiums for all bonds and for all insurance whether or not Contractor is required by the Contract Documents to purchase and maintain the same, except as provided in section 1-1.25.

E. Other overhead or general expense costs of any kind.

1-1.40 **PREMISES.** Shall mean the area within construction easements, easements, rights of entry and City owned property which surrounds the Work Site, limited by the property lines thereof. In some cases Premises may coincide with the Work Site.

1-1.41 **PROFESSIONAL ENGINEER.** An engineer licensed by the Board of Registration for Professional Engineers, State of California.

1-1.42 **PROJECT MANUAL.** A book containing all Contract Documents.

1-1.43 **PROPOSAL FORMS.** The approved forms upon which the City requires that each Bidder submit its bid with regard to the Agreement.

1-1.44 **REQUEST FOR INFORMATION (RFI).** A document issued by the Contractor requesting information concerning the Contract Documents.

1-1.45 **SAFETY.** Includes the practice of identifying potential hazards, assessing their risk, taking corrective action where possible, including and providing control measures such as engineering design, written procedures, and the personal protective equipment for workers in order to eliminate or reduce the risk for exposure in the workplace.

1-1.46 **SCHEDULE OF VALUES.** The breakdown of the Contract Price that will serve as the basis for Contractor's Applications of Payment. Any lump sum bid item

included within the Contract Price will be apportioned among values relating to specific components of the Work covered by said lump sum.

1-1.47        **SHOP DRAWINGS.** Drawings, plans, diagrams, schedules, and other data specifically prepared and submitted to the City by the Contractor, showing in detail: (a) the proposed fabrication and assembly of a special component of the Work; and (b) the Installation (form, fit and attachment details) of a special component of the Work. Shop Drawings shall be deemed to include Working Drawings, Product Data, literature, and applicable performance and test data.

1-1.48        **SPECIFICATIONS.** The technical Specifications for the Work prepared by the Director or an Engineer or Architect describing in detail the nature of the Work, its components, any performance standards, and how the Work is to be constructed.

1-1.49        **SUBCONTRACTOR.** Any individual, firm, partnership, limited liability company, corporation, joint venture, or combination thereof, other than employees of the Contractor, engaged by the Contractor to furnish services, labor, equipment and materials for a portion of the Work.

1-1.50        **SUBMITTALS.** Those documents required to be submitted by the Contractor for review by the City in accordance with the Contract Documents.

1-1.51        **SUPPLEMENTAL CONDITIONS.** The Supplemental Conditions are specific clauses modifying or supplementing these General Conditions.

1-1.52        **SUPPLIER.** Any individual, firm, partnership, limited liability company, corporation, joint venture, or combination thereof, other than employees of the Contractor, that supplies a tangible product as a portion of the Work, with services usually limited to delivery and/or required testing, and with manufacturing, fabrication, or production facilities located off

the Work Site.

1-1.53        **WORK.** The furnishing of all labor, and the furnishing and Installing of all materials, articles, supplies and equipment as specified, designated, or required by the Contract Documents.

1-1.54        **WORK SITE.** All or portion of the Premises that the Work is limited to as shown on the Contract Drawings or designated by the Director. Public streets are not included unless Work is being done within the street right-of-way.

1-1.55        **WORKING DRAWINGS.** Original drawings prepared by the Contractor and/or its Subcontractors or Suppliers, of any tier, illustrating Work required for construction that will not become an integral part of the completed Work. This includes, but is not limited to, drawings for temporary structures such as decking, bulkheads, excavation supports, utility support, groundwater control, forming, falsework, access roads, staging areas, staging plans, and diversion plans. A Working Drawing is one type of a Shop Drawing.

## SECTION 2

### CONTROL AND SCOPE OF THE WORK

2-1.01        **AUTHORITY OF DIRECTOR.** The Contract shall be performed in a manner satisfactory to the Director who shall 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; all questions which may arise as to the interpretation of the Contract Documents; all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and all questions as to compensation. The Director shall have authority to enforce and make effective such decisions and orders in the event the Contractor fails to promptly carry out the same.

2-1.02        **INTENT OF CONTRACT DOCUMENTS.** The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Contract Documents is to describe the details for the construction and completion of the Work. Where the Contract Documents describe portions of the Work in general terms, but not in complete detail, it is understood that only the best general practice shall be followed and that only materials and workmanship of the best quality are to be used. Any Work, materials, or equipment that are customarily provided, or that are reasonably inferable from the Contract Documents as being required to produce the intended result, shall be supplied, whether or not specifically called for. When words, which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and do all the Work involved in executing the Contract in a

satisfactory and workmanlike manner.

Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws, or regulations in effect on the first published date of the Notice to Contractors, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of City or Contractor, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to City, or City's designated representative, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to other provisions of the Contract Documents.

The Contract Documents are divided into parts, divisions, sections and articles for convenience, organization and reference. Generally, there has been no attempt to divide the Specifications sections into work performed by the various building trades, work by separate Subcontractors, or work required for separate facilities in the project.

2-1.03            **EXAMINATION AND VERIFICATION OF CONTRACT**

**DOCUMENTS.** The Contractor shall thoroughly examine and become familiar with all of the various parts of the Contract Documents and shall determine the nature and location of the Work, the general and local conditions (including applicable laws) and all other matters which can in any way affect the cost, progress or performance of the Work under this Agreement. Failure to make an examination necessary for this determination shall not release the Contractor from the obligations of the Agreement. No oral agreement or conversation with any officer, or employee

of the City, or with the City's designated representative either before or after the execution of the Agreement, shall affect or modify any of the terms or obligations contained in the Contract Documents.

2-1.04            **CONTRACT DRAWINGS.** The Contract Drawings consist of general drawings and show such plans, elevations, sections, details and schedules as are necessary to give a graphic and pictorial description of the contemplated construction. All authorized alterations affecting the requirements and information given on the Contract Drawings shall be in writing.

2-1.05            **COORDINATION AND INTERPRETATION OF CONTRACT DOCUMENTS.** All Contract Documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary, and to describe and provide for a complete Work.

In the event of inconsistencies between requirements contained in different components of the Contract Documents, the precedence of the Contract Documents shall be as follows to resolve conflicts:

1.     Change Orders
2.     The Contract (including Addenda)
3.     The Supplemental Conditions
4.     Specifications
5.     Contract Drawings
6.     The General Conditions

Should it appear that the Work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall submit a

Request for Information (“RFI”) to the Director for such further explanations as may be necessary and shall conform to the written explanation given as if part of the Contract Documents. The decisions of the Director shall be final.

Contractor shall anticipate that it will be necessary to prepare and submit RFIs regarding the Contract Documents. The City will respond to each RFI by no later than fourteen (14) Days after receipt of the RFI, unless the RFI is of significant complexity. Furthermore, in the event that there are numerous RFIs pending, Contractor shall cooperate with the City in establishing a priority for responding to the RFIs, and potentially some RFIs may be responded to beyond the fourteen (14) Day period.

Each RFI prepared by Contractor shall be full and complete. Contractor shall prepare RFIs so as to not cause any delay to the progress of the Work and to not cause any impact to Contractor’s labor productivity in the field. Contractor shall not assert any Claims for delay or interference against the City if Contractor fails to timely submit any RFI to the City, after consideration of the response period allowed for by the City.

The response to an RFI shall not, by itself, constitute a writing that authorizes Contractor to perform any Work that causes an adjustment to either the Contract Price or the Contract Time. If Contractor believes that any response to any RFI should constitute a compensable change, Contractor shall provide a Notice of Potential Claim as provided in Section 7-1.03, below. Contractor’s failure to provide the required written notice shall constitute a waiver of the Contractor’s right to seek a compensable change based on the RFI response.

The Contractor shall examine all Contract Documents; shall verify all figures in the Contract Documents before laying out the Work; shall promptly notify the City of all errors, inconsistencies, and/or omissions that it discovers; and, in instances where such non-

conformities are discovered, shall obtain specific instructions in writing from the City before proceeding with the Work. Contractor's performance of any Work affected by such non-conformities prior to the City's decision shall be at the Contractor's risk. Any Work that is customarily provided or that is reasonably inferable shall not relieve the Contractor from performing such work at no additional expense and/or delay, and such Work shall be performed as if fully set forth in the Contract Documents.

2-1.06            **INDEPENDENT CONTRACTOR STATUS.** The Contractor shall independently perform all Work required by the Contract Documents and shall not be considered as an agent or employee of the City, nor shall the Contractor's Subcontractors or employees be considered as subagents of the City.

The Contractor and Contractor's Subcontractors shall be licensed in accordance with the laws of the State of California and as more particularly described in the bidding documents or elsewhere in the Contract Documents.

2-1.07            **ORDER OF WORK.** When required by the Contract Documents, the Contractor shall follow the sequence of operations set forth therein. Full compensation for conforming to such requirements will be considered as included in the prices paid for the various Contract items of work, and no additional compensation will be allowed therefor.

2-1.08            **SUBMITTALS.** It shall be the Contractor's responsibility to timely submit, so as to cause no delay in the Work, all Shop Drawings, descriptive data, manuals, instructions, affidavits, samples for the various trades as required by the Supplemental Conditions and Specifications, and offers of alternatives, if any. Such Submittals shall be checked and coordinated by the Contractor with the Work of other trades involved before they are submitted to the Director for examination.

The Contractor shall deliver at least one (1) electronic copy of the Submittals to the Director, and one (1) hard copy if requested. Work requiring the submittal of working drawings, descriptive data or samples shall not begin prior to approval of said Submittal by the Director.

The time allowed for review of each Submittal will be as indicated in the Supplemental Conditions. Review time will start upon receipt of the Submittal by the Director and will end upon the Director's mailing of the Submittals to the Contractor. Defective, incomplete or partial Submittals will be returned to the Contractor unreviewed.

Submittals shall be made by a letter of transmittal that shall contain a list of all matter submitted and identification of all variations from the Contract Documents contained in the Submittal. The letter and all items accompanying the same shall be fully identified as to project name and location, Contractor's name, district, county, and Contract number, with ample cross-references to the Contract Documents, to facilitate identification of items and their location in the Work.

All Shop Drawings and supporting data, catalogs, schedules, shall be submitted as the instruments of the Contractor, who shall be responsible for their accuracy and completeness. These Submittals may be prepared by the Contractor, Subcontractors, or Suppliers, but the Contractor shall ascertain that Submittals meet all of the requirements of the Contract Documents, while conforming to structural, space, and access conditions at the point of Installation. The Contractor shall check all Submittals before submitting them to the Director.

2-1.08A      **SHOP DRAWINGS.** The Contractor shall submit an electronic copy (searchable PDF) of all Shop Drawings required by the Supplemental Conditions or Specifications, and one (1) hard copy, if requested by the Director. Shop Drawings shall also be provided separately in AutoCAD format using the latest version of AutoCAD. An electronic

copy will be returned to the Contractor either approved for use, as demonstrated by a stamp, or returned for correction and resubmittal. Materials, colors and/or samples will not be returned to the Contractor. Shop Drawings include any drawing, which requires execution by a draftsman as distinguished from printed matter. The size of Shop Drawings shall not exceed twenty-four inches (24”) by thirty-six inches (36”).

2-1.08B        **DESCRIPTIVE DATA.** The Contractor shall submit an electronic copy (searchable PDF) of each set of manufacturer's brochures or other data required by the Supplemental Conditions or Specifications, and one (1) hard copy, if requested by the Director. The City will examine such Submittals and return either an electronic copy or a hard copy approved for use or returned for correction and resubmittal.

2-1.08C        **SAMPLES.** The Contractor shall submit samples of articles, materials or equipment as required by the Supplemental Conditions or Specifications. The Work shall be in accordance with the approved samples. Samples shall be removed from City property when directed or may be incorporated in the Work if approved by the Director. Samples not removed by the Contractor will become the property of the City or, at the City's option, will be removed or disposed of by the City at the Contractor's expense.

2-1.08D        **MANUALS, INSTRUCTIONS AND AFFIDAVIT.**

A.        **Manuals and Instructions.** Where operation and maintenance manuals are required by the Supplemental Conditions, the Contractor shall submit two (2) sets of manuals, suitably bound, along with two (2) electronic copies in an approved format, to the Director within forty-five (45) Days after favorable review of the equipment or facilities. If operation and maintenance manuals are approved to be provided in PDF format, text shall be provided in searchable PDF format, making proper use of PDF for headings and heading levels,

paragraphs, tables, and lists. Submitted operation and maintenance manuals shall be a collected, organized, and indexed set of bookmarked PDF documents comprising each operation and maintenance manual that corresponds to a hardcopy binder. All manuals shall be marked to indicate the specific equipment furnished for this project and shall include at a minimum:

1. Equipment summary form
2. Cover/Title page
3. Table of contents
4. Operating procedures including start-up, shutdown, normal operation, all operating modes, emergency shutdown, and safety precautions
5. Lubrication instructions (if required)
6. Preventative maintenance procedures
7. Troubleshooting and corrective maintenance procedures
8. Reinstallation instructions
9. Overhaul instructions (if applicable)
10. Parts identification list with exploded view and associated cross references
11. Recommended spare parts list
12. Operator safety requirements
13. Electrical and control system wiring drawings, including panel wiring control (ladder) diagrams, logic diagrams, loop diagrams, and interconnection diagrams
14. Panel layout and assembly drawings

15. Mechanical drawings
16. Printouts of all software programs and configuration files
17. Factory and field test procedures and results

Operation and maintenance manuals for complex equipment shall also include:

18. Alternate specified operating modes
19. Emergency shutdown instructions
20. Normal shutdown instructions
21. Long term shutdown instructions

Operation and maintenance manuals for systems comprised of separate pieces of equipment shall include a system explanation of items 4, 7, 18, 19, 20, and 21 as well as the instructions for the separate pieces of equipment.

B. Affidavits. Where required in the Supplemental Conditions or Specifications, manufacturers of equipment shall provide field service as a part of this project. Equipment shall not be considered ready for full time operation until after the authorized factory-trained and qualified manufacturer's representative for the specific equipment has checked and adjusted the equipment and certified by written affidavit that the equipment has been properly installed, tested, adjusted, lubricated, and calibrated, and is ready for full time operation. Acceptable affidavits shall be submitted prior to completion of the Work. Affidavits shall contain the following specific wording:

“The (Name of Equipment) has been properly installed, tested, adjusted, lubricated, and calibrated, and is ready for full time operation. The installation has been inspected and has been found to be in conformance with our (the manufacturer's) standards and requirements.”

No amplification, dilution, or modification of this specific wording will be permitted.

2-1.08E **ALTERNATIVES.** For convenience in designation in the Contract Documents, certain materials, articles, or equipment may be designated by a brand or a trade name or the name of the manufacturer together with catalog designation or other identifying information, hereinafter referred to generically as “designated by brand name.” Except in those instances where the product is designated to match others in use in a particular improvement, either completed or in the course of completion, an alternative material, article, or equipment which is of equal quality and of the required characteristics for the purpose intended may be proposed for use provided the Contractor complies with the following requirements:

A. The Contractor shall submit its proposal for an alternative in writing. Such request shall be made in ample time to permit review and approval without delaying the Work. The Contractor shall not be entitled to an adjustment of the Contract Time or an increase in the Contract Price based on any Contractor-proposed substitution.

B. No such proposal will be considered unless accompanied by complete information and descriptive data, necessary to determine the equality of the offered materials. The Contractor shall satisfy the Director as to the comparative quality, suitability, or performance of the offered material, articles, or equipment. In the event that the Director rejects the use of such alternative materials, articles, or equipment, then one of the particular products designated by brand name shall be furnished.

C. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor and it shall furnish all information necessary as required by the Director. The Director shall be the sole judge as to the quality and suitability of alternative articles or materials and such decisions shall be final. Where use of an alternative material

involves redesign of, or changes to, other parts of the Work, the cost and time required to effect such redesign or changes will be considered in evaluating the suitability of the alternative material. Cost of redesign by the City will be borne by the Contractor.

D. Whenever classification, rating or other certification by a body such as Underwriters Laboratories (UL) or the National Electrical Manufacturers Association (NEMA) is a part of the specification for any material, Contractor's request for use of alternative articles or materials shall be accompanied by reports from the listed or equivalent independent testing Laboratory indicating compliance with the Contract Documents. The cost of all testing required to prove equality of the material proposed shall be borne by the Contractor. Approval of an alternative shall be only for the characteristics or use named in such approval, and shall not be used to change or modify any requirement of the Contract Documents.

E. At its election, the City reserves the right to consider any Contractor proposed substitution as a Cost Reduction Proposal under Section 3-1.07 of these General Conditions in the event that there is a significant savings resulting from the substitution.

The Director will examine, with reasonable promptness, such Submittals, and return of Submittals to the Contractor shall not relieve the Contractor from responsibility for deviations and alternatives from the Contract Documents, nor shall it relieve the Contractor from responsibility for errors in the Submittals. A failure by the Contractor to identify in its letter of transmittal material deviations from the Contract Documents shall void the Submittal and any action taken thereon by the Director. When specifically requested by the Director, the Contractor shall resubmit such Shop Drawings, descriptive data and samples as may be required.

If any mechanical, electrical, structural, or other changes are required for the proper Installation and fit of alternative materials, articles, or equipment, or because of deviations from

the Contract, such changes shall not be made without the approval of the Director and shall be made without additional cost to the City.

2-1.09            **DISPOSAL OF MATERIAL OUTSIDE THE WORK SITE.** Unless otherwise stated elsewhere in the Contract Documents, the Contractor shall, at its own cost and expense, make its own arrangements for disposing of materials outside the Work Site.

Except when material is to be disposed of at a landfill or recycling center, when any material is to be disposed of outside the Work Site, the Contractor shall first obtain written permission from the City to dispose of the material at the intended location. The City's approval will be contingent upon the Contractor obtaining a written permit from the property owner on whose property the disposal is to be made. Prior to the disposal of any material at the intended location, the Contractor shall submit such permit or a certified copy thereof to the City, together with a written release from the property owner absolving the City from any and all responsibility related to the disposal of material on said property.

Disposal of Hazardous Materials must be done in accordance with all laws and regulations. Copies of all required regulatory documentation including copies of final manifests shall be supplied to the City.

2-1.10            **ACCESS TO THE WORK.** The Contractor shall satisfy itself that the jurisdictions through which its operations and haul routes pass will permit such operations with respect to the type of vehicle, laden weights, frequency and dimensions of loads, hours of operation and required traffic control. All necessary permits, licenses or bonds shall be obtained and paid for by the Contractor.

2-1.11            **TEMPORARY UTILITIES.** The Contractor shall make its own arrangements with utility companies for any temporary services it may require in performance of

the Work and shall pay all costs of these services directly to these utility organizations.

2-1.12            **UTILITY FACILITIES.** The Contractor shall protect from damage those utility facilities that are to remain in place, be Installed, relocated or otherwise arranged.

The Contractor's attention is directed to the possible existence of facilities not shown, and of facilities in a location different from that, which is indicated. The Contractor shall take steps to ascertain the exact location of all facilities prior to doing any Work, which may damage such facilities or interfere with their service. Where the location of a facility is indicated or inferred from the presence of visible facilities such as buildings, meters, and junction boxes, the Contractor shall make such excavations and explorations as are necessary to ascertain the correct location. Unless provided for elsewhere in the Contract Documents, the cost of such excavations and explorations will be considered as a part of the cost of other items of Work and no additional payment will be made. Such excavations and exploratory Work shall not entitle the Contractor to an extension of time.

If the Contractor discovers underground facilities not indicated or inferred from the Contract Documents, the Contractor shall immediately give the Director written notification of the existence of those facilities. The Contractor shall determine the exact location of the underground facilities and the cost of the work will be paid for in accordance with the Contract Documents. The underground facilities shall be protected from damage as directed by the Director and the cost of that work will be paid for as extra work. The Contractor shall, if directed by the Director, repair any damage, which may occur to the underground facilities. The cost of that repair work, not due to the failure of the Contractor to exercise reasonable care, will be paid for as extra work. Damage due to the Contractor's failure to exercise reasonable care shall be repaired at the Contractor's cost and expense.

Where it is determined by the City that the rearrangement of an underground facility, the existence of which is not shown on the Contract Drawings, is essential in order to accommodate the Work, the City will provide for the rearrangement of such facility by other forces or, when so ordered by Change Order, such rearrangement shall be performed by the Contractor and will be paid for as provided under a Change Order.

The Contractor shall be responsible for the maintenance of all utility facilities placed by the Contractor in temporary locations, and all utilities within the construction area not required to be relocated but which are required to be shored or supported during the construction period. The cost of such maintenance shall be borne by the Contractor, and no other compensation shall be due the Contractor for this Work.

The cost of providing and maintaining all necessary or required temporary structures, of making any necessary repairs, replacements, or similar operations, or furnishing indemnity or other bonds, if required, and all costs required by this Section shall be paid by the Contractor and shall be included in the prices bid in the schedule for other items of work.

2-1.13            **PRESERVATION AND CLEANING.** The Contractor shall clean up the Work at frequent intervals and at other times when directed by the Director. While finish Work is being accomplished, floors, Work areas and finished areas shall be kept clean, free of dust, construction debris and trash. Upon completion of the Work, the Contractor shall remove from the Premises its construction equipment and any waste materials not previously disposed of, leaving the Premises thoroughly clean and ready for final inspection.

2-1.14            **LIMITATIONS ON WORK SITE AND PREMISES.** The Contractor shall limit its construction operations to the Work Site unless otherwise shown on the Contract Drawings or specified. The Contractor shall perform no operation of any nature over or on the

Premises except such operations as are authorized by the Contract Documents or as authorized by the Director.

2-1.15        **DUST CONTROL.** During the performance of all Work under this Contract, the Contractor shall assume all responsibility for dust control and shall furnish all labor, equipment, and means required to carry out proper and efficient measures wherever and whenever dust control is necessary to prevent the operations from producing dust damage and nuisance to persons and property. Any claims resulting from dust damage or nuisance shall be borne solely by the Contractor. The Contractor shall comply with all applicable Air Quality Act requirements.

2-1.16        **SANITATION.** The Contractor shall provide sanitary facilities for all persons working on the Work.

2-1.17        **NIGHT WORK AND NORMAL WORKING HOURS.** Normal working hours at the construction site shall be between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday. Legal holidays are excluded. Certain utility connections and street operations are anticipated to require night Work by the Contractor during low usage periods. The Contractor may also be required to prosecute the Work at night if, at any time, the Director shall deem it necessary for the progress of the Work, or if emergencies arise. The Contractor shall promptly comply with any such requirements made in writing by the Director. The Contractor will also be permitted to Work at night if Contractor satisfies the Director of the need therefor, in order to maintain the required progress or protect the Work from the elements. Certain activities are required to be performed at night for nominal progress of the Work and/or are specified to be performed at night by other portions of the Supplemental Conditions. When required, ordered, or permitted to Work at night, the Contractor shall provide sufficient and

satisfactory lighting and other facilities therefor. The Contractor shall receive no extra payment for night Work, if specified or if required to be performed during the normal progress of the Work, but compensation shall be considered as having been included in the price stipulated for the Work.

If Contractor performs work during weekends, holidays or any non-normal work hours, Contractor shall pay for required City Inspectors.

2-1.18        **LINES AND GRADES.** Unless otherwise provided in the Supplemental Conditions, the Contractor shall lay out all Work, including structures and pipelines, and shall be responsible for any errors resulting therefrom. In all questions arising as to proper location of lines and grades, the Director's decision will be final.

As part of the bid price for the construction of the improvements, the Contractor shall provide and be responsible for the layout of all Work on this project. The Contractor shall provide all necessary surveys, field staking, and positioning for the construction of all components at the proper alignment, elevations, grades, and positions, as indicated on the Contract Drawings and as required for the proper operation and function. The Contractor shall stake its Work area limits. Contractor shall perform all construction staking using a land surveyor licensed in the State of California. Contractor shall provide a staking plan prior to commencement of Work for the City's review and maintain monuments, stakes, and marks, and shall update the plan as necessary. Director, or Director's designated representative, may verify the field condition. Errors or inconsistencies in the Contract Documents discovered by the Contractor shall be reported to the Director within twenty-four (24) hours and prior to constructive forms or related improvements. Any work Installed with this requirement shall be subject to removal and replacement at the Contractor's expense.

The Contractor's lay-out shall be based on existing structures, property lines, survey control, and bench marks established by the City. All structures and pipeline connections shall be Installed based on actual elevation of existing structures to which connections are made.

The Contractor shall supply such labor as required, at no extra charge, to aid and assist the Director in checking location and grades of the Work as set by the Contractor if the Director desires to perform this checking. This shall include moving materials and equipment located between monuments and the construction Work.

2-1.19            **ARCHEOLOGICAL DISCOVERIES.** Upon discovery of prehistoric or historic artifacts, or other indicators or examples of cultural resources discovered during the course of site preparation, grading, excavation, construction or other development activities, all operations within fifty feet (50') of the find shall cease until such time as the City provides the services of a qualified archeologist to evaluate the finds and recommend appropriate action.

Prehistoric materials can include flaked stone tools (e.g., projectile points, knives and choppers) or tool making debris of obsidian, chert, quartzite and other materials, culturally darkened soil (i.e., midden, which often contains heat affected rock, ash and charcoal, shellfish remains, and cultural materials), and stone milling equipment such as mortars, pestles and hand stones. Historic material may include wood, stone, concrete or adobe footings, walls and other structural remains; debris filled wells or privies; and deposits of wood, metal, glass, ceramics and other refuse.

2-1.20            **PRESERVATION OF MONUMENTS.** Any monuments or bench marks disturbed by construction operations shall be repaired per the City's standard and promptly re-established by a registered land surveyor or civil engineer. A plat for each monument shall be furnished to the Director after the plat has been recorded with the Placer

County Recorder's Office at no additional cost to the City. The recorded plat shall serve as a record of the re-establishment of said existing survey points.

2-1.21            **CONFORMITY WITH CONTRACT DOCUMENTS.** Work and materials shall conform to the lines, grades, cross sections, dimensions and material requirements, including tolerances, required by the Contract Documents. Although measurement, sampling and testing may be considered evidence as to such conformity, the City shall be the sole judge as to whether the Work or materials deviate from the Contract Documents. At its option, the City may elect to accept deviations from the Contract Documents with appropriate backcharge Assessments against the Contractor, and, if such an election is made, the City will provide written notice to the Contractor of such acceptance.

2-1.22            **FINAL CLEANUP.** Prior to final Acceptance of the Work, the Contractor shall thoroughly clean the Premises, remove all temporary structures built by or for the Contractor, and remove all equipment and surplus construction material and debris from the area. The entire project, before Acceptance by the City, shall be left in a neat and clean condition. All Work areas and temporary construction areas shall be returned to essentially the same conditions existing before the commencing of project construction.

2-1.23            **AS-BUILT DOCUMENTS AND DRAWINGS.** The Contractor shall maintain one set of the full size prints furnished by the City and mark thereon in color any deviations from plan dimensions, elevations, or orientations. Also, the Contractor shall locate on said prints, all underground facilities, such as piping, conduits and tanks by accurate field measurement from structure walls, corners, etc. The Contractor shall submit the prints and an electronic CD (searchable PDF or source file format such as AutoCAD) in good condition to the Director upon completion of the job as a condition of Acceptance of the project. Marked prints

shall be updated at least once each week and shall be available to the Director for review as to currency prior to developing partial payment estimates. After the completion of testing, but prior to Acceptance, the Contractor shall submit As-Built electrical drawings in color and an electronic CD showing all components and their wiring, and as specified in the Supplemental Conditions.

2-1.24            **SUPERINTENDENCE.** The Contractor shall supervise and direct the Work, which shall be performed in accordance with the requirements of the Contract Documents. The Contractor shall be solely responsible for implementation of all construction means, methods, techniques, sequences, and procedures and for coordination of all portions of the Work under the Agreement. The Contractor shall be solely responsible for the safety of its employees, Subcontractors of any tier, Suppliers, visitors to the Contractor, and other third parties associated with the Contractor.

The Contractor shall designate in writing before starting Work, an authorized representative who shall have the authority to represent and act for the Contractor.

When the Contractor is comprised of two (2) or more persons, firms, partnerships, or corporations functioning on a joint venture basis, said Contractor shall designate in writing before starting Work, the name of one authorized representative who shall have the authority to represent and act for the Contractor. Instances of misconduct, contract non-compliance, unsatisfactory performance, or incompetence by these personnel shall be grounds for the City to direct Contractor to dismiss them from the Project. Contractor shall immediately comply with the City's request for dismissal, at no cost to the City, and shall designate a replacement, which shall be subject to approval by the City.

Said authorized representative shall be present at the site of the Work at all times while Work is actually in progress on the Contract. When Work is not in progress and during periods

when Work is suspended, arrangements acceptable to the Director shall be made for any Emergency Work that may be required.

Whenever the Contractor or its authorized representative is not present on any particular part of the Work where it may be desired to give direction, orders will be given by the Director, which shall be received and obeyed by the superintendent or foremen who may have charge of the particular Work in reference to which the orders are given.

Any order given by the Director, not otherwise required by the Supplemental Conditions to be in writing, will on request of the Contractor, be given or confirmed by the Director in writing.

2-1.25        **CHARACTER OF WORKER.** If any Subcontractor or person employed by the Contractor shall appear to the Director to be incompetent or to act in a disorderly or improper manner, he or she shall be removed immediately on the requisition of the Director, and such person shall not again be employed on the Work.

2-1.26        **INSPECTION.** The Contractor shall at all times permit the Director to inspect the Work or any part thereof. The Contractor shall maintain proper facilities and provide safe access for such inspection by the Director to all parts of the Work, and to the shops where the Work is in preparation. Work shall not be covered up until authorized by the Director and the Contractor shall be solely responsible for notifying the Director where and when such Work is in readiness for inspection and testing. Should any such Work be covered without authorization, it shall, if so ordered, be uncovered at the Contractor's expense.

Unless otherwise designated as normal working hours, whenever the Contractor intends to perform Work on Saturday, Sunday, or a Legal Holiday, the Contractor shall give notice to the Director of such intention forty-eight (48) hours prior to performing such Work, or such longer

period as may be specified so that the Director may make necessary arrangements.

The observation and/or approval of the workmanship or materials by the City shall not relieve the Contractor of any obligations to fulfill the requirements of the Contract Documents. Workmanship and materials not meeting such requirements shall be corrected and unsuitable Work or material may be rejected, notwithstanding that such Work or materials have been previously observed and/or approved by the City, or payment therefor has been included in a progress estimate.

The City may order re-examination of questioned Work at any time before final Acceptance. If so ordered, the Contractor shall uncover the Work. If such work is found to be in accordance with the Contract Documents, the City will pay for the cost of uncovering, removing, recovering and replacing the parts removed; but if such Work so exposed or examined is not in accordance with the Contract Documents, the uncovering, removal, recovering and replacement shall be at the Contractor's expense. Work that has been covered prior to observation by the City does not qualify as re-examined work; the City may order such work uncovered for observation without payment of any costs.

2-1.27        **REMOVAL OF REJECTED AND UNAUTHORIZED WORK.** All Work which has been rejected shall be remedied, or removed and replaced by the Contractor in a manner acceptable to the Director and no compensation will be allowed the Contractor for such removal, replacement, or remedial Work.

Any Work done beyond the lines shown on the Contract Drawings or established by the Director, or any Work done without written authority will be considered as unauthorized Work and will not be paid for. Upon order of the Director, unauthorized Work shall be remedied, removed, or replaced at the Contractor's expense.

Upon failure of the Contractor to comply promptly with any order of the Director made under this section, the Director may cause rejected or unauthorized Work to be remedied, removed, or replaced, and the costs thereof will be deducted from any moneys due or to become due the Contractor.

## SECTION 3

### CHANGES IN THE WORK

3-1.01            **CHANGES.** The Director, without invalidating this Agreement and without notice to Contractor's surety, may order changes in the Work, consisting of additions or deletions, or other revisions. The Contract Price and the Contract Time shall be adjusted accordingly. All such changes in the Work, including in the Contract Price and the Contract Time, shall be authorized only by Contract Change Order, signed by the Director.

If Contractor claims that performance of any work entitles it to additional compensation or to an extension of time for performance of the Work, Contractor shall provide written notice to the City of any such claim prior to undertaking such work. Contractor shall provide written notice of any anticipated impacts to the Contract Price or Contract Time within three (3) Days of discovering such impact, by submitting a Notice of Potential Claim described in Section 7-1.03 below, or notice of delay as described in Section 6-1.09 below. If the Director refuses to issue a Change Order for such work, Contractor shall perform that work if directed or obligated to do so and shall submit a complete and specific Claim for additional compensation and/or extension of time for performance within fifteen (15) Days after such work is performed, as described in Section 7-1.03 below. Failure to provide written notice of claims prior to undertaking such work, failure to provide a timely Notice of Potential Claim, or failure to submit timely a complete and specific Claim for additional compensation and/or extension of the time for performance, shall be deemed a waiver and abandonment of any such Claim. No Claim, dispute or controversy shall interfere with the progress or performance of the Work and the Contractor shall proceed with the Work as directed by the Director. Failure to so proceed shall amount to a

default under this Agreement.

3-1.02            **PROPOSED CHANGE ORDERS.** The Contractor will be notified in writing of a proposed Change Order describing the intended change. Within fifteen (15) Days after receipt of a written request, the Contractor shall submit its proposed price to be added or deducted from the Contract Price due to the change and its estimate of the extent of the adjustment in the Contract Time, if any. The Contractor's proposed price to be added to or deducted from the Contract Price shall be supported by a detailed estimate of cost prepared by the Contractor, vendor or Supplier. The Contractor's proposed price submittal shall be accompanied by a statement of the time necessary for the changed Work, together with a description of how this time will be incorporated into the current Construction Schedule. The Contractor shall upon request by the Director permit inspection of its original Contract estimate, subcontract agreements or purchase orders relating to the change.

If agreement is reached on the adjustment in compensation as provided in Section 3-1.05, "Contract Price Adjustment," of these General Conditions, the Contractor shall proceed with the Work as changed at the agreed price.

If the Contractor and the Director fail to agree as to the adjustment in compensation for the performance of the changed Work, the Contractor, upon written order from the Director, shall proceed immediately with the changed Work and the Contract Price shall be adjusted in accordance with Section 3-1.06, "Force Account Payment," of these General Conditions.

If the Contractor fails to submit its cost estimate within such fifteen (15) Day period, the Contractor shall commence the Work as changed immediately upon receipt of written order of the Director, and the Contract Price will be adjusted in accordance with the Director's cost estimate for the changed Work.

3-1.03

**EMERGENCY AND INDETERMINATE TYPE CHANGE**

**ORDERS.** Changes in the Work made necessary by an Emergency, as determined by the Director, or changes of a kind where the extent of the Work cannot be determined until completed, may be authorized by the Director in writing. The Change Order shall state that it is issued pursuant to this Section 3-1.03. Upon receipt of an authorized Change Order or other written order of the Director, the Contractor shall proceed with the ordered Work and the Director will maintain a daily job record containing a detailed summary of all labor, materials and equipment required for the changed Work.

Within fifteen (15) Days after receiving a written request, the Contractor shall submit a detailed estimate of cost for the change and any requested change in Contract Time in the same manner as required for proposed Change Orders in Section 3-1.02 of these General Conditions.

3-1.04

**EXECUTED CHANGE ORDER.**

A Contract Change Order signed by both the Director and the Contractor is an “executed Contract Change Order.” By signing the Contract Change Order, the Contractor agrees that the specified compensation constitutes full compensation for the changed Work, including payment for interruption, disruption, acceleration, extended Overhead, delay or any other “impact” claim or “ripple effect” claim. The Contractor specifically understands and agrees that its execution of the Contract Change Order shall constitute a waiver of any right for the Contractor to claim any additional compensation with respect to the subject matter of the Contract Change Order.

3-1.05

**CONTRACT PRICE ADJUSTMENT.**

If a Contract Change Order provides for an adjustment to the Contract Price, the amount of such adjustment shall be determined by one of the following methods, or a combination thereof, as determined by the City and in its sole discretion:

A. Lump sum. The Contractor and the City may agree on a lump sum amount for the Change Order. At the City's request, the Contractor will provide pricing for the work. Maximum markups for Contract Change Orders paid for using lump sum pricing shall be paid for in the same manner and in the same amounts as markups for Force Account work, as described in Section 3-1.06 below.

B. Unit Prices. The unit prices set forth in the Contractor's Schedule of Bid Prices will be utilized where they are applicable and acceptable to the City. The Contractor's unit prices shall remain firm and shall not be subject to adjustment unless and until the actual quantity of work is increased or decreased by Contract Change Order in an amount greater than twenty-five percent (25%) from the estimated quantity indicated for such item. No markups will be given for Contract Change Orders paid for using unit prices.

Unit prices for new items included in the Contract Change Order but not included in the original bid shall be as mutually agreed upon or, in the absence of agreement, as determined by the City in the same manner as if the work were to be paid for on a Force Account basis, as described in Section 3-1.06 below.

C. Force Account. Where the City and the Contractor are unable to agree on lump sum pricing and if the City does not elect to utilize the unit prices in Contractor's bid, or such unit prices are not applicable, the changed work will be performed and tracked by the Contractor as Force Account work, as described in Section 3-1.06 below. The City will pay for such work, including markups, properly attributable to the change in accordance with those Force Account provisions.

D. Eliminated Items. The City reserves the right to delete any bid item of Work in its entirety. The City makes no representation that any work under a bid item of Work

will be performed, and all work may be subject to a Contract Change Order that deletes such work. Bid items are distinct and severable from the other bid items, and the Contractor shall not be entitled to any anticipated profit, unabsorbed Overhead, or other indirect expense attributable to the deleted item, except as provided immediately below with regard to Force Account mark-ups on the direct and verifiable costs incurred prior to the City's order that deletes the work.

Should any bid item of Work be eliminated in its entirety and not accounted for as described immediately above and, in the absence of an executed Contract Change Order covering such elimination, payment will be made to the Contractor for actual direct and verifiable costs incurred in connection with such eliminated bid item if incurred prior to the date of notification in writing by the City of such elimination. If acceptable material is ordered by the Contractor for the eliminated item prior to the date of notification of such elimination by the City, and if orders for such material cannot be canceled, it will be paid for at the actual direct and verifiable cost to the Contractor. Actual direct costs shall include documented vendor shipping fees, Supplier restocking fees, if applicable, and Contractor handling costs directly related to the eliminated item(s). In such case, the material paid for shall become the property of the City and the actual cost of any further handling will be paid for by the City. If the material is returnable to the vendor and if the City so directs, the material shall be returned and the Contractor will be paid for the actual direct cost of charges made by the vendor for returning the material. The actual direct cost of handling returned materials will also be paid for by the City. The actual direct and verifiable costs to be paid by the City as provided herein will be computed in the same manner as if the work were to be paid for on a Force Account basis, including the application of Force Account mark-ups to said costs.

3-1.06            **FORCE ACCOUNT PAYMENT.** When Work performed pursuant to a

Change Order is to be paid for on a Force Account basis, the Contractor's labor, materials and equipment used in the performance of such Work shall be subject to the approval of the City, and the compensation will be determined as set forth below in this section.

3-1.06A        **LABOR.** The Contractor will be paid an amount based on the actual cost for the workers (including foremen when authorized by the Director) used in the actual and direct performance of the Work. All labor costs associated with Overhead, whether field or home office, are specifically excluded herein, as those labor costs are covered by the below mark-ups. The cost of labor, whether the employer is the Contractor, Subcontractor or other forces, shall include employer payments; assessment of benefits required by lawful labor union collective bargaining agreements; compensation insurance payments; contributions made to the State pursuant to the Unemployment Insurance Code; and for taxes paid to the Federal Government pursuant to the Social Security Act of August 14, 1935, as amended. No labor cost will be recognized at a rate in excess of the wages prevailing in the locality at the time the Work is performed, nor will the use of a labor classification, which would increase the cost, be permitted unless the Contractor establishes to the complete satisfaction of the Director the necessity for payment at a higher rate.

3-1.06B        **MATERIALS.** Only materials furnished by the Contractor and necessarily used in the performance of the Work will be paid for. Such cost of materials may include the costs of procurement, transportation and delivery if necessarily incurred. If a cash or trade discount by the actual supplier is available to the Contractor, it shall be credited to the City. If materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual supplier plus the actual costs, if any, incurred in the

handling of such materials. If the materials are obtained from a supply or source owned wholly or in part by the purchaser, the cost of such materials shall not exceed the price paid by the purchaser for similar materials furnished from said source on Bid items or the current wholesale price for such materials delivered to the job site, less any discounts as provided herein, whichever is lower. If, in the opinion of the Director, the cost of materials is excessive, or if the Contractor fails to furnish satisfactory evidence of the cost to it from the actual supplier within sixty (60) Days after the date of delivery of the materials or within fifteen (15) Days after Acceptance of the Agreement, whichever occurs first, the cost of the materials shall be deemed to be the lowest current wholesale price at which similar materials are available in the quantities required, less any discounts provided herein. The Department reserves the right to furnish such materials required by the Change Order as it deems advisable, and the Contractor shall have no claim for cost or markups on material furnished by the Department.

3-1.06C        **EQUIPMENT.** The Contractor will be paid an amount based on the actual cost for the use of equipment directly required and approved by the Director in the performance of the changed Work. No payment will be made for time while equipment is inoperative due to breakdowns or on Days when no Work is performed. In addition, the rental time shall include the time required to move the equipment to the Work from the nearest available source of such equipment, and to return it to the source. If such equipment is not moved by its own power, then loading and transportation costs will be paid. Moving time, loading and transportation costs will only be paid if the equipment is used exclusively on the changed Work during the time between move in and move out. Individual pieces of equipment having a replacement value of One Thousand Dollars (\$1000) or less shall be considered to be tools or small equipment, and no payment will be made therefore. For equipment owned,

furnished, or rented by the Contractor, no cost therefore shall be recognized in excess of the equipment rental rates published by Caltrans at the following website address:

<http://www.dot.ca.gov/hq/construc/equipmnt.html>. Equipment located at a Work Site and utilized on non-Force Account work shall not be eligible for standby payment, and shall be charged on a Force Account basis only when solely performing pre-approved Force Account work tasks.

3-1.06D **MARKUPS.** When a Change Order increases the cost of the Work, the Contractor may add the following maximum markups to its actual costs of labor, materials, or equipment rental:

- 15 percent for labor;
- 10 percent for materials; and
- 5 percent for equipment rental.

The above markups include full compensation, covering the costs of all supervision, bonds, profit, Overhead, and other general expenses not specifically designated as a direct cost in Sections 3-1.06A through 3-1.06C above. The total payment (i.e., direct cost plus applicable markups) shall be deemed to be the actual cost of such work and shall constitute full compensation therefor. The Contractor specifically understands and agrees that such payment shall include any Contractor costs for interruption, disruption, and acceleration, extended Overhead, Change Order management, delay or other “impact” claim or “ripple effect” claim.

When work paid for on a Force Account basis is performed by forces other than the Contractor’s own forces, the maximum allowable mark-ups for the Subcontractors’ costs shall be fifteen percent (15%) for the cost of labor, ten percent (10%) for the cost of materials, and five percent (5%) for the cost of rented equipment. In these situations where the work is being performed by Subcontractors, the Contractor will only be entitled to an additional five percent

(5%) mark-up and will not be entitled to receive the additional mark-ups specified in this section.

When a Change Order decreases the cost of the Work, the reduction in cost shall include a five percent (5%) markup on the estimated cost for furnishing the labor, materials and equipment, which would have been used on such Work, had the Change Order not been issued.

When a Change Order involves both added Work and deleted Work, the markup or markups to be used shall be as follows:

The actual costs of labor, materials, and equipment rental for added and deleted Work shall be calculated separately without adding markups. If the difference between the calculated costs for labor results in an increased cost, a markup of fifteen percent (15%) shall be applied to the increased cost. If the difference between the calculated costs of materials or equipment rental results in an increased cost, a markup of ten percent (10%) and five percent (5%) respectively, shall be applied to the increased costs of materials or equipment rental, as the case may be. If the difference between the calculated costs for labor, materials or equipment rental results in a decreased cost, a markup of five percent (5%) shall be applied to the decreased costs of labor, materials or equipment rental, as the case may be.

Contractor shall not add mark-ups on work performed and billed by City staff nor add mark-ups to successive iterations of proposed Change Order cost proposals returned to Contractor by the City due to incomplete or inaccurate information being originally submitted by the Contractor. If the Contract Price increases by the issuance of Change Orders, the penal amounts of the bonds required shall increase accordingly.

3-1.06E        **RECORDS.** The Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of extra work paid for on a Force Account basis and the costs of other operations.

From the above records, the Contractor shall furnish the City completed daily extra work reports, on forms acceptable to the City, for each Day's extra work to be paid for on a Force Account basis. The daily extra work reports shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, Subcontractor, or other forces. The daily extra work reports shall provide names and identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment, and hours operated. Daily extra work and Force Account reports (actual or claimed) shall be signed by both the City's and the Contractor's representatives within twenty-four (24) hours of the performance of the work.

Valid copies of vendor's invoices shall substantiate material charges. Such invoices shall be submitted with the daily extra work reports, or if not available, they shall be submitted with subsequent daily extra work reports. Should said vendor's invoices not be submitted within sixty (60) Days after the date of delivery of the material or within fifteen (15) Days after the Acceptance of the Agreement, whichever occurs first, the City reserves the right to establish the cost of such materials at the lowest current wholesale prices at which said materials were available in the quantities, less any discounts.

The City will compare its records with the completed daily extra work reports furnished by the Contractor and make any necessary adjustments. When these daily extra work reports are agreed upon and signed by both parties, said reports shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit by the City.

The Contractor's cost records pertaining to Work paid for on a Force Account basis shall be open to inspection or audit by representatives of the City during the life of the Agreement and for a period of not less than three (3) years after the date of Agreement completion and the

Contractor shall retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor shall make every reasonable effort to insure that the cost records of such other forces will be open to inspection and audit by representatives of the City on the same terms and conditions as the cost records of the Contractor. If an audit is to be commenced more than sixty (60) Days after the date of Acceptance of the Agreement, the Contractor will be given fifteen (15) Days' notice of the time when such audit is to begin.

3-1.07            **COST REDUCTION PROPOSALS.** The City encourages the Contractor to submit Cost Reduction Proposals whenever the Contractor identifies areas and/or instances in which there can be savings to the Work. Contractor may submit to the City, in writing, proposals for modifying the plans, Specifications or other requirements of the Agreement for the sole purpose of reducing the total cost of construction, including the time for completion of the Work. The City may consider such Cost Reduction Proposals and, if accepted, the Agreement will be equitably adjusted. The City has no obligation to consider or accept Cost Reduction Proposals.

**SECTION 4**  
**CONTROL OF MATERIALS**

4-1.01        **MATERIALS.** The Contractor shall furnish all materials required to complete the Work, except materials that are designated in the Supplemental Conditions to be furnished by the City and materials furnished by the City in accordance with Section 3, “Changes in the Work,” of these General Conditions.

Unless otherwise specified in the Supplemental Conditions, materials furnished by the Contractor for incorporation into the Work shall be new. When the quality or kind of materials, articles, or equipment is not particularly indicated, then the quality or kind thereof shall be similar to those that are indicated.

Articles or materials to be incorporated in the Work shall be stored in such a manner as to insure the preservation of their quality and fitness for the Work, and to facilitate inspection.

All materials which do not conform to the requirements of the Contract Documents as determined by the Director, will be rejected whether in place or not. Rejected material shall be removed immediately from the site of the Work, unless otherwise permitted by the Director. No rejected material, the defects of which have been subsequently corrected, shall be used in the Work, unless approval in writing has been given by the Director. Upon failure of the Contractor to comply promptly with any order of the Director made under these provisions, the Director shall have the authority to cause the removal and replacement of rejected material and to deduct the cost thereof from any moneys due or to become due the Contractor.

Manufacturer's warranties, guaranties, instruction sheets and parts lists, which are furnished with certain materials incorporated in the Work, shall be delivered to the Director

before Acceptance of the Contract.

Unless otherwise designated in the Supplemental Conditions or Specifications, materials furnished by the City will be delivered to the job site. Materials furnished by the City that are designated in the Supplemental Conditions as available at locations other than the job site shall be hauled to the site of the Work by the Contractor at its expense, including any necessary loading and unloading that may be involved.

The Contractor will be held responsible for all materials furnished to it, and shall pay all demurrage and storage charges. City-furnished materials lost or damaged from any cause whatsoever shall be replaced by the Contractor. The Contractor will be liable to the Department for the cost of replacing City-furnished material and such costs may be deducted from any moneys due or to become due the Contractor.

4-1.02            **PRODUCT AND REFERENCE STANDARDS.** When descriptive catalog designations, including manufacturer's name, product brand name, or model number are referred to in the Contract Documents, such designations shall be considered as being those found in industry publications in effect on the day the Notice to Contractors for the Work is dated, except as may be otherwise stated.

When standards or test designations of the Federal Government, trade societies, or trade associations are referred to in the Contract Documents by specific date of issue, these shall be considered as part of the Contract. When such references do not bear a date of issue, the edition in effect on the day the Notice to Contractors for the Work is dated shall be considered as part of the Contract.

4-1.03            **SAMPLING AND TESTING OF MATERIALS.** Unless otherwise specified, all tests shall be performed in accordance with the methods used by the State

Department of Transportation (Caltrans) and shall be made by the Director or his or her designated representative.

The State Department of Transportation has developed test methods for testing the quality of materials and Work. These test methods are identified by a California Test followed by the serial number. Copies of individual tests are available at the State Department of Transportation Laboratory, Sacramento, California, and will be furnished to interested persons upon request.

Whenever a reference is made in the Supplemental Conditions to a California Test by number, it shall mean the California test in effect on the day the Notice to Contractors for the Work is dated.

Whenever the Supplemental Conditions provide an option between two (2) or more test methods, the Director will determine the test method to be used.

Whenever a Supplemental Condition, manual, or test designation provides for test reports (such as certified mill test reports) from the manufacturer, copies of such reports, identified as to the lot of material, shall be furnished to the Director. The manufacturer's test reports shall supplement the inspection, sampling and testing provisions of this Section 4-1.03 and shall not constitute a waiver of the City's right to inspect. When material which cannot be identified with specific test reports is proposed for use, the Director may at his or her discretion, select random samples from the lot for testing. Testing specimens from the random samples, including those required for retest, shall be prepared in accordance with the referenced Supplemental Conditions and furnished by the Contractor at its expense. The number of such samples and test specimens shall be entirely at the discretion of the Director.

When requested by the Director, the Contractor shall furnish, without charge, samples of

all material entering into the Work, and no material shall be used prior to approval by the Director, except as provided in Section 4-1.04, "Certificates of Compliance," of these General Conditions.

A. Inspection and Access for Testing. The Contractor shall provide safe access for the Director and his or her inspectors to adequately inspect the quality of Work and conformance with the General and Supplemental Conditions. The Contractor shall provide adequate lighting, ventilation, ladders and other protective facilities as may be necessary for the safe performance of inspections.

The Contractor shall submit samples or specimens of such materials to be furnished or used in the Work as the Director may require. The Contractor shall furnish the Director all necessary labor and facilities for such things as excavation in the compacted fill to depths required to take samples.

Inspections, tests, or favorable review by the Director or others shall not relieve the Contractor from its obligations to perform the Work in accordance with the requirements of the Contract Documents.

Work covered without the favorable review or consent of the Director shall, if required by the Director, be uncovered for examination at the Contractor's expense.

If the Engineer, Architect, or Director considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the Director's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Director may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of

satisfactory reconstruction. If, however, such Work is not found to be defective and the Work was not covered without favorable review of the Director, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to cover its costs directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction and an appropriate Change Order shall be issued.

Whenever the Contractor varies the period during which Work is carried on each Day, the Contractor shall give due notice to the Director so that proper inspection may be provided. Any Work done in the absence of the Director may be subject to rejection. Proper facilities for safe access for inspection to all parts of the Work shall at all times be maintained for the necessary use of the Director and other agents of the City. Authorized representatives and agents of the Director shall be permitted access to inspect all Work and materials wherever it is required for preparation of progress reports, and the Contractor shall provide proper facilities for such access and inspection.

It is the Contractor's responsibility to supervise the Work and complete the project in accordance with the Contract Documents. In the course of managing that effort, the Contractor shall generate its own punch lists as deemed necessary. The Director may prepare punch lists for the Director's own use in communicating with the Contractor; however, the Director shall be under no obligation to prepare punch lists for the Contractor. In general, the Director will prepare punch lists only after the Contractor has given the Director written notice that the subject Work is completed and tested in accordance with the Contract Documents and is ready for operation and/or use and/or occupancy. Failure of the Director to include an item in a punch list shall not relieve the Contractor of its duty to satisfactorily complete all Work required by the Contract Documents.

Upon Final Completion of the construction Work and request by the Contractor, the Director will conduct a final inspection as a basis for recommending to the City that the Work be accepted.

B. Field and Materials Testing. Where the Supplemental Conditions require Work to be specially field tested or approved, it shall be tested only in the presence of the Director after timely notice of its readiness for inspection and test, and the Work after testing shall be covered up only upon the consent thereto of the Director.

The results of any tests made are for the information of the Director. Regardless of any test results, the Contractor is solely responsible for the quality of workmanship and materials and for compliance with the requirements of the Contract Drawings and Supplemental Conditions.

Except as specifically required under the Supplemental Conditions, all tests by the Director of materials furnished by the Contractor will be done in accordance with commonly recognized standards of national organizations. The Contractor shall furnish such samples of all materials as required by the Director without charge. No material shall be used unless it has been favorably reviewed by the Director.

Where such inspection and testing are to be conducted by an independent Laboratory or agency, the sample or samples of materials to be tested shall be selected by such Laboratory or agency, or the Director, and not by the Contractor.

C. Costs of Testing.

1. Initial Services: The City shall furnish and pay for all initial testing services required by the Contract Documents. When initial tests indicate non-compliance with the Contract Documents, the cost of initial tests associated with that non-compliance will be

deducted by the City from the balance owed the Contractor. The Contractor shall furnish samples of materials for testing as may be required by the Director. Such samples shall be furnished without cost to the City.

2. Retesting: When initial tests indicate non-compliance with the Contract Documents, all subsequent retesting occasioned by the non-compliance shall be performed by the same testing Laboratory and the cost thereof will be deducted by the City from the balance owed the Contractor. Contractor shall be billed for each additional test.

3. Contractor Convenience Testing: Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

4. Additional Tests and Inspections: When in the opinion of the Director additional tests or inspections are required because of the manner in which the Contractor executes its Work, such tests and inspections shall be paid for by the City, but will be deducted from the Contract Price. Examples of such tests and inspections are tests of materials substituted for previously accepted materials or substituted for specified materials, retests made necessary by failure of material to comply with the requirements of the Specifications, load tests made necessary because of portions of the structure not fully meeting Specifications or plan requirements, etc.

4-1.04 **CERTIFICATES OF COMPLIANCE.** A Certificate of Compliance shall be furnished prior to the use of any materials for which the Supplemental Conditions require that such a Certificate be furnished. In addition, the Director may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The Certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all

respects with the requirements of the Supplemental Conditions. A Certificate of Compliance shall be furnished with each lot of such materials delivered to the Work and the lot so certified shall be clearly identified in the Certificate.

All materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents and any such material not conforming to such requirements will be subject to rejection whether in place or not.

The Department reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance.

The form of the Certificate of Compliance and its disposition shall be as directed by the Director.

## SECTION 5

### LEGAL RELATIONS AND RESPONSIBILITY

5-1.01        **LAWS TO BE OBSERVED.** The Contractor shall keep informed of and observe, and comply with and cause all of its agents and employees to observe and comply with, all prevailing Federal and State laws, and rules and regulations made pursuant to said Federal and State laws, and county and municipal ordinances, and regulations, which in any way affect the conduct of the Contract. If any conflict arises between provisions of the Contract and any such law above referred to, the Contractor shall notify the Director at once in writing. To the fullest extent allowed by law, the Contractor shall defend, indemnify, and save and hold harmless the City or any of its officers, agents, employees, and volunteers against any claim or liability arising from or based on the violation of any such law, rule, or regulation, whether by itself or its agents or employees.

5-1.02        **HOURS OF LABOR.** Eight (8) hours labor constitutes a legal Day's work. The Contractor or Subcontractor shall, as a penalty to City, forfeit Twenty-five Dollars (\$25) for each worker employed in the execution of the contract by the respective Contractor or Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of the Labor Code, and in particular, Section 1810 to Section 1815, thereof, inclusive, except that Work performed by employees of Contractors in excess of eight (8) hours per day, and forty (40) hours during any one (1) week, shall be permitted upon public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay, as provided in said

Section 1815. In addition, Contractor and/or its Subcontractors may be required to pay double the basic rate of pay for all hours worked in excess of twelve (12) hours in any workday and under other circumstances. (See California Code of Regulations, Title 8, Sections 16100(c)(6) and (16200(a)(3)(F) and applicable Department of Industrial Relations prevailing wage determinations.)

5-1.03            **NONDISCRIMINATION.**

A.            Attention is directed to Labor Code Section 1735, which reads as follows:

“A contractor shall 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.”

B.            During the performance of this Contract, Contractor and its Subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status. The Contractor and Subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. The Contractor and Subcontractors shall comply with the provisions of the California Fair Employment and Housing Act (Government Code §12900, et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, §7285.0 et seq.) and other applicable State and Federal regulations and City

policies pertaining to nondiscrimination and affirmative action which are incorporated into this Agreement by reference and made a part hereof as if set forth in full. The Contractor and its Subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

C. Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform Work under the agreement.

5-1.04 **PREVAILING WAGE.** The Contractor and any Subcontractor shall comply with Labor Code Sections 1770 et seq. In accordance with said Section 1775 the Contractor and any Subcontractor under the Contractor shall, as a penalty, forfeit to the state or City not more than \$200 for each calendar day or portion thereof, for each worker paid less than the prevailing rate as determined by the Director of Industrial Relations for the work or craft in which such worker is employed for under the Contract by the Contractor or by any Subcontractor under the Contractor.

The amount of the penalty shall be determined by the Labor Commissioner based on consideration of both of the following: (a) whether the failure to pay the correct rate of per diem wages was a good-faith mistake and, if so, whether the error was promptly and voluntarily corrected when brought to the attention of the Contractor or Subcontractor; and (b) whether the Contractor or Subcontractor has a prior record of failing to meet its prevailing wage obligations.

The penalty may not be less than forty dollars (\$40) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, unless the failure of the Contractor or Subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the Contractor or Subcontractor.

The penalty may not be less than eighty dollars (\$80) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Contractor or Subcontractor has been assessed penalties within the previous three (3) years for failing to meet its prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

The penalty may not be less than one hundred twenty dollars (\$120) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Labor Commissioner determines that the violation was willful, as defined in subdivision (c) of Section 1777.1 of the Labor Code.

If the amount due under this section is collected from the Contractor or Subcontractor, any outstanding wage claim under Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 of the Labor Code against the Contractor or Subcontractor shall be satisfied before applying that amount to the penalty imposed on that Contractor or Subcontractor pursuant to this section.

The determination of the Labor Commissioner as to the amount of the penalty shall be reviewable only for an abuse of discretion.

In addition to said penalty, the difference between such stipulated 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 stipulated prevailing wage shall be paid to each worker by the Contractor or Subcontractor.

If a worker employed by a Subcontractor on a public works project is not paid the general prevailing per diem wages by the Subcontractor, the Contractor is not liable for any penalties described above unless the Contractor had knowledge of that failure of the Subcontractor to pay

the specified prevailing rate of wages to those workers or unless the Contractor fails to comply with all of the following requirements:

1. The contract executed between the Contractor and the Subcontractor for the performance of work on the public works project shall include a copy of the provisions of Sections 1771, 1776, 177.5, 1813, and 1815 of the Labor Code.
2. The Contractor shall monitor the payment of the specified general prevailing rate of per diem wages by the Subcontractor to the employees, by periodic review of the certified payroll records of the Subcontractor.
3. Upon become aware of the Subcontractor's failure to pay its workers the specified prevailing rate of wages, the Contractor shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the Subcontractor for work performed on the public works project.
4. Prior to making final payment to the Subcontractor for work performed on the public works project, the Contractor shall obtain an affidavit signed under penalty of perjury from the Subcontractor that the Subcontractor has paid the specified general prevailing rate of per diem wages to its employees on the public works project and any amount due pursuant to 1813 of the Labor Code.

Pursuant to Section 1775 of the Labor Code, the Division of Labor Standards Enforcement shall notify the Contractor on a public works project within fifteen (15) Days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a Subcontractor on that public works project to pay workers the general prevailing rate per diem wages.

Pursuant to the provisions of California Labor Code Section 1773, the City has obtained

the general prevailing rate of wages applicable to the categories of workers the City anticipates will be utilized for this project for straight time, overtime, Saturday, Sunday, and holiday Work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification or type of worker concerned or, if no collective bargaining applies, those holidays identified in Government Code Section 6700. These wage rates may be obtained from the State Department of Industrial Relations and/or the following website address: <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>, which is incorporated herein as a part of this Contract.

Pursuant to Labor Code Section 1773.2, the general prevailing wage rates set forth above, which forms a part of this Contract, shall be posted by the Contractor at a prominent place at the site of the Work.

Pursuant to Labor Code Section 1773.6 and California Code of Regulations Section 16204, Title 8, changes in general prevailing wage determinations shall apply to the project only if issued by the Director of Industrial Relations prior to the City's bid issuance date.

The City will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate set forth in the Contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining its Bid, and will not under any circumstances be considered as the basis of a claim against the City or Contract.

When both California and Federal prevailing wage rates apply, the Contractor and any Subcontractors shall pay their workers the higher of the two rates. The Contractor and any Subcontractors shall insert this clause in any lower tier contract.

5-1.05            **REGISTRATION REQUIRED AS QUALIFICATION TO BID.**

Pursuant to Labor Code Section 1771.1(b), notice is hereby given that a Contractor or Subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contractor for public work, as defined in Labor Code Sections 1720, et seq., unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. It is not a violation of Labor Code Section 1771.1 for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5.

5-1.06        **PAYROLL RECORDS.** The Contractor's attention is directed to the following provisions of Labor Code Section 1776. The Contractor shall be responsible for the compliance with these provisions by its Subcontractors.

A.        The Contractor and each Subcontractor shall keep accurate and current payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by it in connection with the public work. Each payroll record shall contain or be verified by a written declaration that is made under penalty of perjury, stating both of the following:

1.        The information contained in the payroll record is true and correct.
2.        The employer has complied with the requirements of Section 1771, 1811, and 1815 for any work performed by his or her employees on the public works project.

B.        The payroll records enumerated under subdivision (A) shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following

basis:

1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his or her authorized representative on request.

2. A certified copy of all payroll records enumerated in subdivision (A) shall be made available for inspection or furnished upon request to a representative of the City, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations. The City reserves the right to withhold any progress payments to the Contractor in the event of noncompliance with the subsection.

3. A certified copy of all payroll records enumerated in subdivision (A) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the City, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. The public shall not be given access to such records at the principal office of the Contractor.

C. The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division.

D. Each Contractor shall file a certified copy of the records enumerated in subdivision (A) with the entity that requested the records within ten (10) Days after receipt of a written request.

E. Any copy of the records made available for inspection as copies and furnished upon request to the public or any public agency by the City, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or

obliterated to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor awarded the Contract or Subcontractor performing the Contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (Section 175a of Title 29 of the United States Code) shall be marked or obliterated only to prevent the disclosure of an individual's name and social security number. A joint labor-management committee may maintain an action in a court of competent jurisdiction against an employer who fails to comply with Section 1774. The court may award restitution to an employee for unpaid wages and may award the joint labor-management committee reasonable attorneys' fees and costs incurred in maintaining the action. An action under this subdivision may not be based on the employer's misclassification of the craft of a worker on its certified payroll records. Nothing in this subdivision limits any other available remedies for a violation of this section.

F. The Contractor shall inform the City of the location of the records enumerated under subdivision (A), including the street address, city and county, and shall, within five (5) business days, provide a notice of a change of location and address.

G. The Contractor shall have ten (10) Days in which to comply subsequent to receipt of written notice requesting the records enumerated in subdivision (A). In the event that the Contractor or Subcontractor fails to comply within the ten (10) Day period, the Contractor shall, as a penalty to the State or City, forfeit twenty-five (\$25) Dollars for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from any progress payment or final payment then due. A contractor

is not subject to a penalty assessment pursuant to this section due to the failure of a Subcontractor to comply with this section.

5-1.07            **SAFETY REQUIREMENTS.** It is the intent of the parties that the City is not an exposing, creating, controlling, or correcting employer under California Labor Code Section 6400. In accordance with generally accepted construction practices and State law, the Contractor shall have the authority and be solely and completely responsible for conditions on the Work Site, including safety of all persons and property during performance of the Work. Moreover, the Contractor shall be the controlling employer and has the authority and responsibility to enforce Work Site safety. The Contractor shall be responsible for conducting daily safety inspections and assuring all hazards and violations are abated. The Contractor is responsible for assuring that all Subcontractors adhere to the minimum Cal/OSHA safety requirements and that each Subcontractor has an effective Cal/OSHA IIPP (Illness and Injury Prevention Program) in place that specifically addresses all potential exposures, such as, but not limited to, fall protection, confined space, and trenching/shoring. These requirements shall apply continuously and not be limited to normal working hours. The Contractor shall be responsible for any delay costs or damages in the event the progress of Work is slowed or stopped due to a safety violation.

The Contractor shall designate a safety officer and have in place a health and safety plan in accordance with the laws of State of California and conduct safety meetings and document them in accordance with the law. The Contractor shall have the safety record available for inspection during working hours and shall submit job site safety meeting reports with each Application for Payment.

Prior to Contractor commencing construction project work on City property, Contractor

shall make available copies of its Health and Safety Plan (HASP) that meets or exceeds applicable Cal/OSHA regulations. The Contractor's HASP shall also meet or exceed the requirements of any applicable City-wide or departmental specific Injury and Illness Prevention Programs (IIPP) and other HASP programs, procedures, and plans. Potentially applicable HASP programs, procedures, and plans include, but are not limited to, the following:

1. Bloodborne Pathogens Exposure Control Plan;
2. Confined Space Entry Procedure;
3. Electrical Safety Program (Lockout/Tagout);
4. Emergency Action Plans (Site Specific);
5. Fire Prevention Plans (Site Specific);
6. Hazardous Waste Operations Emergency Response Plan (or Equivalent);
7. Hazard Communication Program (SDS's and Right-to-Know training);
8. Heat Illness & Prevention Plan;
9. Hearing Conservation Program;
10. Hot Work/Welding Procedure;
11. Job Hazard Analyses/Standard Operating Procedures;
12. Traffic Control & Flagging;
13. Excavation/Dig Safe Procedure;
14. Fall Protection Plan;
15. Personal Protective Equipment Plan;
16. Respirable Crystalline Silica Exposure Control Plan;
17. Respirator Program;
18. Soils Management Plan (for contaminated soils); and

19. Transite (Asbestos) Pipe Work Procedure.

Additionally, Contractor shall be responsible for complying with all City-wide and departmental specific safety requirements as identified in the Supplemental Conditions or presented at a pre-construction meeting.

Contractor shall inform City in advance of the quantity of chemical(s) to be used for the project and the total quantity of chemical(s) that will be brought onto City property. In addition, Contractor shall provide City with one copy of the Safety Data Sheet (SDS) for each chemical expected to be used to complete the project and for each chemical brought to the Work Site, regardless of whether such chemicals are ultimately used for the project.

The services of the Director in conducting construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's Work methods, equipment, bracing or scaffolding, or safety measures, in, on, or near the construction site. If a City employee observes a safety violation, the City employee will report the violation to the Contractor who is then responsible for assuring the violation is abated.

The Contractor is hereby informed that Work on this project could be hazardous. The Contractor shall carefully instruct all personnel working in potentially hazardous Work areas as to potential dangers and shall provide such necessary safety equipment and instructions as are necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to Work underground.

All Work and materials shall be in strict accordance with all applicable State, City, County, and Federal Rules, Regulations, and Codes, and attention is drawn to the requirements of Cal/OSHA. The Contractor shall be solely responsible for compliance with all City, County and State blasting requirements and for any damages caused by its operations.

To ensure compliance with California Labor Code Section 6705, the Contractor shall submit to the City, at least five (5) Days in advance of excavation of any trench five feet (5') or more in depth, Working Drawings to the Director showing the design of shoring, bracing, sloping and other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such Working Drawings vary from the shoring system standards established by the Cal/OSHA Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared and signed by a registered civil or structural engineer in the State of California. This in no way relieves the Contractor from the requirement of maintaining safety in all operations performed by the Contractor or the Contractor's Subcontractors and nothing in this section shall be deemed to allow the use of a shoring, sloping or protective system less effective than that required by the Cal/OSHA Construction Safety Orders of the Division of Industrial Safety Contractor's Working Drawings shall be subject to approval insofar as the details affect the character of the finished Work and for compliance with design requirements applicable to the construction when specified or called for, but details of the design will be left to Contractor who shall be responsible for the successful construction of the Work. The City shall approve Working Drawings before any Work involving such drawings is performed. Approval and/or acceptance by the City or its designated agent only constitutes acknowledgment of the submission and does not constitute review or approval of the designs, design assumptions or criteria, completeness of submissions, applicability to areas of intended use, nor implementation of the plans, which are solely the responsibility of the Contractor and its registered engineer.

The Contractor shall perform its Work as not to expose personnel to, or to discharge into the atmosphere from any source whatever, smoke, dust, asbestos, toxic chemicals or other air

contaminants in violation of the laws, rules, and regulations of the governmental entities having jurisdiction and shall bear full and exclusive responsibility for any release of hazardous or non-hazardous chemicals or substances during the course of the Work. The Contractor shall immediately report any such release to the City. The Contractor shall be solely responsible for all claims and expenses associated with the response to, removal and remediation of the release, including, without limitation, payment of any fines or penalties levied against the City by any agency as a result of such release and shall defend, indemnify, and save and hold harmless the City, its officers, agents, employees, and volunteers from any claims arising from such release. For purposes of this section only, the term “claims” shall include:

1. All notices, orders, directives, administrative or judicial proceedings, fines, penalties, fees, or charges imposed by any governmental agency with jurisdiction; and
2. Any claim, cause of action, or administrative or judicial proceeding brought against the City, its officers, agents, employees, and volunteers for any loss, cost (including reasonable attorneys’ fees), damage or liability, sustained or suffered by any person or entity, including the City.

If the performance of the Work creates any hazardous wastes, those wastes shall be properly disposed of according to federal, state, and local laws, at the expense of the Contractor. The Contractor shall dispose of the wastes under its own EPA Generator Number. In no event shall the City be identified as the generator. The Contractor shall notify the City of any such hazardous wastes and the City reserves the right to a copy of the results of any tests conducted on the wastes, and, at its cost, to perform additional tests or examine those wastes, prior to disposition. The Contractor shall defend, indemnify, and save and hold harmless the City, its

officers, agents, employees, and volunteers from any claims arising from the disposal of the hazardous wastes, regardless of the absence of negligence or other malfeasance by the Contractor. Disposal of all Hazardous Materials must be done in accordance with all laws and regulations. Copies of required regulatory documentation including copies of final manifests shall be supplied to the City.

Contractors or Subcontractors removing one hundred or more square feet (100') of asbestos must be "Certified" in accordance with State law. All Work involving exposure to asbestos and all other hazardous materials shall be performed with protection of personnel in compliance with all applicable regulations and safety requirements including, but not limited to, California Code of Regulations Section 1529, Title 8.

Nothing in these General Conditions is to be construed to permit Work not conforming to governing codes. When Contract Documents differ from governing codes, the Contractor shall furnish and Install the higher standards called for without extra charge.

5-1.08            **SUBSURFACE EXCAVATIONS, NOTIFICATION.** The Contractor shall contact the regional notification center, "Underground Service Alert," and schedule its Work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities. Without limiting the foregoing, the Contractor's attention is directed to Government Code Sections 4216 to 4216.9, and in particular Section 4216.2.

5-1.09            **PUBLIC SAFETY.** The Contractor shall assume all responsibility for public safety during the performance of its Work, and all costs arising therefrom shall be included in the Contract Price. Whenever the Contractor's operations create a condition hazardous to traffic or to the public, it shall furnish, erect and maintain, at its expense, such fences, barricades, lights, signs, and other devices and take such other protective measures as are

necessary to prevent accidents or damage or injury to the public. The Contractor shall establish the pedestrian detours with comparable lighting to the original pedestrian areas. The Contractor shall arrange for such flaggers as are necessary to give adequate warning to traffic or to the public of any dangerous conditions affecting traffic. For Work in a public right-of-way, the Contractor shall comply with the rules and regulations of the State, County, or local agency that owns the right-of-way.

The Contractor shall promptly and fully comply with and carry out, and shall without separate charge therefor to the City, all safety and first aid requirements prescribed by all applicable Federal, State, and local laws and regulations, rules, and orders. The Work shall be done in a safe manner; and the Contractor shall safeguard the safety and health of its employees, Subcontractors, and the people of local communities. The Contractor shall also be reasonable for ensuring that its Subcontractors comply with the provisions of this section.

Upon the failure of the Contractor to comply with any of the requirements of this section, the City shall have the authority, but not the duty, to stop the Work until such failure is remedied. The Contractor shall not be entitled to an adjustment of the Contract Time or an increase in the Contract Price due to any such suspensions.

When required by the Contract Documents, the Contractor shall construct, maintain, and remove detours for use of public traffic, without additional cost to the City, unless separate payment is specified in the Special Provisions.

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

Due care shall be exercised to avoid injury to existing improvements or facilities, utility

facilities, adjacent property and trees, shrubs, and other plants that are not to be removed.

Trees, shrubs and other plants that are not to be removed, and pole lines, fences, signs, survey markers and monuments, buildings and structures, conduits, pipe lines, sewer and waterlines, highway facilities, and any other improvements or facilities, under or above ground, that are within or adjacent to the work limit line shall be protected from injury or damage, and the Contractor shall provide and Install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored at the Contractor's expense. The facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the Work Site, or as good as required by the Contract Documents if any such objects are part of the Work. The City may make or cause to be made such temporary repairs as are necessary to restore to service any damaged facility. The cost of such repairs shall be borne by the Contractor, and the costs may be deducted from any monies due or to become due to the Contractor under the Agreement.

The fact that any underground facilities is not shown on the Contract Drawings shall not relieve the Contractor of its responsibility pursuant to "Utility Facilities" in Section 2-1.12 elsewhere in the Contract Documents. It shall be the Contractor's responsibility, pursuant thereto, to ascertain the location of such underground improvements or facilities, which may be subject to damage by reason of its operations.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the Work involved in protecting or repairing property as specified in this section, shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

5-1.10            **EMERGENCIES.** In an Emergency affecting the safety of life, the

Work, or adjoining property, the Contractor, without special instructions or authorization from the City, shall act at its discretion to prevent such threatened loss or injury. In such an Emergency, the Contractor may perform such additional work as is reasonably required. Any compensation claimed by the Contractor on account of Work performed to an Emergency shall be determined in accordance with the provisions relating to Force Account payment contained elsewhere in the Contract Documents.

5-1.11        **APPRENTICES.** Attention is directed to Labor Code Sections 1777.5, 1777.6 and 1777.7 and Title 8, California Code of Regulations Section 200 et seq. In accordance with Section 1777.5, the Contractor shall secure the necessary certificates and shall contribute to the apprenticeship fund or funds, as provided therein. The Contractor shall require each Subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work to fully comply with Sections 1777.5 and 1777.6 of the Labor Code. To insure compliance and complete understanding of the law regarding apprentices, and specifically the required ratio thereunder, each Contractor or Subcontractor should, where some questions exist, contact the Division of Apprenticeship Standards, , or one of its branch offices prior to commencement of Work on the public works Contract. Responsibility for compliance with this section lies with the prime Contractor.

It is State and City policy to encourage the employment and training of apprentices on public works Contracts as may be permitted under local apprenticeship standards.

5-1.12        **FAIR LABOR STANDARDS ACT.** Attention is invited to the fact that the City has been advised by the Wage and Hour Division, U.S. Department of Labor, that Contractors engaged in construction Work are required to meet the provisions of the Fair Labor Standards Act of 1958 and as amended (52 Stat. 1060).

5-1.13            **WORKERS' COMPENSATION.** Pursuant to the requirements of Labor Code Section 1860, the Contractor will be required to secure the payment of workers' compensation to its employees in accordance with the provisions of Labor Code Section 3700.

Prior to the commencement of Work, the Contractor shall sign and file with the Director a certification in the following form:

“I am aware of the provisions of Labor Code Section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.”

5-1.14            **AIR POLLUTION CONTROL AND ASBESTOS.** The Contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any Work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Government Code Section 11017.

In the absence of any applicable air pollution control rules, regulations, ordinances or statutes governing solvents, all solvents, including but not limited to the solvent portions of paints, thinners, curing compounds, and liquid asphalt used on the project shall comply with the applicable material requirements of the applicable Air Quality Management District. All containers of solvent, paint, thinner, curing compound, or liquid asphalt shall be labeled to indicate that the contents fully comply with said requirements.

Unless otherwise provided in the Supplemental Conditions, material to be disposed of shall not be burned, either inside or outside the Premises.

The Contractor shall also comply with all rules, regulations, statutes and ordinances

regarding asbestos removal and disposal, including but not limited to, 42 U.S.C. Sections 7401, 7412 and 7601, 40 C.F.R. Part 61, Subpart M, and California Code of Regulations Section 1529, Title 8.

If the Contractor discovers that a building to be demolished or renovated contains asbestos containing material, the Contractor shall immediately cease Work and notify the City.

5-1.15            **USE OF PESTICIDES.** The Contractor shall comply with all local, state and federal rules and regulations of the Department of Food and Agriculture, the Department of Health, the Department of Industrial Relations and all other agencies which govern the use of pesticides required in the performance of the Work.

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

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

5-1.16            **SOUND AND LIGHT CONTROL REQUIREMENTS.** The Contractor shall comply with all local sound control, light control, and noise level rules, regulations and ordinances which apply to any Work performed pursuant to the Contract. Work shall not begin before 7 a.m. nor occur after 7 p.m., unless otherwise permitted by the City.

Each internal combustion engine, used for any purpose on the Work or related to the Work, shall be equipped with a muffler, in good working order, of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said

muffler.

5-1.17            **WEIGHT LIMITATIONS.** Unless expressly permitted elsewhere in the Contract Documents, the Contractor shall not operate construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limits set forth in Division 15 of the Vehicle Code over completed or existing base, surfacing, pavement or structures.

5-1.18            **ENVIRONMENTAL CLEARANCES; MITIGATION MONITORING PROGRAMS; AND REGULATORY AGENCY PERMIT REQUIREMENTS.** The Department will obtain all environmental clearances and other authorizations necessary for this project as set forth in the Contract Documents. The Contractor shall comply with the provisions, including giving notices during construction when required, of said authorizations. In the event the obtaining of said authorizations delays completion of all or any portion of the Work, an extension of time determined pursuant to the provisions in Section 6-1.08, “Liquidated Damages,” of these General Conditions will be granted.

Contractor shall comply with: (1) all mitigation identified in the mitigation monitoring program (attached to and adopted as a component of the mitigated negative declaration or Environmental Impact Report) to mitigate impacts to protected natural resources; and (2) all related permit requirements issued by the regulatory agencies authorizing the project. Contractor shall defend, indemnify, and save and hold harmless the City, its officers, agents, employees, and volunteers from any fines, claims, suits, actions or regulatory sanctions of every name, kind and description brought forth, or on account of, damage to protected natural resources from or arising out of Contractor’s negligence or willful misconduct in the performance of this Agreement.

5-1.19            **PERMITS AND LICENSES.** The Contractor acknowledges and agrees that, prior to the submission of its bid for the Work, it fully familiarized itself with the

requirements of all applicable federal, state, county and municipal laws, codes, rules, and regulations, as well as the conditions of any required licenses and permits.

The Contractor shall procure all permits and licenses, including any applicable building permits (except those procured or to be procured by the City which are listed elsewhere in the Contract Documents), in coordination with the Director, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Work. Contractor shall be responsible for applying, paying all fees, and coordination for obtaining all permits for completion of the Work. All permits and licenses shall be obtained in sufficient time to prevent delays to the Work. Contractor will apply to the City for reimbursement for such permits costs. Accordingly, Contractor should not include the anticipated costs for permits in its bid, as the necessary permit costs will be reimbursed by the City.

The California Environmental Quality Act (Public Resources Code, Section 21000 to 21177) may be applicable to permits, licenses and other authorizations which the Contractor must obtain from State or local agencies in connection with performing the Work. The Contractor shall comply with the provisions of that Act in obtaining such permits, licenses and other authorizations, and all permits, licenses and other authorizations shall be obtained in sufficient time to prevent delays to the Work.

The Contractor shall maintain the applicable Contractor's license as identified in the Notice to Contractors and City business license for the duration of the Work.

5-1.20            **WATER POLLUTION.** The Contractor shall comply with all water pollution control rules, regulations, ordinances and statutes which apply to any Work performed pursuant to the Contract, including any water pollution control rules, regulations, and statutes, specified by the most current State of California NPDES General Permit for Stormwater

## Discharges Associated with Construction Activity.

The Contractor shall take all necessary precaution to protect streams, vernal pools, ponds, reservoirs, and lakes from pollution with fuels, oils, bitumen, calcium chloride, and other harmful materials as consistent with the law. Also, the Contractor shall conduct and schedule operations so as to avoid discharging pollutants, such as but not limited to: sediment and silt to the storm drain system. The storm drain system consists of all facilities that are designed to convey stormwater to the Waters of the State as defined in the California Water Code. The storm drain system includes, but is not limited to, all streets, gutters, drain inlets, roadside ditches, streams, vernal pools, ponds, and lakes. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

5-1.21            **PROTECTION AND USE OF PROPERTY.** The Contractor shall be responsible for and provide and maintain all proper temporary walkways, covered walkways, barriers, roads, guards, railings, lights, warning signs, and take precaution at all times to avoid injury or damage to any person or any property, and upon completion of the Work, or at other times as directed, restore Premises and adjacent property to a proper condition. In the event of such injury or damage, Contractor shall report such injury and damage to City within forty-eight (48) hours of occurrence.

The Contractor shall protect adjoining property and nearby buildings, including City buildings, City roads, and public streets or roads, from dust, dirt, debris, or the nuisance arising out of the Contractor's operations or storage practices, and, if ordered by the Director, the Contractor shall provide and Install suitable safeguards, approved by the Director, to protect such objects from damage. If such objects are damaged by reason of the Contractor's operations, they shall be replaced or restored at the Contractor's expense.

If the Contractor damages any buildings, roads, utilities, or other property which belong to the City, or any Department or agency thereof, then the Director, at his or her option, may retain from the money due under the Contract an amount sufficient to insure repair of the damage.

The Director may make or cause to be made such temporary repairs as are necessary to restore to service any such damaged facility. The cost of such repairs shall be borne by the Contractor and may be deducted from any moneys due or to become due the Contractor under the Contract.

5-1.22            **RESPONSIBILITY FOR DAMAGE AND INDEMNIFICATION.**

The City of Roseville, its officers, agents, employees, and volunteers, including but not limited to the Director and his or her designee, shall not be answerable or accountable in any manner: for any loss or damage that may happen to the Work or any part thereof; for any loss or damage to any of the materials or other things used or employed in performing the Work; for injury to or death of any person, either workers or the public; or for damage to property from any cause which might have been prevented by the Contractor, its workers, or anyone employed by the Contractor or the Contractor's Subcontractors.

The Contractor shall be responsible for any liability imposed by law and for injuries to, or death of, any person including, but not limited to, workers and the public, or damage to property resulting from defects or obstructions, or from any cause whatsoever during the progress of the Work or at any time before its completion and final Acceptance.

To the fullest extent allowed by law, the Contractor shall defend (through counsel acceptable to the City), indemnify, and save and hold harmless the City, and its respective officers, agents, Subcontractors, employees, and volunteers, and the successors and assigns of

any of them, (hereinafter referred to as “Indemnitees”) from and against all claims, demands, liability, suits, actions, costs or expenses for any and all loss or damage, including but not limited to, personal injury, property damage, or economic loss, arising out of or resulting from allegations of (1) Contractor’s use of the City’s property or any activities or Work performed hereunder by the Contractor; (2) the Contractor’s performance of the Work under the Agreement; or (3) the Contractor’s breach of any provision of the Agreement. The duty of the Contractor to indemnify and save harmless includes the duties to defend as set forth in Civil Code Section 2778. The only exception to these provisions is that the Contractor’s obligations under this section will not apply to the extent that the claims, demands, liability, suits, actions, costs or expenses are caused by Indemnitees’ active negligence, willful misconduct, criminal acts, or for defects in design furnished by the Indemnitees, misconduct, criminal acts, or for defects in design furnished by the Indemnitees.

The Contractor waives any and all rights to any type of express or implied indemnity against the City, its officers, agents, employees, or volunteers.

The Contractor’s responsibility for such defense and indemnity obligations shall survive the termination or completion of this Contract for the full period of time allowed by law. The defense and indemnity obligations of this Contract are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Contract. The parties intend that the defense and indemnity obligations in this Contract shall be broadly construed.

Any person, firm or corporation that Contractor authorizes to Work on the City’s property including Subcontractors, shall be deemed to be an agent of the Contractor for purposes herein, shall be subject to all the applicable terms herein, and shall be within the scope of the Contractor’s indemnity obligation described herein.

In addition to any remedy authorized by law, so much of the money due the Contractor under and by virtue of the Contract as shall be considered necessary by the Department may be retained by the City until disposition has been made of such suits or claims for damages.

The retention of money due the Contractor shall be subject to the following:

A. The City will give the Contractor thirty (30) Days' notice of its intention to retain funds from any partial payment which may become due to the Contractor prior to Acceptance of the Contract. Retention of funds from any payment made after Acceptance of the Contract may be made without such prior notice to the Contractor.

B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 7-1.07, "Progress Payments," of these General Conditions.

C. If the City has retained funds and it is subsequently determined that the City is not entitled to be indemnified and saved harmless by the Contractor in connection with matter for which such retention was made, the Department shall be liable for interest on the amount retained at the legal rate of interest for the period of such retention.

5-1.23        **INSURANCE COVERAGE.**

A. Evidence of Maintenance Required. The Contractor shall, at its expense, procure and at all times maintain in full force and effect at a minimum the insurance required by this section on all of its operations; and the Contractor shall not allow any Subcontractor to commence work until similar insurance required of the Subcontractor has been obtained and filed. An original Certificate of Insurance, and copies of all required endorsements, all in a form approved by the Risk Manager, evidencing all required coverage or policies shall be filed after the award of the bid and prior to approval of the Contract by the City Council. Contractor shall

provide ten (10) days prior written notice to the City of any reduction of coverage limits or cancellation of the coverage or policies shall be given to the City of Roseville as Certificate holder.

B. Qualifying Insurers. With the exception of the State Compensation Insurance Fund, all required insurance policies shall be issued by companies acceptable to the City and licensed to do business in the State of California and who hold a current policy holders alphabetic and financial size category rating of not less than AVII according to the most recent issue of Best's Insurance Reports.

C. Insurance Required.

1. Commercial General Liability (CGL): Insurance Services Office Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations with limits of no less than Two Million Dollars (\$2,000,000) per occurrence for bodily injury, personal injury and property damage for projects under One Million Dollars (\$1,000,000) and limits of no less than Five Million Dollars (\$5,000,000) per occurrence for bodily injury, personal injury and property damage for projects over One Million Dollars (\$1,000,000). If a general aggregate limit applies, either the aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit.

The Commercial General Liability insurance shall include the following, copies of which shall be provided:

a. Inclusion of the City of Roseville, and its officers, agents, employees, and volunteers, as additional insureds (except for workers’ compensation) as respects services or operations under the Contract. The additional insured endorsement for the general liability policy shall be at least as broad as the ISO CG 2010 10 01 combined with ISO CGL

Endorsement CG 2037 10 01. Any other endorsement must be approved in writing by the City. Endorsements must include coverage for on-going and completed operations, which coverage shall be maintained for four (4) years following completion of the Project. Endorsements shall cover the City of Roseville, its officers, agents, employees, and volunteers.

b. The insurance shall provide coverage for claims by one insured against another insured and the policies shall not contain any cross-suits exclusions, cross-liability exclusions, or insured versus insured exclusions. The policies shall not contain any classification exclusions purporting to deny coverage for any work to be performed by Contractor or any of its Subcontractors.

c. Stipulation that the insurance is primary and noncontributory, as evidenced by a separate endorsement (CG 20 01 04 13 or an equivalent) or section of the policy, and that neither the City nor its insurers will be called upon to contribute to a loss.

d. Such insurance shall specifically cover the contractual liability of the Contractor.

e. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

f. Waiver of subrogation endorsement.

g. The Contractor shall furnish a certificate for the period covered.

2. Automobile Liability: Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), or if Contractor has no owned autos, Code 8 (hired) and Code 9

(non-owned), with limits of no less than One Million Dollars (\$1,000,000) per accident for bodily injury and property damage.

3. Workers' Compensation: In accordance with the provisions of the California Labor Code, Contractor is required to be insured against liability for Workers' Compensation or to undertake self-insurance. Statutory Workers' Compensation and Employers' Liability of at least One Million Dollars (\$1,000,000) shall cover all Contractors staff while performing any work incidental to the performance of this Agreement.

4. Professional Liability: Professional Liability (Errors and Omission) Insurance appropriate to Contractor's profession, with a limit of liability not less than One Million Dollars (\$1,000,000) per occurrence or claim and Two Million Dollars (\$2,000,000) aggregate to cover all design and engineering services rendered by Contractor pursuant to the Agreement. Coverage must commence from the first day that Contractor or any of its Subcontractors provided any design or engineering services in connection with the Project.

5. Builder's Risk/Course of Construction Insurance (If Required by Risk Management): The Contractor shall be responsible for all loss, damage or destruction whatsoever to the work called for by this Contract until the approval of a Notice of Completion or acceptance of the Work if no Notice of Completion is to be recorded.

The Contractor shall secure "All Risk" type of builder's Risk Insurance of the type covering one hundred percent (100%) of the value of the work performed under this Contract (the value is presumed to be the Contract amount unless otherwise stated in Supplemental Conditions) and all materials, equipment, or other items to be incorporated therein while the same are located at the construction site, a bonded warehouse, or its place of manufacture. At any time, the policy shall cover the value of the work completed. The policy shall cover hazards

including the losses due to fire, explosion, hail, rain, lightning, flood (separate insurance as needed), vandalism, malicious mischief, wind, collapse, aircraft, and smoke.

The policies providing such insurance shall name the City as a loss payee as its respective interests may appear, and certified copies of such policies shall be filed with the City. The maximum deductible allowable under the Builder's All Risk policy shall be five percent (5%) of the Contract amount.

Builder's Risk Insurance is not required for coverage of losses in excess of five percent (5%) of the Contract amount for damages resulting from earthquake in excess of a magnitude of 3.5 on the Richter scale, or tidal waves. Coverage in the amount of five percent (5%) of the Contract amount for such losses is required.

6. Pollution Coverage: Contractor shall procure pollution liability coverage or other insurance covering claims for bodily injury or property damage arising out of the abatement, removal, storage, transportation, or other exposure to hazardous materials or pollutants, in limits not less than Two Million Dollars (\$2,000,000). Contractor shall add the City and all parties required to be indemnified by Contractor as additional insured on all pollution liability policies.

7. Higher Coverage Limits: If Contractor maintains higher coverage limits than the amounts shown above, then the City requires and shall be entitled to coverage for the higher coverage limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

8. Claims Made Coverage: Liability insurance coverage may not be written on a "claims made" or modified occurrence basis. The Certificate of Insurance must clearly provide that the coverage is on an "occurrence" basis.

5-1.24            **OTHER INSURANCE PROVISIONS.**

A.        The requirements of the Standard Specifications as to types and limits of insurance coverage to be maintained by the Contractor, and any approval of insurance by the City, are not intended to, and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to the Contract, including, but not limited to, the provisions concerning indemnification, nor preclude the City from taking any other action available to it under any other provision of the Contract or law.

B.        The City acknowledges that some insurance requirements contained in these Standard Specifications may be fulfilled by self-insurance on the part of the Contractor. However, this shall not in any way limit liabilities assumed by Contractor under the Contract. Any self-insurance must be approved in writing by the City, in its sole discretion and shall not reduce the limits of liability. Any deductibles or self-insured retentions (“SIR”) must be declared on the certificate of insurance and approved by City in writing. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

C.        The Contractor agrees to include in its contracts with all subcontractors the same requirements and provisions of this Contract, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor’s work. Furthermore, the Contractor shall require its subcontractors to agree to be bound to the Contractor and the City in the same manner and to the same extent as the Contractor is bound to the City under this Contract. Additionally, the Contractor shall obligate its subcontractors to comply with these

same provisions with respect to any tertiary subcontractor, regardless of tier. A copy of the City's indemnity and insurance provisions will be furnished to the subcontractor or tertiary subcontractor upon request. Alternatively, the Contractor may insure subcontractor(s) under its own policy.

D. The City, its officers, agents, employees, and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. Coverage shall 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 California Insurance Code Section 11580.04.

E. The limits of insurance required in this Contract may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of the City (if agreed to in a written contract) before the City's own insurance shall be called upon to protect it as a named insured.

F. The insurance procured by Contractor shall be subject to the approval of the City, but any acceptance of insurance certificates by the City shall in no way limit or relieve Contractor of its duties and responsibilities under the Agreement.

G. Contractor shall be responsible for all premiums, deductibles, and self-insured retention applicable to the insurance it is required to procure under the Contract. All deductibles or self-insured retentions over five hundred thousand dollars (\$500,000) must be approved by the City, in writing. Contractor shall be responsible for all deductibles, self-insured

retention payments, and/or increased premiums incurred if the City's policies of insurance are forced to cover damages or respond to claims for which Contractor or its Subcontractors were obligated to provide insurance under the Contract.

H. Failure of the City to enforce in a timely manner any of the requirements of these insurance provisions shall not act as a waiver to enforcement of any of these provisions at a later date.

I. Contractor's indemnity obligations shall not be limited by these insurance provisions and shall survive the expiration of the Contract and the insurance provisions of the Contract shall likewise not be limited by the indemnity provisions of the Contract.

J. THE CITY RESERVES THE RIGHT TO WITHHOLD ANY PROGRESS PAYMENTS TO THE CONTRACTOR IN THE EVENT OF NONCOMPLIANCE WITH ANY INSURANCE REQUIREMENTS.

5-1.25 **THIRD PARTY BENEFICIARY.** No provisions in the Contract Documents shall in any way inure to the benefit any third party (including the public at large or any member thereof) so as to constitute such person a third party beneficiary of the Contract, or of any term or condition or other provision of the Contract or otherwise give rise to any cause of action in any person not a party to the Agreement, except as expressly provided elsewhere in the Contract Documents.

5-1.26 **COORDINATION AND ACCESS.** The Contractor acknowledges that the City may award, or has already awarded, other construction contracts for additional work or may perform additional work with its own forces and that such work may affect the Work under this Agreement. Additionally, the Contractor acknowledges that the State and other public and private agencies may be granted a right-of-entry by the City for the purpose of constructing

facilities within and adjacent to the Work Site. It is the obligation of the Contractor to coordinate its Work with the work of others working within or adjacent to the City's property.

During performance of its Work, the Contractor shall not have exclusive access to or use of the work areas. The City may also require that certain facilities and areas be used concurrently by the Contractor and by other contractors working in the area. When two (2) or more contractors are employed on related or adjacent City work, each shall conduct its operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to any work, to persons or property caused to the other by its operations, and for loss caused the other due to any unnecessary delays or failure to finish the work within the time specified for completion.

If any party of the Contractor's Work depends on the work of any other contractor and/or the City for proper execution and/or results, the Contractor shall promptly notify the City of any discrepancies and/or defects in said other work that would render its work unsuitable for proper execution and/or results prior to proceeding with the Contractor's own Work. If it becomes necessary, the City will resolve coordination and access problems.

The Contractor and its representative in charge of the Work shall familiarize themselves with the City's property and Work Site, and adjacent surroundings in the vicinity of said Work, and any private or public operations on adjoining properties.

5-1.27            **OCCUPANCY BY THE DEPARTMENT PRIOR TO**

**ACCEPTANCE.** The City may at any time notify the Contractor in writing that it intends to take Beneficial Occupancy of any portion of the Work even though the Work may not be substantially complete. Unless the reason for the City's taking Beneficial Occupancy is that the Contractor has not completed the Work (or portions thereof) in accordance with the Contract

Time, the City's Beneficial Occupancy shall relieve the Contractor from its responsibility for maintenance, loss or damage to that portion of the Work for which the City has taken Beneficial Occupancy other than that resulting from the Contractor's act or omission, negligence, willful misconduct or breach of warranty.

Should the Work (or portion thereof) not be completed in accordance with the Construction Schedule within the Contract Time (as adjusted under the terms of the Contract Documents), the City shall have the right, but not the obligation, to take Beneficial Occupancy of the Work. In such event, the Contractor shall not be entitled to any additional compensation on account of said occupancy by the City, nor shall the Contractor be relieved of any of its responsibilities under the Contract Documents, including, without limitation, Contractor's obligation to complete the Work in accordance with the Construction Schedule.

Beneficial Occupancy shall not be deemed an Acceptance by the City either of the Work or of any portion thereof, nor will it relieve the Contractor of full responsibility for correcting defective Work or materials found at any time before the formal written Acceptance of the entire Contract by the Director or during the full warranty period after such Acceptance, as provided in Section 7-1.12, "Warranty," of these General Conditions.

The City's Beneficial Occupancy shall not relieve the Contractor of its responsibility to maintain all insurance and bonds required under the Contract Documents until the entire project is accepted by the City.

5-1.28            **RIGHT TO OPERATE UNSATISFACTORY FACILITIES AND EQUIPMENT.** If, after Installation, the operation or use of the facilities or equipment to be furnished under this Contract proves to be unsatisfactory to the Director, the City shall have the right to operate and use such facilities or equipment until they can, without damage to the City,

be taken out of service for correction or replacement. Such period of use of the defective facilities or equipment, pending correction or replacement, shall in no way decrease the warranty period required for the acceptable corrected or replaced facilities or equipment.

5-1.29            **CONTRACTOR'S RESPONSIBILITY FOR THE WORK.** Except as otherwise provided herein, the Contractor shall have the charge and care of the Work and shall bear the risk of injury or damage to any part of the Work by the action of the elements or from any other cause whether arising from the execution or from the nonexecution of the Work until the Acceptance of the Contract by the Director. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the Work occasioned by any cause before its completion and Acceptance, and shall bear the expense thereof. In case of suspension of Work from any cause whatever, the Contractor shall be responsible for the Work and it shall also be responsible for all materials, and shall properly store them if necessary, and shall provide suitable drainage and erect temporary structures where necessary.

The Contractor will be relieved of responsibility for any injury or damage to the Work caused by the following:

- A.     An earthquake in excess of a magnitude of 3.5 on the Richter Scale or a tidal wave, when the effect of such has been proclaimed a disaster or state of emergency by the Governor of the State of California or by the President of the United States, or was of such magnitude at the site of the Work as to have been sufficient to have caused a proclamation of disaster or state of emergency, had it occurred in a populated area.
- B.     Occupancy and use by the Department or the public prior to the completion of the entire project.
- C.     Acts of the Federal Government or the public enemy.

5-1.30            **RESPONSIBILITY FOR UTILITIES.** The Contractor shall be responsible at its own cost for any and all Work, expense or special precautions caused or required by the existence or proximity of utilities encountered in performing the Work, including without limitation, repair of any or all damage and all hand or exploratory excavation required. The Contractor is cautioned that such utilities may include communication cables or electrical cables which may be high voltage, and when working or excavating in the vicinity of such cables, or the ducts enclosing such cables, the Contractor shall undertake at its own cost any special precautions required. Suitable warning signs, barricades, and safety devices shall be erected as necessary or required.

However, if during the course of the Work the Contractor encounters utility Installations which are not shown or indicated in the Contract Documents or which are found in a location substantially different from that shown, and such utilities are not reasonably apparent from visual examination, then the Contractor shall promptly notify the Director in writing. Where necessary for the Work of the Contract, the Director shall issue a written order to the Contractor to make such adjustments, rearrangement, repair, removal, alteration, or special handling of such utility, including repair of the damaged utility. The Contractor shall perform the Work described in such written order, and compensation therefor will be made in accordance with Section 3 of these General Conditions relating to changes in the Work. Except for the items of cost specified in said Section 3, the Contractor shall receive no compensation for any other cost, damage, delay, interference, or hindrance to him or her due to the presence of such utility. If the Contractor fails to give the notice specified above and thereafter acts without instructions for the Director, then the Contractor shall be liable for any or subsequent to discovery thereof, and the Contractor shall repair and make good such damage at its own cost.

The precise location of underground facilities can only be determined by careful probing or hand digging in compliance with Article 6 of the Cal/OSHA Construction Safety Orders which states in part:

“Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., sewer, water, fuel, electric lines, etc., will be encountered, and if so, where such underground installations are located. When the excavation approaches the approximate location of such an installation, the exact location shall be determined by careful probing or hand digging, and, when it is uncovered, adequate protection shall be provided for the existing installation.”

The location of known existing utilities and pipelines are shown on the Contract Drawings in their approximate locations. Some of the locations include multiple conduits. The Contractor shall exercise care in avoiding damage to those facilities which are to remain in service subsequent to the construction of the particular new facility involved and the Contractor will be held responsible for any repairs if damaged. The Contractor shall also exercise care in maintaining those pipes and facilities required for continuing operation of the existing facilities until such time as they can be abandoned. There is no guarantee that all utilities or obstructions are shown on the Contract Drawings or that the locations indicated are accurate.

The Contractor shall exercise extreme caution in working in the area adjacent to the existing pipelines and utility services. It is essential that all the existing facilities be maintained in service. Construction of the connections between the existing facilities and the new facilities shall be at times and during periods acceptable to the City. The Contractor shall advise the Director in writing of its proposed Construction Schedule for these connections at least forty-eight (48) hours in advance.

The Contractor shall uncover all piping and conduits, to a point one foot (1') below the pipe, where crossings, interferences, or connections are shown on the Contract Drawings, prior to trenching or excavating for any pipe or structures, to determine actual elevations. New pipelines shall be laid to such grade as to clear all existing facilities which are to remain in service. If the Contractor does not expose all required utilities, it shall not be entitled to additional compensation for Work necessary to avoid interferences nor for repair to damaged utilities. Excavations around underground electrical ducts and conduits shall be performed using extreme caution to prevent injury or damage to workers and to the electrical ducts or conduits.

5-1.31        **PROPERTY RIGHTS IN MATERIALS.** Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the Work or soil or after partial payment has been made as provided in Section 7-1.07, "Progress Payments," of these General Conditions for material delivered on the ground or stored subject to or under the control of the City and unused. All such material shall become the property of the City upon being so attached or affixed or upon payment for materials delivered on the ground or stored subject to or under the control of the City and unused, as provided in said Section 7-1.07.

5-1.32        **COURT ORDERED DELAY.** If, pursuant to court order, the Department temporarily suspends performance of all or any portion of the Work, an extension of time determined pursuant to the provisions in Section 6-1.08, "Liquidated Damages," of these General Conditions will be granted.

5-1.33        **NO PERSONAL LIABILITY.** Neither the Director, nor any other officer or authorized employee of the City, shall be personally responsible for any liability arising under or by virtue of the Contract.

5-1.34            **RIGHTS IN LAND AND IMPROVEMENTS.** The Contractor shall make no arrangements with any person or entity to permit occupancy or use of any land, structure or building within the limits of the Work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the City and any third party owner, former owner, or tenant of such land, structure or buildings. The Contractor shall not occupy City-owned property outside the limit of the Work shown on the Contract Drawings unless it obtains prior approval.

5-1.35            **ANTITRUST CLAIMS.** The Contractor's attention is directed to the following provision of Public Contract Code Section 7103.5(b), which is applicable to the Contractor and its Subcontractors:

“ In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 [commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgement by the parties.”

5-1.36            **RIGHTS TO DRAWINGS, TECHNICAL DATA PATENTS.** Shop

Drawings and Working Drawings submitted to the City by the Contractor, Subcontractor or any lower tier Subcontractor pursuant to the Agreement, are the property of the City and the City may use, and disclose in any manner and for any purpose, Shop Drawings and Working Drawings delivered under the Contract.

Technical Data including manuals or instructional materials, computer or microprocessor software which are delivered or submitted to the City by the Contractor, Subcontractor, or any lower tier Subcontract pursuant to the Contract are the property of the City, and the City may use or disclose same in any manner and for any purpose.

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the Work, and shall defend, indemnify and save and hold harmless the City, and its duly authorized representatives, from all suits at law, or in equity, and actions of every nature for, or on account of the use of any patented materials, equipment, devices or processes. In case some materials, equipment, devices or processes are held to constitute an infringement and their use enjoined, the Contractor, at its expense, shall:

1. Secure for the City the right to continue using said materials, equipment, devices or processes by suspension of the injunction or by procuring a license or licenses; or
2. Replace such materials, equipment, devices, processes; or
3. Modify them so that they become non-infringing or remove the enjoined materials, equipment, devices or processes and refund the sums paid therefor without prejudice to any other rights of the City.

5-1.37            **PAYMENT OF TAXES.** Contractor shall pay all taxes and duties applicable to and assessable against any Work, equipment, materials, services, processes, and

operations incidental to or involved in the Agreement, including but not limited to, retail sales and use, transportation, export, import, business, and special taxes. The Contractor is responsible for ascertaining and acquainting itself with such taxes and making all necessary arrangements to pay them. The Contractor will maintain records that are auditable records, and these records shall be subject to the City's review to verify that Contractor's tax payments are current at all times.

The Contract Price paid for the Work shall include full compensation for all taxes which the Contractor is required to pay, whether imposed by Federal, State or local government, including, without being limited to, Federal excise tax. No tax exemption certificate nor any document designed to exempt the Contractor from payment of any tax will be furnished to the Contractor by the Department, as to any tax on labor, services, materials, transportation, or any other items furnished pursuant to the Contract.

The Contractor shall withhold and pay any and all sales and use taxes, withholding taxes, whether Federal, State, or local, Social Security taxes, State Unemployment Insurance charges and all other taxes which are now or hereafter may be required to be paid or withheld under any laws.

5-1.38            **GRATUITIES AND CONFLICT OF INTEREST.** The Contractor shall not offer or provide gratuities in the form of gifts, entertainment, loans, meals, rewards, and/or services to representatives of the City, including but not limited to, officers, employees, agents, Engineering Service Consultants, Consulting Engineers and Architects, Inspectors and/or Testing Agencies retained by the City. If it is found that the Contractor has violated this provision, the Contract may be subject to termination for default as defined elsewhere in these General Conditions.

During the term of the Contract and until the final payment has been made to the Contractor, the Contractor shall not employ or compensate in any manner whatsoever, the City's officers, employees and authorized representatives, agents, and any Engineering Service Consultants, Consulting Engineers and Architects, Inspectors, and/or Testing Agencies retained by the City. Any exception to the employment or compensation to any of the above named parties must be made in writing by the City. If the Contractor offers or provides employment or compensation to those named above during the term of the Contract, the Contract may be subject to termination for default.

5-1.39        **COOPERATION.** Should construction be under way by City forces or other forces or by other Contractors within or adjacent to the limits of the Work or should Work of any other nature be under way by such forces within or adjacent to said limits, the Contractor shall cooperate with all such forces to the end that any delay, interference or hindrance to their Work will be avoided. The right is reserved to perform other or additional Work at or near the site at any time, by the use of such forces.

5-1.40        **DIGGING TRENCHES OR OTHER EXCAVATIONS.** In the event any work involves digging trenches or other excavations that extend deeper than four feet (4') below the surface, City and Contractor shall comply with the following:

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

1.        Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

2. Subsurface or latent physical conditions at the site differing from those made available to Contractor for inspection as provided in the project proposal.

3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract.

B. The City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work shall issue a Change Order under the procedures described in the Contract.

C. In the event that a dispute arises between the City and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties. However, no claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required by this Section. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

5-1.41 **CONTRACTOR REGISTRATION.** No contractor or subcontractor may work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. During the performance of this Contract, the Contractor and its subcontractors shall have a continuing legal obligation to maintain current

registration with the Department of Industrial Relations. The Contractor is hereby notified that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

5-1.42            **CITY OF ROSEVILLE ENCROACHMENT PERMITS AND RIGHTS-OF-WAY.** The Contractor need not obtain a separate encroachment permit from the City prior to construction within street rights-of-way or other City rights-of-way. Execution of the Contract by the City shall be deemed an encroachment permit for work required by the Contract within rights-of-way. All work shall conform to the rules and regulations of encroachment permits and shall be subject to the inspection and approval of the Director and City Engineer.

To the extent indicated in the Contract Drawings, the City will provide the rights-of-way over private lands or the site to enable the Contractor to perform its work. The Contractor shall be solely responsible for securing any additional rights-of-way desired by the Contractor. The City will not be a party to nor assume any liability for any separate agreements reached between the Contractor and any third parties with respect to these additional rights-of-way. The Contractor shall procure evidence that agreements are in place with said third parties before the Contractor uses those areas covered by the agreements. Any damage to such private lands caused by the Contractor's operations shall be the sole responsibility of the Contractor.

## SECTION 6

### PROSECUTION AND PROGRESS

6-1.01        **SUBLETTING AND SUBCONTRACTING.** The Contractor shall be responsible for all Work performed under the Contract. The Contractor shall give its personal attention to the fulfillment of the Contract and shall keep the Work under its control. Nothing in the Contract Documents shall create any contractual relationship between the City and any Subcontractor. The Contractor is fully responsible to the City for the acts and omissions of its Subcontractors of any tier. When any Subcontractor fails to prosecute a portion of the Work in a manner satisfactory to the Director, that Subcontractor shall not again be employed on the Work. Although the sections of the Contract may be arranged according to various trades, or general grouping of the Work, the Contractor is not obligated to sublet the Work in such manner. The Director will not arbitrate disputes among Subcontractors or between Contractor and one or more Subcontractors concerning responsibility for performing any part of the Work.

The on-site production of materials produced by other than the Contractor's own forces shall be considered as subcontracted. The erection, establishment or reopening of on-site plants for production of materials and the operation thereof in the production of materials for use on the Work shall conform to the requirements relating to labor set forth in the Contract Documents.

The Contractor shall also be responsible for coordinating the Work performed by Subcontractors and Suppliers.

The Contractor shall not substitute any person as Subcontractor in place of a Subcontractor listed on its bid proposal without the written approval of the Director. Substitutions must be in accordance with the provisions of the "Subletting and Subcontracting

Fair Practices Act” beginning with Public Contract Code Section 4100. Violations of this Act by the Contractor may subject it to penalties which may include cancellation of Contract, Assessment of ten percent (10%) of the Subcontractor's bid, and disciplinary action by the Contractors State License Board.

The Contractor shall pay any Subcontractors approved by the City for work that has been satisfactorily performed no later than seven (7) Days from the date of Contractor’s receipt of progress payments by the City. Within seven (7) Days after receipt from the City of funds attributable to work performed by a Subcontractor, Contractor shall release any retainage payments withheld to the Subcontractor. In the event Contractor does not make progress payments or release retention to Subcontractors in accordance with the time period specified herein, Contractor may be subject to prompt payment penalties per statute.

6-1.02        **ASSIGNMENT.** The performance of this Contract may not be assigned, except upon the written consent of the City Council of the City of Roseville. Consent will not be given to any proposed assignment which would relieve the original Contractor or its surety of their responsibilities under the Contract nor will the City consent to any assignment of a part of the Work under the Contract.

The Contractor may assign moneys due or to become due to it under the Contract and such assignment will be recognized by the City, if given proper notice thereof, to the extent permitted by law, but any assignment of moneys shall be subject to all proper set-offs in favor of the City and to all deductions provided for in the Contract and particularly all money withheld, whether assigned or not, shall be subject to being used by the City for the completion of the Work in the event that the Contractor should be in default therein.

6-1.03        **BEGINNING OF WORK.** After the execution of the Contract by both

parties, the City will issue the Notice to Proceed upon its determination that it is appropriate for the Contract Time to commence.

The Contractor shall begin Work within fifteen (15) Days after receiving the Notice to Proceed from the Director, subject to the requirements stated elsewhere in the Contract Documents regarding, among other things, the submittal of Baseline Schedule, and shall diligently prosecute the same to completion within the time limit provided in the Supplemental Conditions. Contractor shall also achieve any and all Contract milestones as described elsewhere in the Contract Documents.

The Contractor shall notify the Director, in writing, of its intent to begin Work at least seventy-two (72) hours before Work is begun. The notice shall be delivered to the Director and shall specify the date the Contractor intends to start. If the project has more than one (1) location of Work, a separate notice shall be given for each location.

The Contractor is not authorized to perform any Work until it has received a Notice to Proceed from the City. 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 the said date of approval shall be considered as having been done by the Contractor at its own risk and as a volunteer unless said Contract is so approved thereafter.

6-1.04            **PROGRESS SCHEDULE.**

A.     Preliminary Progress Schedule. The Contractor shall submit to the Director, within twenty (20) Days after date of the Notice to Proceed, a Preliminary Progress Schedule covering the Contractor's activities over the first three (3) months of operation in detail and the remainder of the project in summary. The Preliminary Progress Schedule shall schedule the project within the Contract Time for completion of the Work, and shall be subject to

favorable review by the Director.

B. CPM Schedule. The Contractor shall submit an acceptable Critical Path Method (CPM) Schedule to the Director within thirty (30) Days after the receipt of the Notice to Proceed. Subsequent revisions to said schedule shall be submitted as set forth hereinafter. The requirement for the CPM schedule is included to allow for adequate planning and execution of the Work, to determine the critical nature of delays, and to assist the Director in appraising the reasonableness of the proposed schedule and evaluating progress of the Work. The CPM schedule submitted under this Section shall utilize a CPM format, either the precedence or arrow diagramming method. The definitions of CPM terms and functions shall be as provided in the Associated General Contractors of America book *CPM in Construction, A Manual for General Contractors*, or a favorably reviewed alternative publication or reference. No progress payment will be made prior to submission and acceptance of the CPM Schedule.

1. The CPM schedule system shall consist of diagrams and accompanying mathematical analyses. The diagrams shall show elements of the project in detail and an entire project summary. Diagrams shall show the order and interdependence of activities and sequence in which the Work is to be accomplished as planned by the Contractor. The basic concept of a network analysis diagram shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities. Detailed network activities shall include, in addition to construction activities, the submittal and favorable review of samples of material and Shop Drawings, the procurement of critical materials and equipment, fabrication of special material and equipment, and their Installation and testing. All activities of the City and the Director that affect progress and required Contract dates for completion of all or parts of the Work shall be shown. The

selection and number of activities shall be subject to favorable review by the Director. Summary networks shall be time scaled. Durations shall be in Days and shall not exceed fifteen (15) Days, except for submittal and delivery items. Where the duration of continuous Work exceeds fifteen (15) Days, Work items in the Construction Schedule shall be subdivided by location, approximate stationing or other sub-element of the Work.

The graphic network diagram shall include for each activity, the description, activity number, the estimated duration in Days, and all activity relationship lines. The network diagram shall be drawn for the early start of activities. All significant Submittals shall be scheduled along with manual Submittals and training on all large or critical pieces of equipment. If the precedence technique is utilized, the schedule project shall include a calendar in Work Days, a network report sorted by early start and a logic table report sorted by preceding Work item. If the arrow technique is utilized, the schedule report shall include a calendar in Work Days, a network report sorted by early start, a network report sorted by I-J numbers, and a network sorted by slack time and I-J numbers.

2. The critical path shall be shown on all reports and on the graphic network diagram. The activities which constitute the critical path shall be identified.

3. The mathematical analysis of the network diagram shall include a tabulation of each activity. The following information shall be furnished as a minimum for each activity:

- (a) preceding and following event numbers
- (b) activity description and number
- (c) estimated duration of activities
- (d) earliest start date (by calendar date)

- (e) earliest finish date (by calendar date)
- (f) actual start date (by calendar date)
- (g) actual finish date (by calendar date)
- (h) latest start date (by calendar date)
- (i) latest finish date (by calendar date)
- (j) slack or float
- (k) percentage of activity completed

4. The program shall be capable of accepting revised completion dates as modified by approved time adjustments and recomputations of all tabulation dates and float accordingly.

5. Submission and review of the system shall be as follows:

(a) The complete network analysis system, consisting of the detailed network mathematical analysis and network diagrams, shall be submitted within thirty (30) Days after receipt of the Notice to Proceed.

(b) The Contractor shall participate in a review and evaluation of the proposed network diagrams and analysis by the Director. Any revisions necessary as a result of this review shall be resubmitted for review by the Director within ten (10) Days. When completed, the favorably reviewed schedule shall then be the schedule to be used by the Contractor for planning, organizing and directing the Work and for reporting progress. If the Contractor thereafter desires to make significant changes in its method of operating and scheduling, the Contractor shall notify the Director in writing stating the reasons for the change.

(c) The Contractor shall submit at monthly intervals a report of the actual construction progress. Each monthly report shall cover a period of approximately thirty

(30) Days ending around the 20th of each month. The monthly reports shall be submitted within ten (10) Days of the end of the reporting period.

(1) If the project is proceeding on schedule, the monthly update report may consist of a marked-up copy of the graphical network diagram. This submittal shall clearly indicate the status of any minor shifts in sequence or schedule and the estimated completion date or percent complete of all activities currently in progress. The Contract completion date shall also be indicated. The Contractor shall submit a narrative report relating to status of construction, the schedule, and factors which may affect the remainder of the schedule. The report shall show the activities or portions of activities completed during the reporting period. The report shall state the percentage of the Work actually completed and scheduled as of the report date and the progress along the critical path in terms of Days ahead or behind the allowable dates.

(2) If, in the opinion of the Director, the project is behind schedule, the monthly report shall include a revised network diagram and/or mathematical analysis showing the Contractor's proposed revised schedule. An analysis of the effect that the delay has on progress along other paths shall also be included in the report. The Contractor shall also submit a narrative report with each updated analysis which shall include but not to be limited to a description of current and anticipated problem areas, delaying factors and their impact, and an explanation of corrective actions taken or proposed.

(3) Periodic report shall be submitted in sufficient copies to cover Contractor needs plus five (5) copies and an available electronic copy to be retained by the Director.

6. To the extent that the favorably reviewed initial Construction Schedule, or revisions thereto, indicate anything not jointly agreed upon, it shall be deemed to be not favorably reviewed by the Director. Any omission of Work from the detailed schedule, otherwise required for Contract compliance, will not excuse the Contractor from completing such Work within any applicable completion date. The CPM schedule shall be generated by computer methods.

C. Schedule Review. Once each month, on a date mutually agreed upon, but no later than seven (7) business days after the monthly schedule progress report date, a Work Site meeting will be held to review the Construction Schedule and job progress. The Contractor shall also attend weekly meetings scheduled by the Director to review the progress of the Work in the preceding week and in the subsequent week, coordinate the Work with public agencies or other Contractors as required, and allow the Director to plan his or her activities for testing, inspection, etc.

D. Schedule Revisions. The conditions under which the Director will require revisions of the Construction Schedule include the following:

1. When delay in completion of any Work item or sequence of Work items results in an estimated extension of project completion by either twenty (20) business days or by ten percent (10%) of the remaining duration of time to complete the Contract, whichever is less.

2. When delays in Submittals or deliveries make replanning or rescheduling of the Work necessary.

3. When the schedule does not represent actual prosecution and progress of the Work.

4. When any change to the sequence of activities, the completion date for major portions of the Work, or when changes occur which affect the critical path.

5. When Contract Amendments or a Change Order necessitates schedule revision, the Contractor shall submit a schedule analysis of all Change Order Work with its proposal.

E. Cash Flow Projection. A cash flow projection shall be submitted with the Construction Schedule. This cash flow projection shall be revised and resubmitted when revisions of the Construction Schedule will result in changes to the projected cash flow.

F. Schedules showing project completion dates earlier than specified in the Supplemental Conditions will be rejected unless justification can be provided for early completion.

6-1.05 **SCHEDULE OF VALUES.** Prior to preparation of the first estimate for a progress payment, the Contractor shall submit for favorable review by the Director a detailed Schedule of Values or cost breakdown of the Work under each bid item awarded. The breakdown will then become the basis for partial payment determination. Elements of Work shall be grouped by structure, pipeline, system, etc. Within each grouping, Work should be itemized by readily measurable quantities of Work complete in place. For example, concrete should be in units of cubic yards including form Work and reinforcing steel. Move-on costs, bond and insurance costs, and Overhead costs shall not be considered an item of cost for this purpose but shall be prorated over items of Work. In the event the Schedule of Values is not favorable reviewed by the Director, another Schedule of Values shall be submitted that is mutually acceptable to the Contractor and the Director.

6-1.06 **CITY'S RIGHT TO STOP WORK.** The Director shall have the

authority to order the Contractor, in writing, to suspend the Work wholly or in part, for such period as the Director may deem necessary due to the failure on the part of the Contractor to correct Work that is not in accordance with the requirements of the Contract Documents or if Contractor persistently fails to carry out Work in accordance with the Contract Documents.

The Contractor shall immediately comply with the written order of the Director to suspend the Work wholly or in part. The suspended Work shall be resumed when conditions are favorable and methods are corrected, as ordered or approved in writing by the Director.

Any stoppage of work under this section shall be at the Contractor's sole expense, and the Contractor shall have no claim against the City based on the Contractor's failure to perform the Work in accordance with the Contract Documents.

In addition to the City's right to stop Work, the City may order the Contractor to submit to the City at no additional cost to the City, additional information concerning Contractor's planned Work if the Contractor fails to promptly correct Work that is not in accordance with the requirements of the Contract Documents or persistently fails to carry out Work in accordance with the Contract Documents. The additional information ordered by the City may include, but is not limited to, preparation of Submittals or Working Drawings not otherwise required to be submitted under the Contract Documents.

In the event the City discovers that the Contractor has created an unsafe condition the City may arrange for other work forces to remedy the condition. Such remedial work shall be at the sole discretion of the City. If this action is required, the City may unilaterally terminate Work under the Contract, and will pay only for the quantities of Work actually performed, less the cost of the City's remedial Work. In the event that Work is not halted, the Contractor must take immediate steps to correct the situation. There will be no extra payment for Work required

to correct unsafe conditions.

The right of the City to suspend the Work shall not give rise to a duty on the part of the City to exercise this right for the benefit of the Contractor or any other person or entity. This right shall be in addition to and not in restriction or derogation of the City's other rights under the Contract Documents.

In the event of a suspension of Work under any of the conditions set forth in this Section 6-1.06, such suspension of Work shall not relieve the Contractor of its legal responsibilities as set forth in these General Conditions.

6-1.07        **TIME OF COMPLETION.** The Contractor shall complete the entire Work, including Installation, repairs, startup, troubleshooting, painting, and touchup, training, submittal or record drawings, and manuals, cleanup, demobilization, and all other Work within the number of Days set forth in the Supplemental Conditions. The time for completion includes an allowance for working time lost due to normal inclement weather.

Extensions of time may be allowed for unusual inclement weather under the provisions hereinafter described. Unusual inclement weather is weather which adversely affects "controlling" operations or the critical path of construction and which meets one of the following criteria:

A.        For the particular calendar month in question, the number of individual Days with rainfall exceeding 0.10 inches exceeds the average number of such Days for that month over the immediately preceding five (5) years of record by at least three (3) Days.

B.        For the particular calendar month in question, the total cumulative rainfall for that month exceeds the average cumulative rainfall for that month over the immediately preceding five (5) years of record by at least two inches (2").

Rainfall shall be measured at a publicly operated, maintained, and reported station in reasonable proximity to the construction site. A claim for delay shall indicate the period of rainfall which is claimed as “unusual,” the specific dates during which the unusual rainfall and subsequent wet soil conditions prevented Work, and the specific critical path tasks adversely affected by such unusual weather. A claim for delay due to unusual inclement weather shall be filed within ten (10) Days of the apparent end of the unusual inclement rainfall period, whether or not the monthly totals are available at that time. The burden of proof that weather meets the criteria for unusual weather shall be solely the responsibility of the Contractor.

It is the responsibility of the Contractor to order materials required for the Work properly and promptly on a Notice to Proceed. If evidence presented demonstrates that, in spite of the Contractor's efforts, government-established priorities controls delay material deliveries, suitable extension of time will be made.

If performance of extra Work ordered by the City or failure of the City to provide the necessary site for Installation affects construction tasks which are “controlling” or which are on the “critical path” of the Construction Schedule, suitable extensions of time will be made.

The Contractor shall not be entitled to a time extension for delays in activities on non-critical paths of the favorably reviewed schedule unless the duration of the excusable delay exceeds the total float of the activities being delayed. If the duration of an excusable delay does exceed the total float of the activities affected by the delay, the Contractor shall be entitled to an extension equal to the difference.

C. Determination that a day is a non-working day by reason of inclement weather or conditions resulting immediately therefrom, shall be made by the Director.

6-1.08 **LIQUIDATED DAMAGES.** It is agreed by the parties to the Contract

that in case all the Work called for under the Contract in all parts and requirements is not completed within the number of Days as set forth in the Supplemental Conditions, 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 and by reason of such delay; and it is therefore agreed that the Contractor will pay to the City, the monetary amount indicated in the Supplemental Conditions in dollars (U.S.) per day for each and every calendar day of delay in completing the Work in excess of the number of Days prescribed and the number of additional calendar days, if any, authorized by Contract Change Order; and the Contractor agrees to pay said Liquidated Damages herein provided for, and further agrees that the City may deduct the amount thereof from any moneys due or that may become due the Contractor under the Contract.

It is further agreed that in case the Work is not finished and completed in all parts and requirements within the number of Days specified, the City shall have the right to increase the number of Days or not, as it may deem best to serve the interest of the City, and if it decides to increase the said number of Days, it shall 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 of any part, as it may deem 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 preparation of final statement shall not be included in such charges.

6-1.09            **DELAYS AND EXTENSIONS TO THE WORK.** The Contractor must complete all Work within the time specified in the Agreement. The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering

and inspection for any delay in substantially completing the Work (or parts thereof) beyond the time set forth in the Agreement, provided that such delay was caused by unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include acts of public enemy, fire, floods, abnormal weather (as described below), earthquakes, epidemics, quarantine restrictions, strikes, labor disputes and freight embargoes, fire, changes made pursuant to the provisions of “Changes in the Work” under Section 3 of these General Conditions or acts or neglect of the City not contemplated by the Contract Documents. In all cases, any extension of time is conditioned on the following:

1. That the cause is not due to the fault or negligence of the Contractor, and the Contractor has taken reasonable precautions to prevent and minimize the effects thereof; and
2. That the Contractor notifies the Director in writing within three (3) Days from the beginning of such delay specifying the nature of the delay and the measures that have been or will be taken to prevent or minimize the delay. Failure to submit written notice within this time period shall constitute an absolute waiver of any claim for a time extension.

No extension of time will be granted for a delay caused by a shortage of materials, unless the Contractor furnishes to the City documentary proof that it has diligently made every effort to obtain such materials from all known sources within reasonable reach of the work and further proof, as acceptable to the Director, that the inability to obtain such materials when originally planned did in fact cause a delay in Final Completion of the entire Work which could not be compensated for by revising the sequence of the Contractor’s operations. Only the physical shortage of material will be considered as a cause for extension of time, and no consideration

will be given to any claim that material could not be obtained at a reasonable, practical or economical cost or price, unless it is shown to the satisfaction of the City that such material could have been obtained only at exorbitant prices entirely out of line with current rates, taking into account the quantities involved and the usual practices in obtaining such quantities.

No extension of time will be granted for a delay caused by Contractor's staff turnovers, understaffing or insufficient quantity of qualified staff able to perform the necessary work.

The term "shortage of materials," as used in this section, shall apply only to materials, articles, parts or equipment which are standard items and shall not apply to materials, parts, articles or equipment which are processed, made, constructed, fabricated or manufactured to meet the specific requirements of the Contract Documents.

No extensions of time will be granted for delays that have no measureable impact on the completion of the Work (or parts thereof) under the Contract Documents. When extensions of time are granted, they will be limited to the period equivalent to the actual number of Days lost on the critical path or controlling operations of the Construction Schedule, taking into account the extent to which that delay could be decreased by reasonable mitigation measures by the Contractor. All requests for extensions of time must be supported with a critical path analysis showing the critical path and impacts to it. Contractor's failure to submit this analysis will be sufficient cause for denial of any request for a time extension.

Within a reasonable period of time after the Contractor submits the notice and information required by this section, the City will determine whether an extension of time is justified and, if so, the number of days for the extension.

Abnormal weather may be a valid basis for a time extension under the Agreement. "Abnormal Weather" occurs when the number of days of rain above 0.5 inches in a 24 hour

period exceeds the average for such rainfall in a particular month as determined by the National Weather Service. The Contractor will only be entitled to, at most, a time extension for the number of days of rain exceeding the average for that month in the locale where the Work is to be performed. If delays are caused by the Contractor or those for whom the Contractor is responsible, the Contractor will only be entitled to, at most, a time extension for the number of rain days exceeding the average for the month when the Work should have been performed.

In addition, before a time extension may be granted for abnormal weather, the Contractor must establish that the rain either significantly impacted at least sixty percent (60%) of the planned work of the controlling operations for a particular day or prohibited at least five (5) hours of work on the controlling operations planned for that day. Contractor shall employ reasonably methods to mitigate the impact of abnormal weather (i.e., dewatering, protection of site, etc.) The occurrence of rain during non-work hours or having minimal impact to work on the controlling operation shall not constitute a day of abnormal weather.

In the event that the project experiences favorable weather for a particular month (e.g., the number of actual rain days in a month less than that indicated above for allowable rain days per months), the additional float resulting from such favorable weather shall accrue to the project.

Any Contractor claim for damages or additional compensation based on delay shall be limited to only those circumstances where the Contractor has fulfilled each of the following three (3) requirements:

1. Contractor has established its entitlement to a time extension pursuant to the provisions described above regarding delay and extensions to the Work.
2. The delay was caused solely by the City's issuance of changes made pursuant to the

provisions of “Changes in the Work” under Section 3 of these General Conditions or by acts or neglect of the City.

3. The delay was unreasonable under the circumstances and not within the contemplation of the parties.

It is expressly understood and agreed that delays caused by the City will be non-compensable when there are concurrent delays caused by the Contractor. Also, the Contractor shall have no entitlement to additional compensation for any delay where there have been concurrent delays caused by non-compensable delays, including, but not limited to, fire, floods, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, and freight embargoes.

Contractor’s damages and/or additional compensation for delays will consist solely of the extended costs of maintaining the Contractor’s Work Site presence. The Contractor will not be entitled to any extended home office overhead.

Compensation for idle time of equipment will be determined in the same manner as determinations are made for equipment used in the performance of extra work paid for on a Force Account basis with the following exceptions:

1. The time for which compensation will be paid will be the actual normal working hours during which such delay conditions exists, but in no case will exceed eight (8) hours in any one day.
2. The days for which compensation will be paid will be each calendar day of the work week (defined elsewhere in the Contract Documents) and Legal Holidays, during the existence of such delay, except that when rental of the equipment is paid for under the provisions in Section 3-1.06C, “Force Account Payment – Equipment,” of these General Conditions, no payment will be made for delays in accordance with the

provisions of this section.

Actual loss shall be understood to include no items of expense other than idle time of personnel, cost of extra moving of equipment, and cost of longer hauls. Compensation for idle time of equipment will be determined as provided in this section and compensation for idle time of personnel will be determined pursuant to Section 3-1.06A, "Force Account Payment – Labor," of these General Conditions. No markup will be added in either case for Overhead and profit. The cost of extra moving of equipment and the cost of longer hauls will be paid for as extra work as provided pursuant to "Changes to the Work" elsewhere in the Contract Documents.

6-1.10            **TERMINATION.**

6-1.10A            **TERMINATION OF AGREEMENT – CONVENIENCE OF CITY.** The Department reserves the right to terminate the Contract at any time and for any reason if the Director determines that to do so would be in the best interest of the City. Any termination which is not based on the circumstances set forth in Section 6.1-10B below shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of Work under the Contract is terminated, and the date upon which such termination becomes effective.

Upon the Contractor's receipt of a written Notice of Termination for convenience, the Contractor shall cease Work as to those portions of the project so terminated and shall undertake the steps outlined in Section 6-1.10B below.

1.        Acceptance of the Contract as hereinafter specified shall not relieve the Contractor of responsibility for damage to materials except as follows:
  - a.        The Contractor's responsibility for damage to materials for which partial payment has been made as provided in Section 7-1.07, "Progress

Payments,” of these General Conditions and for materials furnished by the City for use in the Work and unused shall terminate when the Director certifies that such materials have been stored in the manner and at the locations he or she has directed.

- b. The Contractor's responsibility for damage to materials purchased by the City subsequent to the issuance of the notice that the Contract is to be terminated shall terminate when title and delivery of such materials has been taken by the City.
- c. When the Director determines that the Contractor has completed the Work under the Contract directed to be completed prior to termination and such other Work as may have been ordered to secure the project for termination, the Contractor will recommend that the City formally accept the Work, and immediately upon and after such Acceptance by the City, the Contractor will not be required to perform any further Work thereon and shall be relieved of its contractual responsibilities for injury to persons or damage to property which occurs after the formal Acceptance of the project by the City.

2. The total compensation to be paid to the Contractor shall be determined by the Director on the basis of the following:

- a. The reasonable cost to the Contractor, without profit, for all Work performed under the Contract, including mobilization, demobilization and Work done to secure the project for termination. Reasonable cost will include a reasonable allowance for project Overhead and general

administrative Overhead not to exceed a total of seven percent (7%) of Direct Costs of such Work.

- b. A reasonable allowance for profit on the cost of the Work performed as determined under subsection (a), provided the Contractor establishes to the satisfaction of the Director that it is reasonably probable that it would have made a profit had the Contract be completed and provided further, that the profit allowed shall in no event exceed four percent (4%) of said cost.
- c. The reasonable cost to the Contractor of handling material returned to the vendor, delivered to the Department or otherwise disposed of as directed by the Director.
- d. A reasonable allowance for the Contractor's administrative costs in determining the amount payable due to termination of the Contract.

All records of the Contractor and the Contractor's Subcontractors, necessary to determine compensation in accordance with this Section, shall be open to inspection or audit by representatives of the Department at all times after issuance of the notice that the Contract is to be terminated and for a period of three (3) years, and such records shall be retained for that period.

After Acceptance of the Work by the Director, the Director may make payments on the basis of interim estimates pending issuance of the Final Statement, when in his or her opinion the amount thus paid, together with all amounts previously paid or allowed, will not result in total compensation in excess of that to which the Contractor will be entitled. All payments, including payment upon the Final Statement, shall be subject to deduction for prior payments and amounts, if any, to be kept or retained under the provisions of the Contract.

In the event that the City terminates this Contract under Section 6-1.10B below and it is determined for any reason that there was not sufficient cause to do so, the City's termination automatically will convert to a termination for convenience under this section and the terms and conditions outlined in this section automatically will be applied to effectuate the Contract termination. Thus, damages to which a Contractor may be entitled as a result of an improper default termination will be limited to the amounts provided for in this section.

The provisions of this section shall be included in all subcontracts.

6-1.10B        **TERMINATION OF AGREEMENT - FOR CAUSE.** An

“Event of Default” as referred to in this section shall occur if the Contractor:

1. Fails to maintain progress of the Work in accordance with the requirements of the Contract Documents; or
2. Fails to prosecute the Work or any of its components in accordance with the Contract Documents; or
3. Persistently or repeatedly fails or refuses to supply sufficient properly skilled workers or proper material to permit the performance of the Work in accordance with the Contract Documents; or
4. Fails to make prompt payment to Subcontractors or Suppliers in accordance with the respective agreements between the Contractor and the Subcontractor and Contractor and Supplier; or
5. Fails to comply with applicable laws, ordinances or rules, regulations or orders of a public authority having jurisdiction over the Work; or
6. Abandons, assigns or sublets the Contract without approval of the City; or
7. Becomes bankrupt or is subject to appointment of a receiver on behalf of the

Contractor; or

8. Otherwise is guilty of a substantial breach of a provision of the Contract Documents.

Upon the City's reasonable belief that there has been an Event of Default by the Contractor, the City may elect to give the Contractor written notice thereof. The Contractor thereafter shall cure the default as soon as possible and in no event after ten (10) Days from the Contractor's receipt of the City's written notice.

If the Contractor does not timely cure its default, the City may, without waiver of any of its other rights and remedies, elect to terminate the Contract, or portion thereof.

Upon the City's election to terminate the Contract, or portion thereof, the City shall have the right to complete the Work, or portion involved, by whatever means and methods it deems expedient, including the hiring of others on such terms as the City deems advisable. The City shall have the right to take possession of the Contractor's materials, plant, tools, equipment and property of any kind provided by or on behalf of the Contractor for the purpose of the Work, or a portion of them, without being responsible to the Contractor for wear and tear. The Contractor shall have no rights in such property during its use by the City. The City shall not be required to obtain the lowest prices for completing the Work or a portion of it but shall make such expenditures as, in the City's sole judgment, best accomplish such completion.

The expense of completing such Work or portion thereof, together with a reasonable charge for engineering, managerial and administrative services, as certified by the City, shall be charged to the Contractor, and the expense so charged shall be deducted by the City out of such monies as may be due or may at any time thereafter become due to the Contractor. In case such expense is more than the sum which otherwise would have been payable to the Contractor under the Agreement, then the Contractor or its surety or sureties shall promptly pay the amount of

such excess so due. When the City terminates the Contract under this section, the Contractor shall not be entitled to receive any further payments until the Work is completed and there has been a final settlement of costs of completing the Work covered by such notice of default.

The City will issue to the Contractor a written notice specifying that the Contract, or portion thereof, is terminated. Upon receipt of said written notice and, except as otherwise directed in writing by the City, the Contractor shall:

1. Stop all Work under the Contract; or if partial termination, stop Work relating to the terminated portion of the Agreement;
2. Perform Work the City deems necessary to secure the Work Site for termination including measures to leave the Work Site in a safe condition;
3. Remove equipment from the site of Work, as specified by the City;
4. Take such action as is reasonably necessary to protect materials from damage;
5. Notify all Subcontractors and Suppliers that the Contract or portion thereof is being terminated and that their contracts or orders are not to be further performed unless otherwise authorized in writing by the City;
6. Provide the City with an inventory list of all materials previously produced, purchased or ordered from Suppliers for use in the Work and not yet used in the Work, including its storage location, and such other information as the City may request;
7. Dispose of materials not used in the Work as directed by the Director. It shall be the Contractor's responsibility to provide the City (a) with good title to all materials purchased by the City hereunder, including materials for which partial payment has been made by the City and (b) with bills of sale or other documents of title for such

materials;

8. Subject to the prior written approval of the City, settle all outstanding liabilities and all claims arising out of Subcontractors or orders for materials terminated hereunder. To the extent directed by the City, the Contractor shall assign to the City all rights, title and interests of the Contractor under subcontracts or orders for materials terminated hereunder. The City shall be at liberty to negotiate with and engage any Subcontractors who had contracted with the Contractor for the Work;
9. Furnish the City with the documentation required to be furnished by the Contractor under the provisions of the Contract Documents, including, on projects as to which Federal funds are involved, all documentation required under the Federal requirements included in the Agreement; and
10. Take such other actions as the City may direct.

If only a portion of the Work has been terminated, the Contractor shall perform the remainder of the Work in conformity with the Contract Documents and in such a manner as not to interfere with the City or others in their performance and completion of the portion of the Work which was terminated.

The City may recover from the Contractor the amount of any loss or damage, including consequential damages, suffered or incurred as a result of the Contractor's default.

## SECTION 7

### ACCEPTANCE AND PAYMENT

7-1.01        **ACCEPTANCE.** When the Contractor believes that the entire Work is fully and finally completed, including the satisfactory completion of inspections, tests, and documentation specified in the Contract Documents and completion of all punch list and clean-up items, the Contractor shall submit to the City a written request for final Acceptance within fifteen (15) Days thereafter, specifying that the Work is fully and finally completed and the date on which it was completed. Within thirty (30) Days after receipt of the request for final Acceptance, the City will inspect the Work and will either:

1. Reject the request for final Acceptance, specifying the defective and/or uncompleted portions of the Work; or
2. Notify the Contractor that the Work will be accepted by Resolution of the City Council of the City of Roseville, and a Notice of Completion will be caused to be recorded by the City Clerk; or
3. Notify the Contractor that the Work has been accepted by the City but no Notice of Completion will be recorded.

If the City rejects the request for final Acceptance, the Contractor shall promptly remedy the defective and/or uncompleted portions of the Work. Thereafter, the Contractor shall again submit a written request for final Acceptance of the Work, specifying a new date based on the date the defective and/or uncompleted portions of the Work were corrected. Thereafter, the foregoing procedure shall apply successively until the City has verified that the Work is fully and finally completed and accepted the Work by Resolution of the City Council or by written

notification from the Director. Immediately upon such Acceptance, the Contractor shall be relieved of the duty of maintaining the Work as a whole.

All warranties commence upon final Acceptance of the Work. The City's final Acceptance of the Work shall not be construed as an acceptance by the City of any latent defects discovered with regard to the Contractor's work. Furthermore, Contractor's obligations under Section 5-1.22 "Responsibility for Damage and Indemnification" shall still remain applicable after the City's grant of final Acceptance of the Work.

Prior to final Acceptance, the Contractor shall submit to the City the Record Documents and Operation and Maintenance Manuals as specified in the Contract Documents.

7-1.02            **SCOPE OF PAYMENT.** The Contractor shall accept the compensation provided in the Contract as full payment for furnishing all labor, materials, tools, equipment, and incidentals 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, or from any unforeseen difficulties which may be encountered during the prosecution of the Work until the Acceptance by the Director and for all risks of every description connected with the prosecution of the Work, also for all expenses incurred in consequence of the suspension or discontinuance of the Work as provided in the Contract; and for completing the Work according to the Contract. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective Work or material.

No compensation will be made in any case for loss of anticipated profits.

7-1.03            **NOTICE OF POTENTIAL CLAIM.** The Contractor shall not be entitled to the payment of any additional compensation for any act or failure to act by the City,

including failure or refusal to issue a Change Order, or for the happening of any event, thing, occurrence or other cause unless the Contractor has given the City due written Notice of Potential Claim as hereinafter specified, provided, however, that compliance with this Section 7-1.03 shall not be a prerequisite as to matters within the scope of the notice provisions in Section 6-1.07, "Time of Completion," or the notice provisions in Section 6-1.08, "Liquidated Damages," of these General Conditions, nor to any claim which is based on differences in measurement or errors of computation as to correct quantities.

The written Notice of Potential Claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. The said Notice as above required must have been given to the Director prior to the time that the Contractor shall have performed the Work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Director, or in all other cases within seven (7) Days after the happening of the event, thing, occurrence or other cause giving rise to the potential claim.

If the Notice of Potential Claim does not include complete information about the claim or the parties do not execute a Contract Change Order in connection with the Notice of Potential Claim, Contractor shall submit complete information about its claim for additional compensation and/or extension of time for performance within fifteen (15) Days after such work is performed. Failure to provide written notice of claim prior to undertaking such work or failure to timely submit a complete and specific information about the claim for additional compensation and/or extension of the time for performance shall be deemed a waiver and abandonment of such claim.

If there is a dispute over any claim, the Contractor shall continue to Work during the dispute resolution process in a diligent and timely manner as directed by the City, and shall be

governed by all applicable provision of the Agreement.

The Contractor shall maintain cost records of all Work that is the basis of any dispute. On a daily basis, Contractor shall submit to City completed daily forms, the format of which will be acceptable to the City, with respect to the Contractor's costs of performing the disputed work. These daily forms shall itemize all of Contractor's costs in performing the disputed work, including, but not limited to, all costs relating to materials, labor and equipment with respect to the disputed work. These daily forms shall provide names or identification and classification of affected workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated. Said daily work forms shall be duly signed and verified by the Contractor or its authorized representative. The City's receipt of the Contractors' daily forms shall not constitute an approval of the Contractor's claim. Contractor's failure to submit the daily forms on a daily basis shall constitute a waiver of the Contractor's right to claim any additional compensation for the disputed work.

Each Contractor claim shall include full and complete information concerning the Claim. Contractor shall provide a clear, concise recital of the basis, upon which the claim is asserted, including a designation of the provisions of the Contract Documents upon which the claim is based. Contractor shall also include a statement as to the amount of time and/or compensation sought pursuant to the claim; if Contractor's claim arises from an ongoing occurrence, Contractor shall so state in its claim, including a description of the specific Work activities affected by the claim. All costs, expenses or damages and extensions of time claimed shall be described in reasonable detail under the circumstances together with complete supporting documentation.

The City will review any timely Notice of Potential Claim and supporting information

submitted by Contractor. In conducting this review, the City shall have the right to require the Contractor to submit such additional or supporting documents, data and other information as the City may require.

If an agreement can be reached which resolves the Contractor's claim, the parties will execute a Contract Change Order to document the resolution of the claim. If the parties cannot reach agreement with respect to the Contractor's claim, the Contractor shall still be obligated to comply with the claim identification provisions identified in these General Conditions, including but not limited to Section 7-1.04.

It is the intention of this Section 7-1.03 that differences between the parties arising under and by virtue of the Contract be brought to the attention of the Director at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that it shall have no right to additional compensation for any Claim that may be based on any such act, failure to act, event, thing or occurrence for which no timely written Notice of Potential Claim as herein required was filed.

7-1.04        **CLAIMS.** Contractor must submit all Claims, for which it has previously submitted a Notice of Potential Claim, prior to Acceptance of the Work. Each such Claim must be sent to the City by registered mail or certified mail with return receipt requested and must contain reasonable documentation to support the Claim.

Upon receipt of a Claim, the City shall conduct a reasonable review of the Claim and, within a period not to exceed forty-five (45) Days, or such further time as mutually agreed upon or necessary pursuant to Public Contract Code Section 9204, the City shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. If the City does not respond to a Claim from the Contractor within the time

specified herein, such Claim shall be deemed rejected in its entirety.

Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) Days after the City issues its written statement.

If the Contractor disputes the City's written response, or if the City does not respond within the time specified herein, the Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the City shall schedule a meet and confer conference within thirty (30) Days for settlement of the dispute.

Within ten (10) business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the City shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) Days after the City issues its written statement. Any disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the City and the Contractor sharing the associated costs equally. The City and the Contractor shall mutually agree to a mediator within ten (10) business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be resolved in accordance with Section 7-1.05 below.

7-1.05            **DISPUTE RESOLUTION PROCEDURE.** All Claims not resolved

pursuant to Section 7-1.04, shall be resolved pursuant to Public Contract Code Section 10240, et seq.

7-1.06            **STOP PAYMENT NOTICES.** The City, by and through the Department or other appropriate office or officers, may at its option and at any time retain out of any amounts due the Contractor, sums sufficient to cover claims, filed pursuant to Civil Code Section 9350, et seq., including an amount to provide for the reasonable cost of any litigation thereunder.

7-1.07            **PROGRESS PAYMENTS.** Within fifteen (15) Days after the effective date in the Notice to Proceed, but in any event prior to Contractor's first Application for Payment, the Contractor shall submit to the City a detailed Schedule of Values.

Upon its approval, the Schedule of Values will form a basis for determining the compensation payable to the Contractor based on its actual progress of Work with respect to each Lump Sum bid item. The City, prior to any progress payment being made, must approve the Schedule of Values.

At the Director's discretion the approved Schedule of Values may be used as the basis for calculating the adjustment in compensation for a lump sum bid item due to changes ordered by the Director. When an ordered change increases or decreases the quantities shown in an approved Schedule of Values, at the Director's discretion, the adjustment in compensation may be determined in the same manner specified for increases and decreases in the quantity of a bid item of work in accordance with Section 3-1.05(B), "Contract Price Adjustment," of these General Conditions.

The Contractor once in each month shall submit an Application for Payment, for approval by the Director. Contractor's Applications shall be based on the Schedule of Values submitted to the City. These applications shall be supported by: (1) documentation requested by the City to

substantiate the payment request; (2) statutory releases from Contractor and all Subcontractors and suppliers pursuant to Civil Code Sections 8132 and 8138; and (3) certified payroll records for the period for which payment is requested. Specifically, the Contractor will submit conditional waivers upon progress payment executed by all contractors and suppliers that will be receiving sums sought in the instant payment request and also submit unconditional waivers upon progress payment executed by all contractors and suppliers that have been paid to the date of the payment request. The Contractor shall certify that the Work for which payment is requested has been accomplished. When requested by the City, the Contractor shall submit receipts, invoices and other documentation that the City requires to be furnished for purpose of evaluating the application.

The City will pay the Contractor within thirty (30) Days after its receipt of an undisputed and properly submitted Application for Payment, after deducting all previous payments, retention, and other sums as described in the Contract Documents. Within seven (7) Days of its receipt of the Contractor's Application for Payment, the City will determine whether it complies with the provisions of the Contract Documents. As appropriate, the City will return the application to the Contractor accompanied by a document prepared by the City setting forth the reasons for the rejection. Thereafter, the Contractor shall correct and resubmit the Application for Payment. Progress payments may be withheld for Work that is not performed in accordance with the Contract Documents.

The City may deduct the following from each progress payment:

1. An amount equal to one hundred and twenty-five percent (125%) of the amount claimed under any stop payment notice or other lien filed against the Contractor, which includes an amount to provide for the reasonable cost of any litigation

thereunder.

2. Any Liquidated Damages or Assessments that have accrued as of the date of the Application for Payment.
3. Any sums expended by the City in performing any of the Contractor's obligations under the Agreement that the Contractor has failed to perform.
4. Any other sums that the City is entitled to recover from the Contractor under the terms of the Contract including damages to the City's property.
5. The failure of the City to deduct any of the above identified sums from a progress payment shall not constitute a waiver of the City's right to such sums.

No such estimate or payment shall be construed to be an acceptance of any defective Work or improper materials.

Under no circumstances will the City make payment to unlicensed Contractors. As a condition of payment, the Contractor is required to maintain the applicable Contractor's license as identified in the Notice to Contractors for the duration of the Work.

7-1.08            **PAYMENT FOR MATERIALS AND EQUIPMENT ON HAND.**

Partial payments may be made to the extent of seventy-five percent (75%) of the cost of materials and equipment plus delivery to be incorporated in the Work, provided that such materials and equipment meet the requirements of the Contract Documents and are delivered to acceptable sites on the plant site or at other sites in the vicinity that are acceptable to the City and only with the prior written approval by the City. Such delivered costs of stored or stockpiled materials and equipment may be included in the next progress payment after the following conditions are met:

- A.        Equipment and materials will only be eligible if given conditional or final

Acceptance by the Director and are in apparent compliance with favorably reviewed Submittals.

B. Only equipment or materials which have received favorable review of Shop Drawings will qualify.

C. The material or equipment has been stored or stockpiled adequately protected against damage in a manner acceptable to the Director at an approved site.

D. The Contractor has furnished the Director with acceptable evidence of the quantity and the quality of such stored or stockpiled materials or equipment with identification of where they will be incorporated into the project with Specification reference.

E. The Contractor has furnished the Director with satisfactory evidence that the material or equipment and transportation costs have been paid.

F. The Contractor has furnished the City legal title (free of liens or encumbrances of any kind) and lien releases to the material or equipment so stored or stockpiled.

G. The Contractor has furnished the City evidence that the material or equipment so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the Work.

It is understood and agreed that the transfer of title and the City payment for such stored or stockpiled materials or equipment shall in no way relieve the Contractor of its responsibility for furnishing and placing such materials or equipment in accordance with the requirements of the Contract Documents.

In no case will the amount of progress payments for materials or equipment on hand exceed the Contract Price for such materials or equipment or the Contract Price for the Contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant

materials.

The Contractor shall bear all costs associated with the progress payment of stored or stockpiled materials or equipment in accordance with the provisions of this Section.

7-1.09            **RETENTION ON PROGRESS PAYMENTS.** From each progress payment estimate, five percent (5%) will be deducted and held in retention by the City. The remainder, less any deductions described in Section 7-1.07, “Progress Payments,” of these General Conditions, will be paid to the Contractor as progress payments.

Pursuant to Public Contract Code Section 22300, the successful Bidder may submit Securities in lieu of retention payments by the City. Upon the Contractor’s request, the City will make payment of funds withheld from progress payments, pursuant to the requirements of California Public Contract Code Section 22300, if the Contractor deposits in escrow with the City or with a bank acceptable to the City, securities eligible for investment under California Government Code Section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the City, upon the following conditions:

1.        The Contractor shall bear the expenses of the City and the escrow agent in connection with the escrow deposit made.
2.        Securities or certificates of deposit to be placed in escrow shall be of a value at least equivalent to the amounts of retention to be paid to the Contractor pursuant to this section.
3.        Contractor shall enter into an escrow agreement satisfactory to the City, which agreement shall be substantially similar to the form provided in California Public Contract Code section 22300.

4. The Contractor shall obtain the written consent of the surety to such agreement.

7-1.10 **FINAL PAYMENT.** Final payment will be made only after Contractor has achieved Final Completion of the Work pursuant to the provisions of Section 7-1.01, “Acceptance,” of these General Conditions. Before final payment can be made, the Contractor shall have furnished the City with the following:

1. All Record Documents, catalogues, instruction sheets and information as required by the Contract Documents.
2. Conditional Waivers and Releases Upon Final Payment executed by Contractor and all Subcontractors and Suppliers, as provided by Civil Code Section 8136. Unconditional Waivers and Releases Upon Final Payment, as provided in Civil Code Section 8138, executed by Contractor and all Subcontractors and Suppliers, must be provided for all Subcontractors and Suppliers that have been paid in full.

Within thirty (30) Days of the date of the City’s Acceptance of the Work, the Contractor shall prepare and submit a Final Invoice, showing the proposed total amount due the Contractor, segregated by Bid item quantities, Change Order Work, and other basis for payments; deductions made or to be made for prior payment; and amounts previously retained. Prior invoices and payments shall be subject to correction in the proposed Invoice for Final Payment. Payments to the Contractor will be made only for actual quantities of the Contract items of work constructed in accordance with the Contract Documents.

The City will review the Contractor’s proposed Final Invoice and necessary changes or corrections will be forwarded to the Contractor. Within ten (10) Days thereafter, the Contractor

shall submit a revised proposed Final Invoice incorporating changes or corrections made by the City together with any new claims resulting therefrom. Upon approval by the City, the corrected proposed Final Invoice will become the approval Final Invoice.

If agreements are reached on all questions regarding the Final Invoice, the City will pay the entire sum found due on the approved application. However, the City will withhold sums sufficient to pay all unsettled claims for which stop payment notices have been filed pursuant to Section 9350, et seq. of the California Civil Code, together with the reasonable cost of any litigation thereunder.

Final payment will be made within thirty (30) Days after receipt of an approved Final Invoice and other required Submittals referenced above or within sixty (60) Days after Acceptance of the work by the City, whichever is later, provided, however, that if an approved Final Invoice has not been submitted within sixty (60) Days after Acceptance of the Work by the City, the City may elect to make payment of sums not in dispute without prejudice to the right of either the City or the Contractor in connection with such disputed sums. Notwithstanding the foregoing, if a Notice of Completion is recorded, final payment shall not be made prior to the expiration of the thirty-five (35) calendar day lien period. The start of this lien period is the date the Placer County Recorder's Office records the Notice of Completion.

The City may withhold from the Final Payment an amount not to exceed one hundred fifty percent (150%) of any amount in dispute between the City and the Contractor.

The making of Final Payment shall not operate to release the Contractor or its sureties from obligations arising under the Contract, the Contract bonds and warranties as herein provided. Specifically, the making of final payment shall not constitute a waiver and release of claims by the City arising from:

1. Unsettled or future liens;
2. Failure of the Work to comply with the requirements of the Contract Documents;
3. The terms of any warranties required by or contained in the Contract Documents;
4. The right to any insurance proceeds or the right to make any insurance or bond claims;
5. Any claims with respect to Contractor's obligations of indemnity with respect to claims asserted by third parties; or
6. Any latent deficiencies with the Work or Contractor's fraud.

7-1.11        **CLERICAL ERRORS.** Notwithstanding the provisions of Section 7-1.10, "Final Payment," of these General Conditions, for a period of three (3) years after Acceptance of the Work, all estimates and payments made pursuant to said Section 7-1.10, are subject to correction for clerical errors in the calculations involved in the determination of quantities and payments. The Contractor and the City agree to pay to the other any sum due under the provisions of this Section 7-1.11, provided, however, if the total sum to be paid is less than \$100, no such payment shall be made.

7-1.12        **WARRANTY.** Notwithstanding inspections and Acceptance by the City of Work furnished under the Contract Documents, the Contractor hereby unconditionally guarantees that all materials and equipment furnished will be of good quality and new, that the Work will be free from defects in workmanship and materials and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

This warranty by the Contractor is in addition to any warranties or guarantees required elsewhere in the Contract Documents. This warranty shall be in effect notwithstanding any disclaimers, or limiting or conditional terms contained in such separate warranties furnished by manufacturers or suppliers.

The Contractor hereby agrees to repair or replace any and all Work, together with any other adjacent Work which may be displaced in so doing, that may prove to be not in accordance with the requirements of the Contract or that may be defective in its workmanship or material during the greater of a period of one (1) year after Acceptance of the Work by the City or the period specified in the Special Conditions, without any expense whatsoever to the City, ordinary wear and tear and unusual abuse or neglect excepted.

The Contractor further agrees, that within ten (10) Days after being notified in writing by the Department of any Work not in accordance with the requirements of the Contract Documents or of any defects in the Work, the Contractor will commence and prosecute with due diligence all Work necessary to fulfill the terms of this warranty, and to complete such Work within a reasonable period of time. In the event Contractor fails to comply, it does hereby authorize the Department to proceed to have such Work done at the Contractor's expense and the Contractor will honor and pay the cost and charges therefore upon demand. The Department shall be entitled to all costs and expenses, including reasonable attorneys' fees, necessarily incurred upon the Contractor's refusal to honor and pay the above costs and charges.

All warranties set forth in the Contract Documents shall be deemed cumulative and not alternative or exclusive. Nothing contained in this section shall be construed to establish a period of limitation with respect to any other obligation, which Contractor has under the Contract Documents or under any separate warranty or guaranty required thereby. The establishment of a

specific warranty period relates only to the specific obligation of Contractor to correct defective Work, and it has no relationship to the time within which its obligation to comply with the Contract Documents or applicable provision of law may be sought to be enforced, nor to the time within which proceedings may be commenced to establish Contractor's liability with respect to its obligations other than specifically to correct the Work. Without limiting the foregoing, it is understood and agreed that Contractor shall remain responsible for latent defects with its work, regardless of the expiration of any warranty period set forth in the Contract Documents.

7-1.13            **WARRANTY OF TITLE.** No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies, and equipment Installed or incorporated in the Work and agrees upon completion of all Work to deliver the Premises, together with all improvements and appurtenances constructed or placed thereon by it, to the City free from any claim, liens, security interest, or charges, and further agrees that neither the Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by this Contract shall have any right to a lien upon the Premises or any improvement or appurtenances thereon. Provided, that this shall not preclude the Contractor from Installing metering devices and other equipment of utility companies, the title of which is commonly retained by the utility company. In the event of the Installation of any such metering device or equipment, the Contractor shall advise the City as to the legal owner thereof. Nothing contained in this paragraph, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the City.

The provisions of this paragraph shall be inserted in all subcontracts and material Contracts, and notice of its provisions shall be given to all persons furnishing materials for the Work when no formal Contract is entered into for such materials.

[END OF GENERAL CONDITIONS]

## SUPPLEMENTAL CONDITIONS

Project: Zero Emissions Bus Depot

Scope of Supplemental Conditions

1. The Work shall be performed in accordance with the General Conditions and Department Standards, except as the General Conditions may be modified by the following additional City Standards, incorporated herein by this reference, if so indicated.

	COMMUNITY DESIGN GUIDELINES 311 Vernon Street, Roseville, CA 95678
	SPECIFICATIONS FOR COMMERCIAL CONSTRUCTION (ELECTRIC) 2090 Hilltop Circle, Roseville, CA 95747
	PARKS CONSTRUCTION STANDARDS 316 Vernon Street, Suite 400, Roseville, CA 95678
	DESIGN AND CONSTRUCTION STANDARDS 311 Vernon Street, Roseville, CA 95678
	OTHER

Above documents are available at: [www.roseville.ca.us](http://www.roseville.ca.us).

2. Numbering in these Supplemental Conditions conforms to that in the General Conditions. The existence of a section in these Supplemental Conditions means that the corresponding section in the General Conditions is modified in some respect. Unless otherwise specified, the modified General Condition is deleted entirely and the provisions of these Supplemental Conditions are substituted.

## SECTION 1. DEFINITIONS AND TERMS

1-1.24        **DEPARTMENT.** Section 1-1.24 of the General Conditions is amended to include the following:

The Department for Contract Administration is the Public Works Department of the City of Roseville.

## SECTION 2. CONTROL AND SCOPE OF THE WORK

2-1.08        **SUBMITTALS.** Section 2-1.08 of the General Conditions is amended to include the following:

The time allowed for review of each submittal is 7 Days after receipt of the submittal by the Engineer.

### **SECTION 3. CHANGES IN THE WORK**

There are no amendments to the General Conditions.

## **SECTION 4. CONTROL OF MATERIALS**

There are no amendments to the General Conditions.

## SECTION 5. LEGAL RELATIONS AND RESPONSIBILITY

5-1.14        **AIR POLLUTION CONTROL AND ASBESTOS.** Section 5-1.14 of the General Conditions is amended to include the following:

To the best of the City's knowledge, asbestos is not present in the vicinity of the Project. Additional information shall be made available to Contractor upon request.

## SECTION 6. PROSECUTION AND PROGRESS

6-1.04        **PROGRESS SCHEDULE.** Section 6-1.04F of the General Conditions is amended to include the following:

Progress schedules showing project completion dates more than 10 Days earlier than specified in Section 6-1.07 shall be rejected.

6-1.07        **TIME OF COMPLETION.** Section 6-1.07 of the General Conditions is amended to include the following:

The Contractor shall begin Work within 15 business days after receiving a Notice to Proceed and shall diligently prosecute the Work to completion. The Work shall be completed within 100 business days of the Notice to Proceed.

If landscaping plants require an establishment period, that period will be 30 calendar days. Start of the establishment should be as outlined in the Specifications.

6-1.08        **LIQUIDATED DAMAGES.** Section 6-1.08 of the General Conditions is amended to include the following:

The amount of Liquidated Damages is the sum of \$ 5,000 per Day.

## **SECTION 7: ACCEPTANCE AND PAYMENT**

There are no amendments to the General Conditions.

[END OF SUPPLEMENTAL CONDITIONS]

# SPECIFICATIONS

Project: ZERO EMISSIONS BUS DEPOT

SPEC

**CITY PROJECT # 40022**

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

**ROADWAY**



Brian Wright, Registered Civil Engineer



**STRUCTURES**



Douglas Fredericks, Registered Civil Engineer



**ELECTRICAL**



Jesse Bastian, Registered Electrical Engineer



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APPENDIX A

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APPENDIX C

APPENDIX D

**SPECIAL PROVISIONS  
FOR  
ZERO EMISSION BUS DEPOT PROJECT**

CITY OF ROSEVILLE PROJECT NUMBER 400-164

**SCOPE OF SPECIAL PROVISIONS**

1. The work described in these Special Provisions must be done in conformance with the latest edition of the City of Roseville Standard Construction Specifications, City of Roseville Design and Construction Standards, and Caltrans Standard Specifications and Plans, except insofar as they may be modified by these Special Provisions.
2. Numbering in these Special Provisions conforms to that in the Standard Construction Specifications. The existence of a section in these Special Provisions means that the corresponding section in the Standard Construction Specifications is modified in some respect. Unless otherwise specified, the Standard Construction Specification Provisions are deleted entirely, and the provisions of these Special Provisions are substituted.
3. The construction materials, payment, etc., for items of work shown in the proposal and on the plans, but not specifically mentioned in these Special Provisions are referred to the Standard Construction Specifications for conformance.







AA

## 5 CONTROL OF WORK

### Add to section 5-1.01 with:

For the award of the "Project", the City and the Resident Engineer will provide inspection on an eight-hour (8) day and a forty-hour (40) week (Monday through Friday) basis only. The Contractor must reimburse the City at a rate of **\$175 per hour** and the Resident Engineer at \$225 per hour for all inspection in excess of those hours listed above, including designated holidays and weekends. Requests for authorization to perform work outside the hours of 7:00 a.m. to 4:00 p.m., Monday through Friday, must be made in writing at least 48 hours in advance.

Attention is directed to Section 7-1.03," Public Convenience" of the State Standard Specifications concerning project working hours.

Designated holidays are observed: New Year's Day, Martin Luther King Day, Presidents Day, Memorial Day, 4<sup>th</sup> of July, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day. When a designated holiday falls on a Saturday or Sunday, the preceding Friday or following Monday (respectively) shall be a designated holiday.

The Contractor must provide a competent person during normal working hours to assist the Engineer, when required, in checking lines and grades of the Contractor's layout and for measuring quantities for payment purposes. The Contractor must cooperate with the Engineer so that checking, and measuring may be accomplished with the least interference to the Contractor's operations. No additional compensation will be made to the Contractor for fulfilling this requirement.

Attention is directed to Section 81-4 (E) and 91-4 (E) of the City of Roseville Construction Standards regarding trenching within the existing roadway.

### Replace the 2nd paragraph in section 5-1.02 with:

Any discrepancies or omissions found in the Contract Documents must be reported to the Engineer immediately. The Engineer will clarify discrepancies or omissions, in writing, within a reasonable time.

In resolving inconsistencies among two or more sections of the Contract Documents, precedence is given in the following order:

- A. Notice to Contractors
- B. Special Provisions
- C. Project Drawings
- D. City of Roseville Standard Construction Specifications (Latest Editions)
- E. City of Roseville Design and Construction Standards and Amendments (Latest Editions)
- F. City of Roseville Parks Construction Standards (Latest Edition)
- G. 2015 Revised Standard Specifications
- H. 2015 Caltrans Standard Specifications
- I. 2015 State Revised Standard Plans

- J. 2015 State Standard Plans
- K. Supplemental Project Information

Addenda take precedence over all sections referenced therein. Figure dimensions on Drawings take precedence over scale dimensions. Detailed Drawings take precedence over general Drawings.

**Replace section 5-1.05 with:**

**5-1.05 ORDER OF WORK**

As a first order of work the Contractor must contact Underground Service Alert (U.S.A.) and to pothole utilities adjacent to the proposed improvements.

To avoid and minimize impacts on nesting special-status and non special-status migratory birds and raptors, the City will implement one or more of the following surveys and restrictions.

- If construction activities are scheduled to occur during the breeding season for special-status and non-special-status migratory birds and raptors (generally between March 1 and August 15), a qualified wildlife biologist (with knowledge of the species to be surveyed) must be retained to conduct the following focused nesting surveys prior to the start of construction and within the appropriate habitat.
- The nesting surveys should be conducted within 1 week prior to initiation of construction activities that will occur in suitable habitat between March 1 and August 15. If no active nests are detected during these surveys, then no additional mitigation is required.
- If surveys indicate that special-status or non-special-status migratory bird or raptor nests are found in the survey area identified above for each species, a no-disturbance buffer must be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a qualified wildlife biologist determines the young have fledged (usually late June to mid-July). The extent of these buffers must be determined by the biologist (coordinating with DFG) and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed in order to make an appropriate decision on buffer distances. Suitable buffer distances may vary between species.

The Contractor must prepare a traffic control plan that conforms to Section 12, "Construction Area Traffic Control Devices," of the City of Roseville Construction Standards, the California MUTCD and as described within these Special Provisions prior to construction of each location. The traffic control plan must include pedestrian plans.

The work must be performed in conformance with the phases of construction shown on the plans and on the Contractor's Traffic Control Plan. Non conflicting work in subsequent phases may proceed concurrently with work in preceding phases.

For each stage of construction, the Contractor is responsible for providing temporary drainage to ensure that there are no impacts to adjacent properties, the public or the traveled way, including preventing ponding and standing water within the project limits, and that all existing drainage pattern are maintained. It is the Contractor's responsibility to ensure temporary drainage is implemented and maintained throughout the duration of the project. Full compensation for providing temporary drainage, any temporary grading, temporary erosion control, temporary

pipng, temporary inlets, temporary connections and other appurtenances, is considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed therefor.

Full compensation for complying with the requirements of this section is considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

Attention is directed to "Water Pollution Control" of the State Standard Specifications and requirements specified in the Stormwater Pollution Prevention Plan prior to performing work having potential to cause water pollution.

Attention is directed to "Progress Schedule" of these special provisions regarding the submittal of a general time-scaled logic diagram within 10 days after approval of the contract.

The first order of work shall be to place the order for long lead time materials and equipment including electrical materials that will be furnished by the Contractor for this project. The Contractor must place the order within 5 working days after the Project Award. Should the City have to supply the Contractor with material and/or equipment to do the work, the Contractor will be charged accordingly per agreed upon cost. The Contractor must furnish the Engineer with a statement from the equipment vendor(s) that the order for said equipment has been received and accepted by said vendor(s). Said statement must include an anticipated date of delivery of said equipment to the Contractor. Said statement must be furnished to the Engineer within 15 calendar days of the Project Award. Charging equipment must be completed by the end of the Contract. The Contractor must pay liquidated damages per the Special Provisions of this document if the installation of charging cannot be completed within the above time frame.

The Contractor must coordinate with the Parks Construction Inspector prior to disturbing the existing landscape and irrigation. The Contractor must field verify the locations of existing irrigation systems prior to construction activities. All new components and landscaping must be per the latest version of the Parks Standards. All adjacent systems must maintain automatic programmed watering schedules throughout the construction. The Contractor is responsible for repairing or replacing and adjusting any portions of the existing irrigation systems impacted during construction of the improvements of this Contract.

Time is of the essence on this contract, and the order of all other work must be such as to assure the completion of the project within the allotted working days as described herein while complying with the requirements set forth in the plans, specifications and contract document. Full compensation for conforming to these requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

Following the completion of the work, the Contractor must provide the City with a copy of the record as-built drawings.

**Replace paragraphs of section 5-1.13B(1) with:**

Use each DBE subcontractor as listed on Exhibit 12-B *Bidder's List of Subcontractors (DBE and Non-DBE)* and Exhibit 15-G *Construction Contract DBE Commitment* form unless you receive authorization for a substitution.

The Agency requests the Contractor to:

1. Notify the Engineer of any changes to its anticipated DBE participation

2. Provide this notification before starting the affected work
3. Maintain records including:
  - 3.1. Name and business address of each 1<sup>st</sup>-tier subcontractor
  - 3.2. Name and business address of each DBE subcontractor, DBE vendor, and DBE trucking company, regardless of tier
  - 3.3. Date of payment and total amount paid to each business

If you are a DBE contractor, include the date of work performed by your own forces and the corresponding value of the work.

Before the 15th of each month, submit a Monthly DBE Trucking Verification form.

If a DBE is decertified before completing its work, the DBE must notify you in writing of the decertification date. If a business becomes a certified DBE before completing its work, the business must notify you in writing of the certification date. Submit the notifications. On work completion, complete a Disadvantaged Business Enterprises (DBE) Certification Status Change, Exhibit 17-O, form. Submit the form within 30 days of contract acceptance.

Upon work completion, complete Exhibit 17-F *Final Report – Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors*. Submit it within 90 days of contract acceptance. The Agency will withhold \$10,000 until the form is submitted. The Agency releases the withhold upon submission of the completed form.

**Replace section 5-1.13B(2) with:**

**5-1.13B(2) Performance of Disadvantaged Business Enterprises**

DBEs must perform work or supply materials as listed in the Exhibit 15-G *Construction Contract DBE Commitment* form, included in the Bid.

Do not terminate or substitute a listed DBE for convenience and perform the work with your own forces or obtain materials from other sources without authorization from the Agency.

The Agency authorizes a request to use other forces or sources of materials if it shows any of the following justifications:

1. Listed DBE fails or refuses to execute a written contract based on plans and specifications for the project.
2. You stipulated that a bond is a condition of executing the subcontract and the listed DBE fails to meet your bond requirements.
3. Work requires a contractor's license and listed DBE does not have a valid license under Contractors License Law.
4. Listed DBE fails or refuses to perform the work or furnish the listed materials.
5. Listed DBE's work is unsatisfactory and not in compliance with the contract.
6. Listed DBE is ineligible to work on the project because of suspension or debarment.
7. Listed DBE becomes bankrupt or insolvent.
8. Listed DBE voluntarily withdraws with written notice from the Contract
9. Listed DBE is ineligible to receive credit for the type of work required.
10. Listed DBE owner dies or becomes disabled resulting in the inability to perform the work on the Contract.
11. Agency determines other documented good cause.

Notify the original DBE of your intent to use other forces or material sources and provide the reasons. Provide the DBE with 5 days to respond to your notice and advise you and the Agency of the reasons why the use of other forces or sources of materials should not occur. Your request to use other forces or material sources must include:

1. One or more of the reasons listed in the preceding paragraph.
2. Notices from you to the DBE regarding the request.
3. Notices from the DBEs to you regarding the request.

If a listed DBE is terminated or substituted, you must make good faith efforts to find another DBE to substitute for the original DBE. The substitute DBE must perform at least the same amount of work as the original DBE under the contract to the extent needed to meet the DBE goal.

The substitute DBE must be certified as a DBE at the time of request for substitution.

Unless the Agency authorizes (1) a request to use other forces or sources of materials or (2) a good faith effort for a substitution of a terminated DBE, the Agency does not pay for work listed on the Exhibit 15-G *Construction Contract DBE Commitment* form unless it is performed or supplied by the listed DBE or an authorized substitute.

**Add to section 5-1.20A with:**

Contractor must coordinate with Roseville Electric and City of Roseville Environmental Utilities Department who will be performing work on this project.

**Add to section 5-1.20B with:**

In addition to the requirements of Section 5-1.20B of the State Standard Specifications, the Contractor must obtain a business license from the City of Roseville prior to performing work.

The Contractor must comply with all permit conditions and requirements. If, for any reason, the permit time limits need to be extended, it is the Contractor's sole responsibility to request such extension(s) from the City and to pay any additional fees associated with the permit extension(s). Refer to sections elsewhere in these special provisions for more detail on permits.

No separate measurement or payment must be made for compliance with permit requirements, extensions or preparation and approval of Contractor's work plan and dewatering plan. The Contractor must include the costs associated with these items in the various bid items to which the Work relates.

**Add to section 5-1.32 with:**

Attention is directed to the provisions in Section 5-1.32, "Areas for Use" of the Standard Specifications and these special provisions.

The roadway right of way must be used only for purposes that are necessary to perform the required work. The Contractor must not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work. The Contractor must not park any vehicles along residential streets within the project limits.

City owned property, easements and right of way must be used only for purposes that are necessary to perform the required work. The Contractor must not occupy the property, easements, or right of way, or allow others to occupy these, for purposes which are not necessary to perform the required work.

The Contractor must remove equipment, materials, and rubbish from the work areas and other City-owned property which the Contractor occupies. The Contractor must leave the areas in a presentable condition in conformance with the provisions in Section 4-1.13, "Cleanup" of the State Standard Specifications.

The Contractor must secure, at the Contractor's own expense, any other areas required for plant sites, storage of equipment or materials or for other purposes, if sufficient area is not available to the Contractor within the contract limits.

**Add to the end of section 5-1.32:**

Personal vehicles of your employees must not be parked on the traveled way or shoulders, including sections closed to traffic.

**Add between the 2nd and 3rd paragraphs of section 5-1.36C(3):**

Relocation of utilities shown in the following table requires coordination with your activities. Make the necessary arrangements with the utility company through the Engineer and submit a schedule:

1. Verified by a representative of the utility company
2. Allowing at least the time shown for the utility owner to complete its work

**Utility Relocation and Contractor-Arranged Time for the Relocation**

Utility	Utility address	Location	Working days
Gas	On-site	West side of work area	To be determined
Gas	On-site	South east side of work area	To be determined

**Add to section 5-1.36D with:**

The City of Roseville is a member of the Underground Service Alert (USA). The Contractor must notify USA 1-800-642-2444 at least 72 hours in advance of beginning work on the project. The Contractor is cautioned that there may be underground utility facilities within the work area including telephone, electrical, cable television, gas, water and sanitary sewer and storm drainage collection facilities.

Where possible conflicts may exist, the Contractor must verify the grade and location of existing underground utility prior to any work by careful hand digging.

It is recognized by the City and the Contractor that the locations of existing utilities as shown on the plans are approximate, their actual location is unknown. Recognition is given to the fact there may be additional existing utilities unknown to either party to the contract. Location of utilities, as shown on the drawings, represents the best information obtainable from utility maps and information furnished by the various agencies and companies involved. The City warrants neither the accuracy nor the extent of the actual utilities involved.

All existing utilities are to remain in service and operational during construction. The Contractor is responsible to coordinate all his/her activities with all utility companies for the installation of the utilities that are shown to be done by the respective utility owners. The Contractor must make necessary arrangements with the utility company through the Engineer and submit a schedule that is verified by a representative of the utility company and allowing at least the time shown for the utility owner to complete its work.

The Contractor must coordinate with City of Roseville Environmental Utilities Department regarding the work associated with the service connections and metering for the irrigation, fire and potable water.

Perform all operations necessary to excavate, expose, and verify the location of existing utility mains and laterals that may cross or be in conflict with the proposed facilities and at tie-in locations.

Notify Underground Service Alert (USA) at 1-800-642-2444 and all utility companies which have underground facilities within the limits of work 72 hours before beginning any excavation work.

Where a possible at-grade conflict with existing underground utilities appears on the plans, determine its location a minimum of 100 feet ahead of the work prior to trenching unless prior pothole information is shown. Grade and alignment changes must be made only if approved by the Engineer.

The horizontal and vertical locations shown for the existing underground utilities are approximate. It is the Contractor responsibility to locate all utility lines in the construction area prior to excavation. Any damage to existing utility, structure, or service, whether or not indicated on the plans must be repaired at the Contractor's expense in a manner approved by the Engineer.

Submit a report for each pothole. The report must be typed and clearly drawn to show all necessary details, including:

1. Sketch showing the location, date, depth, conditions encountered, person in charge of potholing, and any other information requested by the Engineer
2. Utility and City Public Work person(s) notified

Do not proceed with excavation operations where underground utilities lie as shown on the plans or marked by USA until related potholing work has been completed to the satisfaction of the Engineer. Notify the Engineer of any potential conflicts with underground utilities.

Hand dig as necessary to protect existing utilities.

Notify the Engineer of conflicts in which there is less than two foot of separation between the existing and proposed utility.

In the event the Contractor discovers utilities not identified on the plans or by the utilities, the Contractor must immediately notify the Engineer and the utility owners by the most expeditious method reasonably available and later confirm in writing.

Full compensation for conforming to the requirements of this section, not otherwise provided for, is considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

#### **5-1.26 CONSTRUCTION STAKING**

The requirements specified in Section 5-1.26 of the State Standard Specifications are replaced as follows:

The Contractor is responsible to hire a licensed land surveyor to provide all surveys to control the lines, elevations and dimensions of the work in conformance with the plans. Any deviation from



If the plan requires revisions, the Engineer provides comments. Submit a revised plan within 7 days of receiving comments. Allow 7 days for the review.

**6-1.03B(3) Analytical Test Results**

At least 15 days before placing local material, submit analytical test results for each local material obtained from a noncommercial source or a source not regulated under CA jurisdiction. The analytical test results must include:

1. Certification signed by an engineer who is registered as a civil engineer in the State or a professional geologist licensed as a professional geologist by the State stating:

The analytical testing described in the local material plan has been performed. I performed a statistical analysis of the test results using the US EPA's ProUCL software with the applicable 95 percent upper confidence limit. I certify that the material from the local material source is suitable for unrestricted use at the job site, it has a pH above 5.0, does not contain soluble lead in concentrations equal to or greater than 5mg/l as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II, does not contain lead in concentrations above 80 mg/kg total lead, is free from all other contaminants identified in the local material plan, and will comply with the job site's basin plan and water quality objectives of the RWQCB.

2. Chain of custody of samples
3. Analytical results no older than 1 year
4. Statistical analysis of the data using US EPA's ProUCL software with a 95 percent upper confidence limit
5. Comparison of sample results to hazardous waste concentration thresholds and the RWQCB's basin plan requirements and water quality objectives for the job site location

**6-1.03B(4) Sample and Analysis**

Sample and analyze local material from a (1) noncommercial source or (2) source not regulated under CA jurisdiction:

1. Before bringing the local material to the job site
2. As described in the local material plan
3. Under US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)

The sample collection must be designed to generate a data set representative of the entire volume of proposed local material.

Before excavating at the (1) noncommercial material source or (2) a source not regulated under CA jurisdiction, collect the minimum number of samples and perform the minimum number of analytical tests for the corresponding maximum volume of local material as shown in the following table:

**Minimum Number of Samples and Analytical Tests for Local Material**

Maximum volume of imported borrow (cu yd)	Minimum number of samples and analytical tests
< 5,000	8
5,000–10,000	12 for the first 5,000 cu yd plus 1 for each additional 1,000 cu yd or portion thereof
10,000–20,000	17 for the first 10,000 cu yd plus 1 for each additional 2,500 cu yd or portion thereof
20,000–40,000	21 for the first 20,000 cu yd plus 1 for each additional 5,000 cu yd or portion thereof
40,000–80,000	25 for the first 40,000 cu yd plus 1 for each additional 10,000 cu yd or portion thereof
> 80,000	29 for the first 80,000 cu yd plus 1 for each additional 20,000 cu yd or portion thereof

Do not collect composite samples or mix individual samples to form a composite sample.

Analyze the samples using the US EPA's ProUCL software with a 95 percent upper confidence limit. All chemical analysis must be performed by a laboratory certified by the SWRCB's Environmental Laboratory Accreditation Program (ELAP).

The analytical test results must demonstrate that the local material:

1. Is not a hazardous waste
2. Has a pH above 5.0
3. Has an average total lead concentration, based upon the 95 percent upper confidence limit, at or below 80 mg/kg
4. Is free of possible contaminants identified in the local material plan
5. Complies with the RWQCB's basin plan for the job site location
6. Complies with the RWQCB's water quality objectives for the job site location

#### **6-1.03C Local Material Management**

Do not place local material until authorized.

If the Engineer determines the appearance, odor, or texture of any delivered local material suggests possible contamination, sample and analyze the material. The sampling and analysis is change order work unless (1) hazardous waste is discovered or (2) the analytical test results indicate the material does not comply with section 6-1.03B(3).

Dispose of noncompliant local material at an appropriately permitted CA Class I, CA Class II or CA Class III facility. You are the generator of noncompliant local material.

### **Add to section 6-1:**

#### **6-1.06 BUY CLEAN CALIFORNIA ACT**

##### **6-1.06A General**

The following materials or products are subject to the Buy Clean California Act (Pub Cont Code § 3500 et seq.):

Material or product	Material specifications
Carbon steel rebar	Section 52-1.02B, "Bar Reinforcement"
Structural steel	Section 55-1.02D(1), "General," – Structural Steel table or Section 99, "Building Construction"
Flat glass	Section 99, "Building Construction"
Mineral wool board insulation	Section 99, "Building Construction"

For product category rules and North America program operators for applicable materials or products, go to the METS website.

For projects with bid opening dates after November 30, 2018, through November 30, 2019, the Department collects existing environmental product declarations for materials or products subject to the Buy Clean California Act.

##### **6-1.06B Definitions**

**environmental product declaration:** Independently verified document created and verified in accordance with International Organization for Standardization (ISO) 14025 for Type III environmental declarations that identifies the global warming potential emissions of the facility-specific material or product through a product stage life cycle assessment.

**product category rule:** Program operator established rule based on the science of life cycle assessment that governs the development of the environmental product declaration for the material or product.

**product stage:** Boundary of the environmental product declaration that includes (1) raw material supply, (2) transportation processes, and (3) processing operations, including operations such as melting, mixing, fabrication, finishing, curing, cooling, trimming, packaging and loading for transport delivery. Commonly referred to as a "cradle-to-gate" life cycle assessment.

**program operator:** Independent agency that supervises and confirms the full environmental product declaration development process in accordance with ISO 14025.

**raw material supply:** Upstream processes which can include allocations, extraction, refinement, reclamation, handling and processing of the constituents used in producing the material or product.

**transportation processes:** Includes transportation of raw, reclaimed or recycled material constituents from the supplier to the gate of the manufacturer, producer or fabricator. Includes transport of related waste products.

### **6-1.06C Submittals**

At least 15 days before submitting environmental product declarations, you must register on the Department's Data Interchange for Materials Engineering. Follow the registration process at:

<https://dime.dot.ca.gov/>

Submit available environmental product declarations for applicable materials or products as informational submittals to the Department's Data Interchange for Materials Engineering and provide PDF copies to the Engineer.

### **Add to section 6-2.01A with:**

Material testing for this project will be provided by the City as set forth in Section 6 "Control of Materials" of the State Standard Specifications.

The City uses a Quality Assurance Program (QAP) to ensure a material is produced to comply with the Contract.

Samples, certificates of compliance, list of materials and material sources, access to facilities, requests for testing and all other data relating to material testing shall conform to Section 6 "Control of Materials" of the State Standard Specifications. Contractor shall provide the Engineer with three (3) working days' notice of the need for materials testing.

The Engineer will deduct the costs for testing of materials and work found to be unacceptable, as determined by the tests performed by the Department, and the costs for testing of material sources identified by the Contractor which are not used for the work, from moneys due or to become due to the Contractor. The amount deducted will be determined by the Engineer.

Full compensation for conforming to all requirements specified in this section, "Control of Materials," shall be considered as included in the contract price paid for other items of work and no additional compensation will be allowed.

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## 7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

### 7-1.03 PUBLIC CONVENIENCE

Attention is directed to Section 7-1.03, Public Convenience," of the State Standard Specifications.

At the Pre-Construction meeting, the Contractor must submit a Traffic Control Plan to the Engineer for review and acceptance. The Contractor will not be allowed to begin work until a traffic control plan has been accepted by the Engineer. A copy of the traffic control plan must be kept at the job site at all times.

The Contractor must coordinate with and notify the Police, Fire, Public Information, Environmental Utility Department, and School and Public Transportation for the City of Roseville, ambulance services, and post office with-in 72 hrs of any roadway or lane closures.

Personal vehicles of the Contractor's employees must not be parked within the secured area of the City's Corporation Yard.

Full compensation for complying with the requirements of this section is considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

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## 8 PROSECUTION AND PROGRESS

### **Add to section 8-1.02 with:**

Attention is directed to the provisions in Section 8-1.02, "Schedule" of the Standard Specifications and these special provisions.

In addition to Section 8-1.02, "Schedule," of the State Standard Specifications, the Contractor shall submit a draft progress schedule to the Engineer at the pre-construction meeting, final work progress schedule 10 days prior to work commencement of work, and within 5 working days of the Engineers written request at any other time. The progress schedule shall state the location of work with stationing, the anticipated begin and completion dates and the type of construction operation anticipated for the locations of work with stations. Work that exceeds the stated completion date shall be understood as being out of conformance with the progress schedule and these Special Provisions.

The progress schedule shall clearly show the sequence and interdependence of construction activities and shall list specifically activities for obtaining, delivering, installing and completing of each major piece of equipment, materials and other supplies.

The construction schedule shall:

- a) Be a calendar-time scaled network diagram.
- b) Include time for the Engineer to review submittals or inspect the work.
- c) Identify the activities, which constitute the controlling operation or critical path.

At the discretion of the Engineer, the Contractor shall attend a meeting one day per week for the duration of the project to discuss the project's schedule and construction issues with the City. Meetings will be held at a location to be determined at a later date by the City.

Once each month, or as deemed necessary by the Engineer, the Contractor shall submit a revised progress schedule and participate with the Engineer in a schedule review to update activity progress.

Strict conformance to the progress schedule shall be maintained and revisions to the progress schedule may be allowed only upon written approval by the Engineer.

Scheduling of change orders or extra work orders is the responsibility of the Contractor. The Contractor shall revise the schedule to incorporate all activities involved in completing the change orders or extra work order and submit it to the Engineer for review and approval. With the concurrence of the Engineer, change or extra work orders of a magnitude less than \$500 do not need to be scheduled, unless the order affects the project schedule or outside parties.

If the Engineer finds the Contractor is entitled to an extension of any completion date under the provisions of the contract the Engineer's determination of the total number of days extension will be based upon the current analysis of the schedule and upon data relevant to the extension.

The Contractor acknowledges and agrees that delays to non-critical activities (those with float) will not be the basis for a time extension. Non-critical activities are those activities which, when delayed, do not affect the contract completion date. All float time will jointly belong to the City and Contractor.

Payment for work under this section shall be deemed included in other contract items, and no additional compensation shall be allowed therefor.

**Add to Section 8-1.03:**

Attention is directed to the provisions in Section 8-1.03, "Time", and Section 8-1.10, "Liquidated Damages", of the State Standard Specifications and these Special Provisions. In addition to Section 8 of the State Standard Specifications, the following apply:

The Contractor must begin work within 15 calendar days after receiving the Notice to Proceed from the City of Roseville.

All work must be completed within **100 working days** from the date of the Notice to Proceed.

All punch list items must be completed within the specified contract working days. The project will not be accepted until all punch list items are completed.

**Replace paragraphs of section 8-1.04B with:**

The Contractor shall begin work within 15 days after receiving the "Notice to Proceed" letter executed by the Director of Public Works or authorized staff and shall thereafter diligently prosecute the work to completion.

Preconstruction Meeting – A preconstruction meeting shall be held between the Contractor and the Engineer for the purpose of discussing the scope of work, contract drawings, specifications, existing conditions, materials to be tested, equipment to be used, and all essential matters pertaining to the prosecution and the satisfactory completion of the project as required. The Contractor's representative at this conference shall include all major superintendents for the work and may include major subcontractors and material suppliers.

**Add to section 8-1.06 with:**

In addition to the requirements specified in Section 8-1.06, "Suspensions", of the State Standard Specifications, the following shall apply:

**Suspensions of Work Ordered by the Engineer** – If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Engineer in writing a request for adjustment within seven (7) calendar days of receipt of the notice to resume work. The request shall set forth the reasons for such adjustment.

Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost or time or cost and time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier, and not caused by the weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Engineer will notify the Contractor of this determination whether or not an adjustment is warranted. No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.

No contract adjustment will be allowed under the provisions specified in this section to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any term or condition of this contract.

Any contract adjustment warranted due to suspension of work ordered by the Engineer will be made in the same manner as provided for right-of-way delays in Section 8-1.07 "Delays", of the State Standard Specifications.

**Add to section 8-1.10 with:**

The Contractor shall pay to the City of Roseville the sum of **\$5,000.00 per day**, for each and every calendar day's delay in finishing the work (including resident engineer and inspection time) in excess of the number of working days prescribed.

Any progress payment made after the completion date shall not be construed as a waiver of liquidated damages.

The Contractor must prepare a Progress Schedule that proposes to construct the improvements in the most efficient manner to cause the least disruption to driveway access and vehicle traffic. The Progress Schedule will be reviewed by the Engineer to determine if the Contractor is proposing the most efficient manner for the improvements. The Progress Schedule will be revised until it meets the satisfaction of the Engineer related to causing the least disruption to driveway access and vehicle traffic.

Full compensation for complying with the requirements of this section is considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

**Add to section 8-1.10B with:**

The roadway shall be fully opened to traffic by 4:30 pm. The Contractor shall pay to the City liquidated damages of \$1,000 per each half-hour after 4:30 pm is exceeded and that a traveled lane remains closed due to the Contractor's operations.











actual field conditions and the Plans shall be brought to the attention of the Project Manager. The lack of notification shall indicate that the Contractor assumes full responsibility for any revision deemed necessary to ensure proper installation.

#### Product Delivery, Handling and Storage

- A. All materials shall be delivered bearing manufacturer's label with size, type and model number (if applicable) clearly marked.
- B. All pipe shall be delivered in a vehicle which allows the material to lie flat without concentrated weight or stress at any point.
- C. Unload all materials with care so as to avoid damage. Store materials in a covered area and do not expose PVC pipe to extreme sun or heat. Store pipe lying flat.
- D. Do not install any material that has been damaged. Replace all material found to be damaged.

#### Record Drawings

- A. The Contractor shall keep an accurate record of the as-built conditions of the irrigation system. These records shall be updated daily and kept at the construction site. At any time, the Inspector may examine the conditions of the "as-builts" to ensure compliance of the above.
- B. Dimensions shall be recorded from two (2) permanent points of reference.
- C. The City may at its discretion withhold progress payments to the Contractor if the as-built records are not updated to the satisfaction of the City.

#### **Add to section 20-2.01A(3) Submittals**

Submittals for specified items are not required for Parks or Streetscape projects, unless specifically listed below. However, submittals are required for any proposed substitutions or deviations from the parks Plans or Specifications. For Streetscapes, no substitutions will be accepted. The Contractor shall submit a materials summary sheet indicating which items will be installed as specified and which items are proposed for substitutions. The Contractor shall submit proof of order within ten (10) working days of the Notice to Proceed, indicating all specified materials have been ordered, noting "as specified" or "substitution proposed".

#### **Add to section 20-2.01A(4) Quality Assurance**

All work shall comply with local and state laws, codes, regulations and requirements which govern any portion or all of the work contained in this Section. These include, but are not limited to, the latest editions of:

1. City of Roseville Park Construction Standards,
2. City of Roseville Design and Construction Standards,
3. City of Roseville Electric Department Standard Specifications,
4. Local, state and federal electrical codes, manuals and guidelines, and
5. Local, state and federal plumbing codes, manuals and guidelines.

#### **Add to section 20-2.01B Materials**

#### General

A. All materials specified shall be new, bearing the brand name, type, serial numbers and model number as shown on the Plans and as specified herein, unless otherwise accepted in writing.

Backfill Material

A. Backfill shall be clean, screened, on-site material, free from organic material, large clods of earth and/or rock larger than one (1) inch in diameter, trash, debris, rubbish, tree trunks, broken concrete or asphalt and other unacceptable material.

B. Material larger than one (1) inch shall be removed from site and legally disposed. All removal shall be the responsibility of the Contractor.

Meter

No new meter is required for the new irrigation configuration as there is already an existing meter on site that services the existing irrigation system. The new irrigation as shown on plans is connecting to the existing system and therefore will utilize the existing irrigation meter.

Backflow Prevention Device

No new Backflow device is required for the new irrigation configuration as there is already an existing backflow device on site that services the existing irrigation system. The new irrigation as shown on plans is connecting to the existing system and therefore will utilize the existing backflow device.

Filter (Recycled Water Only)

No new filtration device is required for the new irrigation configuration as this system is a culinary connection and there is no culinary irrigation requirement for filtration.

Flow Sensor and Master Valve

No new flow sensor or master valve devices are required for the new irrigation configuration as there are existing devices on site that service the existing irrigation system. The new irrigation as shown on plans is connecting to the existing system and therefore will utilize the existing devices.

Booster Pump

No new booster pump device is required for the new irrigation configuration.

Pipe

A. PVC Pressurized Mainline

1. For lines three inch (3") or larger: polyvinyl chloride (PVC) 1120-1220, SDR 21, Class 200 rubber gasketed pipe, and NSF accepted per Standard No. 14, Type I, Grade I. Conform to:

Material	ASTM
Pipe	D1784, D2241
Rubber Gasket	F477

2. For lines two and one half inches (2-1/2") or smaller: Schedule 40 polyvinyl chloride (PVC) 1120-1220, and NSF accepted per Standard No. 14, Type I, Grade I. Conform to:

Material	ASTM
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Pipe	D1784, D1785
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B. PVC Non-Pressurized Lateral Lines

1. Schedule 40 polyvinyl chloride (PVC) 1120-1220, SDR 21.0, NSF accepted per Standard No. 14, Type 1, Grade II.

Fittings and Nipples

A. Fittings for Mainline Pipe:

1. For all control valves on mainlines three inches (3") and larger, use painted, ductile iron saddle taps with double stainless steel straps and nuts Model #202 by Romac Industries, Inc. or accepted equal.
2. For all other connections on mainlines three inches (3") and larger mainline pipe, use glued schedule 80 fittings.
3. For all connections on mainlines two and one half inches (2-1/2") or smaller, use glued schedule 40 fittings.

B. Fittings for Solvent Weld Pipe:

1. Schedule 40 for 2 1/2" pipes or smaller and Schedule 80 for 3" pipe and larger polyvinyl chloride (PVC), standard weight, conforming to ASTM D2466-73. Use Schedule 80 for all recycled water systems.
2. Weld-on #P-70 primer and Weld-on #711 gray glue or accepted equal.
3. Teflon tape for all threaded PVC fittings.

C. Plastic Nipples shall be Schedule 80, Type 1, Grade 1, polyvinyl chloride (PVC), threaded at both ends, and conforming to ASTM D1784 -85. Nipples shall be uniformly gray.

D. Fittings for Recycled Pipe:

1. Fittings shall meet the standards outlined in Sections 2.09, A, B and C above, unless otherwise noted in the City of Roseville Design and Construction Standards for recycled water, latest edition.

Swing Joints

A. Swing joints shall be as shown in the City Parks Construction Standard detail. Schedule 40 threaded PVC triple swing joints or an accepted equal.

Electric Remote-Control Valve

A. Sizes as shown on the Plans. All valves shall be Hunter ICZ series or accepted equal and shall contain the following:

1. a globe-type electric remote control, normally closed diaphragm type with slow opening and closing action,
2. encapsulated solenoid type actuation,
3. a minimum rating of twenty-four (24) volts,
4. sixty (60) cycle,

5. two to five (2-5) watts,
  6. a manual flow adjustment with shut-off provisions,
  7. provisions for an external "bleed" of the diaphragm chamber for manual operation.
  8. a ball valve on the inlet.
  9. Schedule 80 PVC threaded fittings from saddle tap to POC to valve.
- B. Valve boxes shall be rectangular, rigid plastic valve boxes with lockable lids and extensions by Carson Industries, LLC or accepted equal. Valve box shall be sized appropriately to house entire valve assembly with space to accommodate maintenance access.
1. Boxes shall be colored green in potable applications, and purple for recycled water applications.
  2. Valve boxes used on recycled water systems shall be permanently colored purple through the manufacturer. Boxes painted purple will be rejected.
  3. Label lids using heat branded identification, T:Turf, S:Shrubs, B:Bubblers
- C. Controller station identification number shall be standard yellow tags with permanent numbers by Christy or accepted equal.

#### Root Watering System

No root watering system components are required for the new irrigation configuration.

#### Irrigation Heads

No overhead spray irrigation heads are required for the new irrigation configuration.

#### Drip Irrigation

All drip irrigation is designed to be a "Point-Source" system utilizing the following components. This system is connected to supply laterals underground as shown in the irrigation details supplied on the irrigation details construction document.

Hunter Products: 1" ICZ

- The kit shall be offered in durable low, medium and high-flow versions.

Hunter Products: ICZ-101

- The kit shall offer factory-installed Filter Sentry.
- The kit shall be available in 25 PSI or 40 PSI (1.7 or 2.8 bar; 170 or 280 kPa) regulator versions.
- The kit shall have a flow of 2 to 20 GPM (120 to 1,200 GPH)
- The kit shall have an operating pressure of 20 to 120 PSI (1.4 to 8.0 bar; 140 to 800 kPa).
- The kit shall have an operating temperature of up to 120 F (66 C).
- The kit shall feature a 150 mesh (100 microns) stainless steel screen.

Distribution Tubing

- The product shall offer stability and flexibility when using point-source emitters or micro sprays.

- The product shall be constructed of high-quality vinyl or polyethylene for connection to acetal ¼" fittings.
- Product dimensions are .250" x .170"
- The product shall be offered in vinyl for cooler climate installations.
- The product shall be offered in polyethylene for warmer climate installations.

#### POINT-SOURCE Emitters

- The product shall offer accurate irrigation in a wide range of flow rates.
- The product shall feature pressure-compensating for consistent and reliable flow.
- The product shall be color-coded by flow for easy identification.
- The product shall be offered in earth-tone colors that blend in with the surrounding environment.
- The product shall be offered in three inlet variations: ¼" barb, 10-32 thread, ½" FPT.
- The product shall have coined edges for easy grip.
- The product shall have a self-piercing barb.
- The product shall have an optional diffuser cap.
- The product shall have a self-flushing diaphragm.

#### HEB Emitters

- Provide low-volume point-source emission devices, to efficiently deliver irrigation water in close proximity to the plant. The emitters shall have three options for installation to supply: Self-piercing barb, 10/32 thread and ½" thread. External surfaces shall be constructed from UV-resistant acetyl materials and be self-flushing to minimize clogging.
- Emitters shall all be color coded by flow rate for ease of identification:
  - Blue emitter indicates a flow rate of 0.5 GPH (1,89 l/hr)
  - Black emitter indicates a flow rate of 1.0 GPH (3,79 l/hr)
  - Red emitter indicates a flow rate of 2.0 GPH (7,57 l/hr)
  - Tan emitter indicates a flow rate of 4.0 GPH (15,14 l/hr)
  - Orange emitter indicates a flow rate of 6.0 GPH (22,71 l/hr)
- Emitters shall also be marked with the flow rates in both Imperial and Metric units on the emitter. Emitters shall be pressure compensating over the pressure range of 20 to 50 PSI (1,4 to 3,5 bar) with consistent flow rate per emitter.
- Self-piercing barb inlet emitters with self-piercing barb inlet permit one-step insertion into ½" (13 mm) or ¾" (19 mm) drip tubing when installed with Pocket Punch or HEMT tools.
- Self-Piercing Barb Models:
  - HE-050-B (Blue); 0.5 GPH (1.9 l/hr)
  - HE-10-B (Black); 1.0 GPH (3.8 l/hr)
  - HE-20-B (Red); 2.0 GPH (7.6 l/hr)
  - HE-40-B (Tan); 4.0 GPH (15.1 l/hr)
  - HE-60-B (Orange); 6.0 GPH (22.7/hr)

#### Thrust Blocks

- A. All thrust blocks shall be concrete. The size of the blocks shall be determined by the average safe soil-bearing load of 700 lbs. per square foot.
- B. Polyethylene sheeting at thrust blocks shall be 6mil.

#### Quick Coupler Valves

No quick coupler valves are required for the new irrigation configuration.

Manual Valves

No manual valves are required for the new irrigation configuration.

Automatic Irrigation Controller

No new controllers are required for the new irrigation configuration. Connect all irrigation control valves are to be connected to the existing controller that services the existing irrigation system. Install all required decoders or auxiliary components that are required by the existing controller for adding valves.

Control Wires

- A. Direct burial solid copper wire AWG-U.F. 600 volt.
- B. Common wire and two spare wires shall be minimum #12-gauge.
- C. Pilot wires shall be red, minimum #14-gauge. Wire gauge shall be, at minimum:

<b>Wire Gauge</b>	<b>#14</b>	<b>#12</b>	<b>#10</b>	<b>#8</b>
<b>Max. Distance (ft.)</b>	2,500	3,250	4,000	4,800

- D. Splices:
  - 1. Wire connections at remote control valves only shall utilize 3M direct bury splice kit model #DBY (yellow) or model #DBR (red).
  - 2. All other splices, including line splices, connections to flow meters and other sensors, shall utilize 3M Scotchcast 3570G Connector Sealing Packs, no known equal.

E. Wiring colors shall be:

<b>USE</b>	<b>COLOR</b>
Flow	Yellow
Master	Blue
Pump	Black
Valves	Red
Common	White
Spare	Orange
Tracer	Green

Sleeves

- A. Schedule 40 PVC 1120-1220 and two times the diameter of the pipe to be accommodated by the sleeve, one (1) for control wires and one (1) for main line, and one (1) for lateral lines.
- B. Maximum one (1) line per sleeve.
- C. Add one (1) spare, same size as largest.

Tracer Wire

- A. Insulated solid copper wire, minimum #12 gauge. Color shall be green.

**Add to Section 20-2.01C Construction**

Site Conditions

- A. Prior to start of irrigation work, review the site conditions to verify that stub- outs, points of connections, sizes of the points of connections, water pressure and other essential items necessary for irrigation work to commence are as shown on the Plans and as indicated in the Specifications.
- B. Notify the Inspector immediately of any existing conditions which are unacceptable for the commencement of irrigation work.

Coordination of Work

- A. Coordinate all work with other trades.
- B. The irrigation plan is diagrammatic. Whenever possible, locate all pipes in planted or turf areas. Do not scale off of the Plans. Where field conditions have changed, notify the Inspector immediately.

Excavation and Trenching

- A. Trenches shall be dug straight and in such a manner as to completely support the pipe continuously along the bottom of the trench. In rocky conditions, over- excavation and placement of clean bedding material may be required to ensure protruding rocks do not place undue stress on pipes. Trench layout shall follow that shown on the Plans, except where accepted by the City.
- B. The following minimum cover shall be provided for pipe

Pipe Type	Minimum Cover
Pressurized Mainlines	24"
Non- Pressurized Lateral Lines	18"
Domestic Water Lines	24"
Control wires	24"
PVC Sleeves under Paving	18"
PVC Sleeves under Auto X-ings	24"

- C. Install detection wire, looped in and out of valve boxes and attached to all irrigation mainlines.
- D. High voltage wires shall not be installed in the same irrigation water line trench.

Testing and Flushing

- A. Pressure Testing shall occur only when the following conditions can be fulfilled:

Item Description	Condition
Quick coupler valves	Installed and capped
Electric remote control valves	Installed
Flow valve	Installed and open
Ball/Gate valves	Installed and open
Lateral lines	Disconnected
Welded PVC joints	Cured at least 24 hours
Pipe	Center loaded with backfill
Concrete Thrust Blocks	Installed and cured at least 48 hours
Couplings and fittings	Exposed

Detection wire	Installed
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- B. A pressure gauge shall be installed at the lowest point of the line. Continuous pressure shall be applied at a rate of 125 psi for all mainlines. The pressure shall remain stable for a minimum of two hours with no detectable leakage. Upon completion of the test, a complete examination of the line shall be conducted by the City. Leaks resulting from the test shall be repaired and the line shall be re-tested. This process shall be repeated until the line passes the leakage test.
- C. All lines and risers shall be flushed prior to final installation of irrigation heads. All control valves shall be left open during the flushing process.

Backfilling and Compacting

- A. Backfilling of trenches shall not occur until all tests and reviews have been performed. See inspection record contained in the Parks Construction Standards, latest edition. Any trench that is prematurely backfilled may be required to be re-dug for review.
- B. Compaction of the trenched areas shall meet the following compaction rates of 95% in areas to receive paving and 85% in areas to be planted.
- C. Do not flood trenches unless otherwise accepted by the City.
- D. Sunken trenches shall be re-finished flush with the adjacent grades.

Backflow Prevention Device and Enclosure

No new Backflow device is required for the new irrigation configuration as there is already an existing backflow device on site that services the existing irrigation system. The new irrigation as shown on plans is connecting to the existing system and therefore will utilize the existing backflow device.

Flow Meter Installation

No new flow meter is required for the new irrigation configuration as there is already an existing flow meter on site that services the existing irrigation system. The new irrigation as shown on plans is connecting to the existing system and therefore will utilize the existing irrigation flow meter.

Booster Pump Installation

No new booster pump device is required for the new irrigation configuration.

3.09 Pipe Installation

- A. Install irrigation pipe in planted areas whenever possible.
- B. All pipe and fittings shall be cleaned and free from dirt, dust and moisture.
- C. Pipe may be assembled along the trench at grade to avoid undue strain on the pipe or the fittings. All solvent weld connections shall be primed before applying glue. Snake the pipe within the trench to compensate for expansion and contraction.
- D. All PVC pipe and metal valve connections shall be made with threaded fittings consistent with drawings PK-15 and PK-16 of the City of Roseville Parks Construction Standards.
- E. All PVC-to-PVC threaded connections shall be made with Teflon tape.

F. Install concrete thrust blocks in locations where rubber gasketed irrigation mainlines change directions, e.g. ells, tees; as required on other lines and fittings; and at the termination point of the mainline. Do not conduct a pressure test within 48 hours of the thrust block pours. The size of the thrust blocks shall be per manufacturer's instructions and shall be adequate in size to absorb thrusts up to the maximum internal water pressure. Refer to 3.18 Thrust Blocks.

G. Use glued fittings for all connections inside of a sleeve and within 20' of a sleeve.

#### Electric Remote-Control Valves

A. Install per local codes, manufacturer's instructions, City of Roseville Design and Construction Standards and as shown on the Plans.

B. Install one (1) electric remote control valve per box and whenever possible, group valve boxes together. Align boxes in a straight and neat row and flush to finish grade. Provide a minimum of six (6) inches between boxes.

C. All valves shall be tagged for easy identification of valve number. Valve box lids shall be permanently marked identifying valve number and controller letter with heat branding using stencils in a uniform location on all boxes throughout.

D. Each valve shall be separately saddle tapped. Manifoldd valves shall be rejected.

E. Locate valve boxes outside of turf areas, adjacent to paving, i.e. sidewalks, hardscape, etc. except where shown on the Plans.

F. Provide a minimum of eighteen (18) inches of a complete set of spare control wires, looped, within all control valve boxes.

#### Irrigation Heads

No overhead spray irrigation heads are required for the new irrigation configuration.

#### Drip Irrigation

A. Drip irrigation is to be installed in a grid pattern layout of equal spacing between rows, unless otherwise noted on approved plans.

B. All drip irrigation shall be installed, per manufacturer's specifications. Staple all tubing to soil at 5 feet on-center spacing prior to backfilling.

C. Drip line shall be installed prior to plant installation, with the exception of 15- gallon and larger plant container sizes, which may be installed first at the discretion of the contractor.

#### Quick Coupler and Gate Valves

No quick coupler valves are required for the new irrigation configuration.

#### Automatic Controller

No new controllers are required for the new irrigation configuration. Connect all irrigation control valves are to be connected to the existing controller that services the existing irrigation system. Install all required decoders or auxiliary components that are required by the existing controller for adding valves.

#### Control Wires

A. Wherever possible, install control wires in common trenches with mainline. The wires shall be taped in bundles at ten (10) feet on center and laid to the side of the pipe. Provide slack between ties to allow for contraction.

- B. Wire valve to controller as shown on the plans.
- C. Where runs are long, provide an extra three (3) feet of extra ground and control wires looped at 200' intervals. Snake wires within trenches to allow for contraction.
- D. Line splices shall occur in valve boxes at grade, label and allowed only on lengths greater than 2500'. Show locations on as-built plans.
- E. Do not wrap wire around pipe or allow any wiring to be placed in concrete or concrete thrust blocks.
- F. Install two (2) spare wires starting from the controller, looped to each valve box to the furthest valve box, without splices.

#### Tracer Wire

- A. Install tracer wire on top of the mainline.
- B. Provide a twelve-inch (12") loop in and out of each valve box. Solder all splices.
- C. Where potable water lines are placed in a separate trench, install a tracer wire on top of the potable water line.
- D. Tracer wire shall be tested during review and pressure test of the mainline.

#### Sleeves

- A. Install sleeves under all pavement and as shown on the Plans.
- B. Install sleeves at the depths indicated in Section 3.03B above.
- C. Extend sleeves a minimum of twelve (12) inches beyond the edge of pavement.
- D. At every sleeve location installed in roadways, provide a spare PVC sleeve capped at each end and marked with a 3M ball marker.

#### Thrust Blocks

- A. Install polyethylene sheeting between mainline and concrete.
- B. Thrust blocks shall be formed against a solid trench wall. The thrust block cavity shall be in undisturbed soil or previously placed compacted backfill that yields an acceptable allowable bearing pressure.
- C. Concrete thrust blocks shall not be poured on valve wires.

#### Cross Connection Testing for Recycled Water Systems

- A. The Recycled Water System shall be tested for cross connection in accordance with Uniform Plumbing Code Appendix J prior to use.
- B. All testing of Recycled Water Systems must be performed utilizing a potable water source via a construction water connection per City of Roseville Construction Standards. No Recycled Water may enter a Recycled Water System until all testing is successfully completed.
- C. At the time a cross connection test is to be performed, construction on both the Potable and Recycled Water Systems being tested must be complete and both systems fully operational and functioning as designed.
- D. Cross connection testing shall be performed in the system by City forces with the assistance of the contractor. The test must be coordinated through the Parks Department

Inspector. Forty-eight (48) hours' notice is required before the test. Depending on complexity of the site, a preliminary field meet may be required.

#### Coverage Test

- A. Prior to planting, the Contractor shall perform a coverage test to confirm that water coverage is complete, adequate, and produces no overspray onto hardscapes. Irrigation pressure readings at the head or emission device may also be taken as part of the coverage test to confirm adequate system hydraulics.
- B. The coverage test shall be performed on the entire irrigation system and shall be performed in the presence of the Parks Inspector. The irrigation system must be connected to the City water system through the water meter. Temporary connections are not allowed. On recycled water systems, the coverage test shall take place only after successful completion of the cross-connection test, with the recycled water meter in place.
- C. On Park projects containing turf, a comprehensive survey of the Distribution Uniformity (Low Quarter) of each irrigation zone containing turf shall be performed by a third-party, certified irrigation auditor prior to planting of turf. The irrigation system must be 100% complete, including functionality of the irrigation controller and booster pump, if present. The irrigation auditor shall prepare and submit a report listing each zone's Distribution Uniformity, including actual mapping data of individual catch cans recorded on irrigation plan sheets, and noting any potential deficiencies in the system leading to any inadequate findings. Reported deficiencies in Distribution Uniformity will be evaluated by the Project Manager and may require corrective measures prior to approval of turf planting. Deficiencies caused by improper installation shall be corrected at no additional cost to City.

#### Irrigation Audit

- A. A landscape irrigation audit shall be performed after all landscape and irrigation is installed. The irrigation system must be 100% complete, including functionality of the irrigation controller and booster pump, if present.
- B. All landscape irrigation audits shall be conducted by a third party certified landscape irrigation auditor. Landscape audits shall not be conducted by the person who designed the landscape or installed the landscape.
- C. The water audit shall conform to the specific water audit requirements of the City of Roseville Environmental Utilities Department, and any supplemental requirements from the City of Roseville Parks, Recreation & Libraries Department. The contractor shall submit a comprehensive landscape irrigation audit. This shall include, but is not limited to:
1. A completed Irrigation Audit Report-(City of Roseville provided forms only)
  2. Complete system evaluation, including site conditions, system and flow data.
  3. Scheduling parameters used to set the irrigation controller.
  4. An Irrigation schedule for the landscape provided to the owner.
- D. A minimum of 25% of all zones shall be audited. The 25% minimum shall be a representative sample of each irrigation method present (i.e. Rotors, bubblers, rotary nozzles, drip, etc.), and is in addition to any turf zones audited during the coverage test.
- E. Any deficiencies noted in the audit report such as, but not limited to, run-off, overspray, obstruction of spray patterns, etc., shall be corrected and signed off as such by the original irrigation auditor prior to submission of the report. Do not submit audit reports with uncorrected deficiencies.

## Clean Up

A. Each phase of work shall be immediately cleaned up. Excess equipment, material, etc., shall be legally disposed of and removed from site. All concrete, asphalt and/or decomposed granite paving shall be kept free of soil. Damage to such surfaces shall be immediately repaired to the satisfaction of the City.

### **Insert Section 20-2.15 GUARANTEE:**

#### 20-2.15A General

A. Contractor shall provide a written guarantee covering all materials, equipment and workmanship furnished by him to be free of all defects after installation is accepted, including all defective parts that may have been found.

B. All paved areas shall be swept clean and planted areas shall be weed-free.

C. All irrigation heads shall be properly adjusted. Debris and refuse shall be removed from site prior to inspection.

#### 20-2.15B Pre-Final (Punch List) Review

A. See Section 01 10 00 1.16 - Summary of Work for notification process.

#### 20-2.15C Establishment

A. Full automated utilization of the irrigation system shall be included as part of the maintenance of the project. See Section 329000: Planting for additional information.

B. Program and utilize the establishment schedule as submitted with the turn-in items.

C. Contractor to run the system in "quantity" mode or "time plus flow" for a minimum of one (1) week.

D. Check the irrigation system weekly to ensure proper operations. Make all necessary adjustments, including watering schedule to ensure proper and healthy plant growth. At no time shall pools of water be present within any part of the project. Conversely, at no point shall dry or under-watered spots be visible upon inspection. Improper irrigation management resulting in flooding or dry conditions to the detriment of plant material may constitute an extension of the establishment period, at no additional cost to the City.

#### 20-2.15D Final Review

A. The Contractor shall demonstrate to the City, valve by valve, the entire irrigation system to be operable. All heads shall be adjusted/flushed and all drip zones shall be flushed prior to the on-site review. Any item requiring adjustments shall be completed immediately and to the satisfaction of the City.

B. Provide necessary training to City staff in the proper operations and maintenance of the booster pump.

C. The date of final acceptance by the City Council or the recordation of the property transfer shall signify the start date of the warranty period. Final acceptance shall include the project in total and will not segregate any specific item or trade included in the construction of the project.

**Add to Section 20-3 PLANTING  
and Section 20-3.01 GENERAL**

**20-3.01 GENERAL**

20-3.01A General

20-3.01A(1) Summary

Section 20-3.01 includes general specifications for performing planting work.

The requirements set forth in the General Conditions shall be in addition to the standards provided herein. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.

Furnish all labor, materials and equipment for the complete installation of landscape items, including all trees, shrubs, groundcovers and turf; maintenance for the establishment of new plant materials; and all necessary appurtenances for proper planting, noted or implied, as shown on the Plans and as specified herein.

**Add to Section 20-3.01A(3) Submittals**

A. Submittals for specified items are not required; however, submittals are required for any proposed substitutions or deviations from the Plans or Specifications. Additionally, submittals are required for the specific items listed below. The Contractor shall submit a materials summary sheet indicating which items will be installed as specified and which items are proposed for substitutions. The Contractor shall submit proof of order within ten (10) working days of the Notice to Proceed, indicating all specified materials have been ordered, noting "as specified" or "substitution proposed". Submittals are required on the following items:

1. Bark mulch material, and rock mulch material.
2. Certificates of compliance for soil amendments, and fertilizers.
3. Sod-grown turf.
4. Soils test with soil amendment recommendations.
5. Trees, shrubs, perennials, grasses, and groundcover plants
  - a) Submit for approval, plant sources including the names of nurseries proposed as sources of acceptable plants, and a list of plants they will provide. The plant list shall include the botanical and common name and the size at the time of selection, including basal caliper and height.
  - b) Submit all requests for substitutions of plant species or size for approval. Request for substitution shall be accompanied with a list of nurseries contacted in the search for the required plant and a record of other attempts to locate the required material. Requests shall also include sources of plants found that may be of a smaller or larger size, or a different shape or habit than specified, or plants of the same genus and species but different cultivar origin, or which may otherwise not meet the requirements of the specifications, but which may be available for substitution.

**Add to Section 20-3.01A(4) Quality Assurance**

A. Provide an experienced foreman who shall directly supervise the work force during all work to be performed under this contract. The foreman shall be present during the time when work is to be performed.

B. Plant material shall conform to current “American Standards for Nursery Stock” and the State of California Grading Code of Nursery Stock, No. 1 grade. Use only nursery-grown stock.

C. All plant material shall be certified free of plant diseases and insect infestations from the County Agricultural Commissioner as required by law. Each shipment of plant material shall be required to have clearance certificates.

D. Prior to planting, a soils fertility test/analysis shall be conducted by an accepted and qualified testing laboratory. Test results shall contain existing nutrient levels, soil texture, cation exchange capacity, soluble salts, pH levels, infiltration rates and recommended soil amendments/fertilizers to ensure proper growth of the specified plantings.

#### Soil Testing

A. Native soil and in-place topsoil shall be tested for amendment determination. Soil Tests shall include soil texture, macro nutrients, micro nutrients, lime, base saturation, pH, sodium, boron, salinity, Cation Exchange Capacity (CEC), and Organic content.

B. Submit soils report for review and approval after completion of grading operations. Soil Testing shall be performed by an agriculture-based lab, with detailed, written recommendations for soil amendments and fertilizers specific to ornamental landscape plants and turf.

#### Product Delivery, Handling and Storage

A. All materials shall be delivered bearing nursery label with botanical, common names, including cultivars.

B. Carefully handle plant material to ensure that limbs are not broken during the planting or storage of the material.

C. Store plant material in a covered area on-site, protected from inclement or hot weather on-site. Keep root balls moist by frequent watering (during hot weather) of all accepted stock until such time as planting occurs.

#### Inspection of Plant Material

A. Notify the Project Manager a minimum of 48 hours prior to date of delivery. All plant material is subject to inspection at the time of delivery. A sample number of plants will be inspected for the following items:

<b>If the sample....</b>	<b>then the plant shall be...</b>
is healthy, shapely and well rooted	accepted.
bears a strong central leader	accepted.
is wilted, wind-blown or sunburned	rejected.
is root-bound, restricted or deformed	rejected.
does not bear a strong central leader or has been severely pruned back	rejected.

B. Stock to be consistent with CALFIRE Nursery/Tree Quality Cue card and Root Management Cue Card. Inspector may require contractor to remove tree or plant stock from plant containers to examine roots.

C. 15 gal tree needs to have at least 1” in basal caliper, a 24” box tree needs to have at least 2” in basal caliper, a 36” box tree needs to have at least 3” in basal caliper. Basal caliper is measured as 6” above the ground.

D. Based on the sample inspection, the Project Manager or Inspector reserves the right to reject any or all of the plant material delivered. All rejected plant material shall be immediately disposed of off-site.

#### Record Drawings

A. The Contractor shall keep an accurate record of the as-built conditions of the landscaping. These records shall be updated daily and kept at the construction site. At any time, the Inspector may examine the conditions of the “as-builts” to ensure compliance of the above.

#### **Add to Section 20-3.01B Materials**

##### 20-3.01B(2) Plants

A. The material to be planted shall conform to that indicated on the plans, unless otherwise accepted. The quantity shown on the Plans is approximate and is furnished for convenience only. Verify all quantities prior to ordering plant material.

#### Turf

A. Turf shall be sod.

B. Sod – Tall fescue blend with named, improved turf-type varieties only. Blend shall contain a minimum 25% Lateral Spread, Rhizomatous, or Self-Repair type tall fescue. Sod shall be non-netted, and contain no more than 10% Bluegrass.

C. Sod must be submitted by Contractor and accepted by the Project Manager prior to ordering.

#### Soil Amendment

A. As recommended by soils test report.

#### Mulch

A. Regular “Walk-on” fir bark as manufactured by Redi-Gro Corporation, Sacramento, CA (916) 381-6063, Mallard Creek, Inc, Rocklin, CA (916) 645- 1681, My Bark Company, Inc., Linden, CA (209) 649-4250 or accepted equal.

B. Decorative bark, shredded lumber or saw dust, and construction debris are not permitted. The mulch must be free of needles.

#### Topsoil

A. Stockpiled, on-site material.

B. Imported topsoil shall be natural, friable, well-draining, free from admixture of subsoil and foreign objects larger than one inch (1”) in diameter, free from toxins or any other harmful substance which may deter healthy plant growth.

C. Perform a soils test for all imported soil. Soil test shall comply with Section 1.06. Submit soils report for review and approval prior to import activities.

#### Pre- and Post- Emergent Herbicide

A. Clean, and non-staining. Consult with a pesticide specialist

#### Tree Stakes and Ties

A. Trees furnished in #15 nursery containers require 2” diameter stakes. Trees less than 8' in height require an 8' stake; trees 8' or greater in height require a 10' stake. Stakes shall be pine or douglas fir (pressure or non-pressure treated).

- B. Trees furnished in 24" boxes or larger require 3" diameter by 10' long stakes. Stakes shall be, pine or douglas fir (pressure or non-pressure treated).
- C. Tree ties should be cut in length out of flat woven polypropylene material, 3/4 inch wide, and 900 lb. break strength. Color to be Green. Product to be ArborTie manufactured by Deep Root Partners, L.P. or approved equal.
- D. Tree guying to be flat woven polypropylene material, 3/4 inch wide, and 900 lb. break strength. Color to be Green. Product to be ArborTie manufactured by Deep Root Partners, L.P. or approved equal.

#### Native Broadcast Seed

No Native broadcast seed is required for this project

### **Add to Section 20-3.01C Construction**

#### Site Preparations

- A. Prior to start of landscaping work, review the site conditions to verify that final grades have been established, plant/turf beds are weed free, and the irrigation system is operational as shown on the Plans and as indicated in the Specifications.
- B. For landscaping within all street right-of-ways, conduct a soils analysis test of the existing soils and remove all lime-treated soils, aggregate base or other non-organic material to a minimum depth of two feet before planting or irrigation installation. Import topsoil to bring the finish grade to specified grades. Submit the soils analysis test results of the imported material prior to import.
- C. Notify the Inspector immediately of any existing conditions which are unacceptable for the commencement of landscaping work.

#### Coordination of Work

- A. Coordinate all work with other trades.

#### Preparation of Planting and Turf Areas

- A. Upon completion of grading and underground activity, Contractor shall obtain a soils test as outlined in 1.06.
- B. Place stockpiled topsoil in all areas to receive planting or turf to a minimum depth of twelve inches (12").
- C. Rip topsoil surface in two directions to a minimum depth of twelve inches (12").
- D. Spread soil amendments at the rates indicated in the soils report.
- E. Rototill amendments to recommended depths. Till amendments to a depth of 6" or as recommended by soils report.
- F. Remove all rock and debris which are greater than 1/2 inch in areas to be turfed and one inch (1") in areas to be planted.
- G. All planted and turf areas to be smooth and uniform in grade as shown on the Plans.
- H. Planting areas to be sloped to drain as shown on the Plans.

#### Storage of Plants and Trees

- A. Protect materials from deterioration during delivery and storage. Adequately protect plants from drying out, exposure of roots to sun, wind or extremes of heat and cold temperatures. If planting is delayed more than 24 hours after delivery, set plants in a location

protected from sun and wind. Provide adequate water to the root ball package during the shipping and storage period, including weekends and Holidays.

B. Soil moisture shall be maintained above wilting point and below field capacity for the root ball substrate or soil.

C. All plant materials must be available for observation prior to planting. Any plants determined to be damaged or distressed due to improper watering may be rejected by inspector and shall be replaced at no cost to City.

### Plant Installation

#### A. Tree and Shrub Planting

1. Remove only those plants which will be planted the same day. Place such plants in the proposed locations for review and accepted by the City prior to actual planting. Notify the Inspector a minimum of 48 hours prior to day of planting.
2. Dig planting pits as shown on the Plans and as shown in the Parks Construction Standards. Scarify the sides and bottom of pit to prevent glazing. Fill pit completely with water and allow the water to completely drain from the pit prior to actual planting.
3. For pits that retain water, completely penetrate the hardpan layer at the bottom of the pit and backfill with topsoil. Fill pit with water to test and ensure proper drainage.
4. Prior to tree planting a central leader needs to be established by structural pruning, as necessary. Codominant leaders need to be removed or suppressed by structural pruning. Refer to the CALFIRE "Tree Training", "Tree Planting", and "Tree Quality" cue cards and "Tree and Plant Root Management Standard and Quality Expectations" contained in Section 5 of these Standards.
5. Plants shall be removed from their containers only at the time of placement within the plant pit. Perform root pruning on all four sides of the root ball by shaving and cutting away the root ball periphery to reduce the amount of circling roots. Starting from the top and then cutting/slicing down to the bottom of the root ball. On a 15 gal container at least 1-1.5 inches of the root ball periphery needs to be removed by slicing or shaving. On a 24" and 36" box tree at least 2 inches of the root ball periphery needs to be removed by slicing or shaving. A sharp hand pruning saw needs to be used for the slicing or shaving of the root ball. Refer to the CALFIRE "Root Management" cue card contained in Section 5 of these Standards. This process will remove many girdling and circling roots deflected by the container wall and allows for root penetration within the planting basin. Spread all roots to the side to allow proper root development. Add native backfill and amendments as shown in the Parks Construction Standards and as recommended by the soils testing laboratory.
6. Plant tree at least three inches (2") above grade on mound to prevent bowl effect. The tree's beginning root flare must be located at top of grade with installed sod.
7. Carefully place plant into the plant pit without damaging the root ball. Water the backfill until saturated. For trees, water in by hand after planting using at least ten (10) gallons of water, minimum.
8. Construct berm and place tree stakes and install mulch per the Parks Construction Standards. Mulch is required for trees within the turf area.

9. Where mowing will occur, provide an eight-foot (8') minimum horizontal clearance between trees and other site improvements, including shrubs.
10. Tree ties should be installed via a figure eight loop and each tie shall be secured with a nail on the tree stake. Install two (2) Arbor Ties at 2/3 of tree height and two (2) Arbor Ties at 1/2 of tree height.
11. Tree stakes should be inserted into the ground to a minimum depth of 18".

#### Groundcover Planting

1. Place groundcover plants in neat, straight, and parallel rows, triangularly spaced as shown on the Plans and as indicated herein.
2. Start the first row of planting at a distance equal to the on-center spacing required per plan, minimum, from the edge of the adjacent hardscape, mow band or header board.
3. Groundcover shall be installed to the outside edge of the water basins of trees or shrubs.

#### Seeding – Turf and Native

No seeding is required for this project.

#### Sod- Turf

- A. Remove all "humps" and depressions prior to sodding.
- B. Keep all sod rolls shaded and moist prior to installation.
- C. Do not store sod rolls more than one (1) day. Sod shall be laid upon delivery.
- D. Unroll sod one at a time for immediate installation.
- E. Provide tight seam between rolls of sod (less than 1/8" gaps).
- F. Stagger rows so that the ends of sod rolls are stepped.
- G. For turf areas where sod is partially provided, add topsoil at all transition edges to same as finish grade.

#### Mulch

- A. Prior to placing mulch, apply post-emergent herbicide to any weeds present, per label directions.
- B. Prior to placing mulch, apply pre-emergent herbicide in all planting areas, per label directions.
- C. Apply three inches (3") of mulch in all landscape planter areas, or deeper as indicated.
- D. Keep mulch a minimum of three inches (3") away from the trunks of all woody shrubs and four inches (4") away from all trees. Taper mulch profile away from this point to prevent subsequent collection of mulch against trunks.

#### Watering

- A. Upon completion of each planting or turf area, irrigate appropriately to ensure proper health and growth.
- B. Continually adjust the irrigation for plant needs regardless of air temperature.

### Clean-up

- A. Upon completion of planting operations, collect and remove from site all empty plant containers, debris, rubbish and other trash.
- B. Sweep clean and wash all hardscape areas.
- C. Clean up shall occur, at minimum of once a week, at the end of the work week.
- D. Maintain the entire site in a clean condition to the satisfaction of the City.

### Pre-Final (Punch List) Review

- A. See Section 011000 1.16 of the Summary of Work for notification process.
- B. The following conditions must be met in order for planting to be considered towards substantial completion, as required to enter into the establishment period described in Section 011000, 1.16:
  - 1. For seeded turf:
    - a. Upon completion of the second mowing of completely germinated turf. Second mowing is defined as full coverage of turfed area 90% weed free.
    - b. Root depth – Turf grass roots shall be healthy, creamy-white in color and be 4” or greater in length/depth as measured from the soil surface to root tip. This shall be consistent throughout turfed area.
    - c. Turf shall be of uniform green color with no visible signs of stress due to soil fertility, moisture, disease or pests.
  - 2. For sodded turf:
    - a. Accepted installation of the sod.
    - b. Turf shall be of uniform green color with no visible signs of stress due to soil fertility, moisture, disease or pests.
  - 3. For trees and shrubs:
    - a. Trees and shrubs shall be properly installed, and with no visible signs of stress due to soil fertility, moisture, disease or pests.

### **Add to Section 20-4 Plant Establishment**

### Establishment Period

- A. Active maintenance is required throughout the entire establishment period:
  - 1. Maintain turf to a height of two and one half inches (2-1/2”) for cool season turf varieties and one and one half inches (1-1/2”) for warm season turf varieties. Maintained height shall be measured from the surface of finish grade to the top of the leaf blade throughout the establishment period, and mowed as frequently as required to maintain said height. At no time shall the leaf blade be mowed or cut more than 1/3 of the length of the blade. Root mass/depth must remain consistent as measured at the start of establishment or greater.
  - 2. Edge all turf areas along hardscape edges.
  - 3. Re-seed all bare areas within the turf as soon as evident.
  - 4. Immediately replace all dead plants.

5. As necessary, raise all trees and shrubs which have sunk within the plant pit beyond the levels indicated in the Standard details.
  6. Keep all areas free of weeds, pests and disease.
  7. For trees located in turf areas, maintain a circle free of turf at a distance described in the Standard details
- B. Prior to the start of the final thirty (30) days of establishment:
1. All plant replacements shall be completed.
  2. All plantings and turf shall be thriving and in a healthy condition.
  3. The lack of active maintenance prior to the final thirty (30) days may constitute a delay in the start of the final thirty (30) days of the establishment period.

#### Final Review

- A. The Inspector shall review the site for completion of items noted, but not limited to, "B" below. All corrective action is required to enter into the final thirty (30) days of establishment.
- B. The site shall be prepared for review, by ensuring that:
1. All spray heads have been properly adjusted,
  2. Dead plants have been replaced,
  3. Planting areas have been weeded,
  4. Turf areas have full germination, are consistent in green color and are weed-free,
  5. Walkways and paved areas have been swept and washed, and
  6. Turf roots meet standards outlined in 3.10
- C. Failure to complete any one or all of the above items may constitute non- performance of the final review and will require re-scheduling. In this case, the cost of the extended establishment period shall be at no additional cost to the City

#### Guarantee

##### General

A. Contractor shall provide a written guarantee covering all plant materials (trees & shrubs) furnished by him to be free of all defects or disease and that all plants are in a healthy and thriving condition at the completion of the contract. Deciduous plant material shall be warranted beyond the time of contract completion until such time as growth becomes evident.

(For all park construction projects)

B. All plants, except those provided by the City, shall be warranted for a period of one (1) year, commencing on the date of final acceptance. The warranty shall be as outlined in Section 011000: Summary of Work, paragraph 1.19.

(For all streetscapes, street landscape frontage, street medians and Lighting & Landscape District projects.)

C. All plants, except those provided by the City, shall be warranted for a period of nine (9) months, minimum, commencing on the date of final acceptance. Warrantee responsibilities expire upon acceptance and approval of the "Notice of Completion" for the overall development



For Type A HMA using RAP substitution of 15 percent or less of the aggregate blend, the grade of the virgin binder must comply with the PG binder grade specified above.

AA

**40 CONCRETE PAVEMENT**

Concrete pavement consisting of plain jointed concrete pavement must be constructed in compliance with Section 40-3, "Jointed Plain Concrete Pavement", of State Standard Specifications and these special provisions.

The Contractor must prepare a jointing plan for approval by the Engineer at least 7 days prior to starting work on concrete paving.

The contract unit price paid per cubic yard for Portland Cement Concrete (PCC) pavement includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work including all drilling, bonding, dowels, tie bars, joint filler, sawcutting, curing, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

**DIVISION VI STRUCTURES**

**51 CONCRETE STRUCTURES**

Footings for electrical infrastructure must be constructed at the locations and per the details included in the plans. This work must be completed in compliance with Section 51, "Concrete Structures", of State Standard Specifications and these special provisions.

Bar reinforcing steel must be constructed per the details shown on the plans, as recommended by the manufacturer, and per the standard plans for the element of work being supported.

The contract unit price paid per cubic yard for utility pads includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work including all bar reinforcing steel, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Where footings and foundations are not listed in the bid items list or shown on the plans, such footings and foundations including, excavation, concrete, reinforcing steel and backfill is considered in the element of work being installed and no further payment is made therefor.

AA

**DIVISION VIII MISCELLANEOUS CONSTRUCTION**

**73 CONCRETE CURBS AND SIDEWALKS**

All newly placed concrete must be cured with a clear concrete curing compound (State Specification 8030-71D-06).



All new or additional piping materials required to complete the work must be as recommended or supplied by the hydrant manufacturer and approved by the Engineer. Supplemental materials including gravel or concrete for the hydrant base, and thrust blocks or joint restraint, must be in accordance with the City of Roseville Construction Standards.

The location and elevation of the adjusted or relocated hydrant, valve and box and the orientation of hydrant nozzles will be shown on the plans or determined by the City of Roseville Fire Department and the Engineer.

The Contractor shall arrange for the City of Roseville to shut down the main as required. The hydrant, gate valve and box shall be carefully placed to prevent damage to the materials. Set and joint all valves to the water mains as specified for the laying and jointing of that particular type of pipe. Plumb the hydrant and valve stems.

Relocate Fire Hydrant includes removing the hydrant, gate valve and box from the existing location and reinstalling them at the required elevation in a new location. The contract unit price includes furnishing and installing the cutting-in-sleeve, up to 20 feet of additional pipe, pipe coupling, tee, elbow, and thrust blocks or joint restraints (per Roseville Construction Standards), dewatering the pipe, and the concrete or gravel base.

Flushing and chlorinating, as required by Roseville Environmental Utility Department, and all excavation; pavement removal and replacement; and furnishing, placing, and compacting backfill for hydrant adjustment or reinstallation is included in the associated contract item.

The contract unit price paid per each for Relocate Fire Hydrant includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work, as shown on the plans, as specified in the State Standard Specifications and these special provisions, and as directed by the Engineer.

#### **RELOCATE FIRE DEPARTMENT CONNECTION (FDC)**

Existing Fire Department Connection must be relocated to location shown on the plans, including all fittings, pipe, pipe removal, coordination with City Environmental Utilities Department as required to complete the work in compliance with Section 81 of the City of Roseville Construction Standards, State Standard Specifications and these special provisions.

All new or additional piping materials required to complete the work must be as recommended or supplied by the FDC manufacturer and approved by the Engineer. Supplemental materials including concrete for the assembly base, and thrust blocks or joint restraint, must be in accordance with the City of Roseville Construction Standards.

The Contractor shall arrange for the City of Roseville to shut down the main as required.

The contract unit price paid per each for Relocate FDC includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

#### **RELOCATE POST VALVE INDICATOR (PVI)**

Existing Post Valve Indicator must be relocated to location shown on the plans, including all fittings, pipe, pipe removal, coordination with City Environmental Utilities Department as required to complete the work in compliance with Section 81 of the City of Roseville Construction Standards, State Standard Specifications and these special provisions.

All new or additional piping materials required to complete the work must be as recommended or supplied by the PVI manufacturer and approved by the Engineer. Supplemental materials

including concrete for the assembly base, and thrust blocks or joint restraint, must be in accordance with the City of Roseville Construction Standards.

The Contractor shall arrange for the City of Roseville to shut down the main as required.

The contract unit price paid per each for Relocate PVI includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **RELOCATE BACKFLOW PREVENTER ASSEMBLY AND METER**

Existing back flow preventer and meter, must be relocated as shown on the plans, including all fittings, pipe, pipe removal, coordination with City Environmental Utilities Department as required to complete the work in compliance with Section 81 of the City of Roseville Construction Standards, State Standard Specifications and these special provisions.

All new or additional piping materials required to complete the work must be as recommended or supplied by the backflow preventer manufacturer and approved by the Engineer. Supplemental materials including concrete for the assembly base, and thrust blocks or joint restraint, must be in accordance with the City of Roseville Construction Standards.

The location, orientation and elevation of the adjusted or relocated backflow preventer assembly will be shown on the plans or determined by the City of Roseville and the Engineer.

The Contractor shall arrange for the City of Roseville to shut down the main as required.

The contract unit price paid per each for Relocate Backflow Preventer Assembly and Meter shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **WATER CONNECTION**

Contractor will coordinate with City Environmental Utilities Department as required to complete water connections to existing facilities. The work must be in compliance with Section 81 of the City of Roseville Construction Standards, State Standard Specifications and these special provisions.

The contract unit price paid per each for Water Connection shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **CONCRETE THRUST BLOCK**

The Contractor must install concrete thrust blocks at the locations shown on the plans. The work must be in compliance with Section 81 of the City of Roseville Construction Standards, State Standard Specifications and these special provisions.

The contract unit price paid per each for Concrete Thrust Block shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in this item of work, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.



**SECTION 26 01 00**  
**GENERAL REQUIREMENTS OF ELECTRICAL WORK**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section describes the general requirements for the electric work. These requirements apply to all sections of Division 26.
- B. Provide electrical materials, equipment, services, rentals, labor and testing to complete the installation and testing of the electrical work specified in the Construction Documents.
- C. Power receptacles and data outlet locations shall be approved by the Owner prior to wall close in.

**1.02 GENERAL REQUIREMENTS**

- A. No exposed conduit or surface raceway, except in Mechanical yard or equipment rooms, shall be permitted without written approval from the Owner.
- B. Multi-wire branch circuits shall not be permitted. Provide a dedicated neutral for all branch circuits requiring a neutral.
- C. T-24: Provide all applicable requirements for T-24, parts 1 and 6 compliance including but not limited to providing acceptance testing, data registry, applicable form submittals, installation. This includes providing certified test technicians. All lighting control devices and systems, ballasts, and luminaires shall comply with the California Energy Code
- D. Provide complete testing of all equipment and systems affected by the electrical work. A complete functional acceptance test shall be prepared and performed on all electrical systems and equipment to prove they perform as intended under all modes of operation. Contractor is responsible for preparing and conducting acceptance test procedures in accordance with this specification. Also the testing will demonstrate the electrical system and equipment operation to the Owner. All labor, services, rentals, materials and testing equipment which is required shall be provided.
- E. Provide a UL label or evidence of UL listing for all electrical material, unless the material is of a type for which a label or listing service is not provided.

**1.03 CODE COMPLIANCE**

- A. Perform all work in accordance with following codes The latest edition or supplement or amendment thereto in effect at the time of submittal of bid shall be considered to be the issue in effect (unless shown otherwise) of all applicable laws, codes, and regulations including, but not limited to:
  - 1. California Electrical Code (CEC)
  - 2. California Building Code (CBC)
  - 3. California Fire Code (CFC)
  - 4. California Mechanical Code (CMC)
  - 5. California Plumbing Code (CPC)
  - 6. California Building Standards Administrative Code (CCR)
  - 7. California Green Building Standards Code
  - 8. California Energy Code
  - 9. All Applicable State and Local Codes and Regulations
- B. Where codes or standard specifications other than those listed in this paragraph are referred to in the different Divisions of these specifications, it is understood that they apply as fully as if cited here.
- C. Where differences exist between codes affecting this work, the code affording the greatest protection to the Owner shall govern.

- D. If the Contractor observes that these drawings and specifications are at variance with the codes, the Contractor shall notify the Project Manager in writing at once for resolution.

#### **1.04 PERMITS, FEES AND INSPECTIONS**

- A. Call for all local building department inspections.
- B. Obtain approvals from local building inspector prior to final observation by Owner.
- A. Comply with the current applicable standards of the listed agencies for electrical materials and installation.
- B. Underwriters Laboratories, Inc. (UL): Provide a UL label or evidence of UL listing for all electrical material, unless the material is of a type for which a label or listing service is not provided.
- C. National Electrical Manufacturer's Association (NEMA).
- D. American National Standards Institute (ANSI).
- E. American Society for Testing Materials (ASTM).
- F. Insulated Power Cable Engineers Association.
- G. Certified Ballast Manufacturer's Association.
- H. Institute of Electrical and Electronic Engineers (IEEE).

#### **1.06 SUBMITTALS**

- A. Provide submittals for items specified in individual sections of Division 26.
- B. Provide submittals for items listed documenting compliance with specification requirements.
  - 1. Materials and Services
  - 2. Contractor prepared Tests and Commissioning Plans for Architect review and approval.
  - 3. Tests and Commissioning Results
  - 4. Shop drawings
  - 5. Operation and Maintenance Manual.
  - 6. Record Drawings.
  - 7. Other- Submittals required elsewhere in the Construction Documents.

#### **1.07 MATERIALS**

- A. Provide new material of the quality specified and satisfactory to the Owner.
  - 1. Provide major equipment which is the product of a manufacturer who has, for a period of not less than five years been in successful manufacture of similar equipment to that specified and who has a catalog covering ratings and specifications of proposed equipment.

#### **1.08 SUBSTITUTIONS**

- A. The first product, material, or equipment specified by brand or trade name and model number is the basis for the Project design and the use of any item other than the first named one may require modifications of that design. If Contractor use any other product, material, or equipment other than the first named one the Contractor shall, at its cost:
  - 1. Make all revisions and modifications to the design and construction of the Work necessitated by the use of the product, material or equipment.
  - 2. Be responsible for all costs of any changes resulting from the use of the product, material or equipment including without limitation, costs or changes which affect other parts of work or the work of separate contractors.
  - 3. Contractor shall submit within 70 days of bid award prepared specifications and drawings, prepared, stamped and signed by an appropriate licensed engineer, depicting all revisions to design and construction of the work necessitated by the substitution.

### **1.09 DRAWINGS AND SPECIFICATIONS**

- A. Data given herein and on the plans are exact as could be secured, but their absolute accuracy is not guaranteed. Plans and specifications are for the assistance and guidance of the Contractor and exact locations, distances, levels and other data will be governed by the structures. The Contractor shall provide a layout plan of all electrical equipment showing actual dimensions and working clearances. The Contractor is responsible for ensuring that all electrical equipment will fit and no working clearances are exceeded.
- B. Clarification of plans and specifications for the purpose of facilitating construction, but not involving additional labor and materials, may be prepared during construction by the Contractor and reviewed by the Architect. Said revised plans and specifications shall become a part of the contract. The Contractor shall conform to the revised plans and specifications at no additional cost to the Owner.
- C. Layouts of equipment, accessories, and wiring systems are diagrammatic but follow these as closely as possible. Examine Architectural, Structural, and Mechanical and other drawings, noting all conditions that may affect this work. Report conflicting conditions to the Owner for adjustment before proceeding with the work. Should the Contractor proceed with work without so reporting the matter, they do so on their own responsibility and shall alter work if directed by the Owner at the Contractor's own expense.
- D. The right is reserved to make minor changes in locations of equipment and wiring systems shown, providing the change is ordered before conduit runs and/or work directly connected to same is installed and no extra materials are required.

### **1.10 UTILITY COORDINATION**

- A. Coordinate with the electric utility company, the telephone company, and the cable television company whenever necessary, to determine service equipment requirements, conduit and backfill requirements, electric metering requirements and other requirements to provide complete utility services, adequate to supply the electrical, communication, and television system(s) indicated. Provide materials that are specified in Division 26 in addition to conforming to utility company requirements.
- B. Include in bid, all work required by the utility companies. All work required for utility services shall be in accord with contract documents, specifications, drawings and as required by the utility companies.
- C. Use extreme caution when digging to avoid buried electrical cables.
  - 1. Before digging, call:
  - 2. (800) 642-2444

### **1.11 HOMERUNS AND MAXIMUM NUMBER OF CIRCUITS**

- A. 120 VAC, 20 A circuit- Maximum of (9) #12 conductors in conduit (assume ambient temp for 120 Deg F, 90 Deg C wire). Homeruns may combine branch circuits by using a maximum of (20) # 10 conductors in 1.25" minimum diameter conduit.

### **1.12 CUT OVER**

- A. Prepare, submit and implement the cut over procedure. Provide all necessary materials, equipment, services, and rentals (e.g., generators, UPS, ATS) for the cut over. No disruption in power or any interference with Operations is permitted without Owner's approval. Have cut over coordination meetings with all necessary participants (Owner, Architect, Engineers, Vendors, Contractor) at least 2 weeks before preparing the cut over procedure and before conducting the approved procedure. Additional meetings may be required (e.g., resolve start up issues).

### **1.13 SUPERVISION**

- A. Provide adequate and competent supervision. Maintain complete control of the project execution and complete liability for the materials and work until the job is completed and accepted by the Owner.

#### **1.14 MANUFACTURER'S INSTRUCTION**

- A. Follow the manufacturer's instructions when specific installation or connection details are not indicated or specified.
- B. Notify the Architect of conflicts between the manufacturer's instructions and installation or connection details prior to the installation of materials.

#### **1.15 WORKMANSHIP**

- A. Firmly and permanently secure in place all electrical equipment to the structure so that it is level, plumb, and true with the structure and other equipment. Installation methods shall be as recommended by the National Electrical Contractors' Standard of Installation, except when methods specified or shown on the plans differ. The minimum installation standards shall be as required by the Codes.

#### **1.16 PROTECTION**

- A. Protect all equipment and materials required for the performance of this work from damage by the elements, vandalism, or work during construction.
  - 1. Do not subject the work and materials of other trades to damage during execution of the work in this division of the specifications.

#### **1.17 COORDINATION WITH OTHER TRADES**

- A. Coordinate with other trades and promptly transmit all information required by them. Coordinate the sequence of construction with other trades to ensure that all work proceeds with a minimum of interference and delay. Perform all work that requires relocation due to negligence or absence of regard for the work of other trades.

#### **1.18 EXAMINATION OF SITE**

- A. Examine the site prior to bid to determine existing site conditions that may affect the work. No allowance will be allowed for any extra work required due to a failure to recognize, or negligence to discover conditions prior to bid.

#### **1.19 STRUCTURAL REQUIREMENTS**

- A. Secure all anchors for electrical equipment in a manner that will not decrease the structural value of any structure to an unsafe level. Inform the Architect of any proposed modifications to the structure that involves cutting or patching of concrete, masonry, steel, or wood in the project.

#### **1.20 IDENTIFICATION**

- A. Install nameplates on electrical equipment including:
  - 1. Individual circuit breakers on switchboards, distribution panelboards and motor control centers.
  - 2. Motor starters.
  - 3. Pilot lights, selector switches, overload resets, timers and other pilot control devices.
  - 4. Panelboards, switchboards, motor control centers, transformers, control cabinets and other major equipment.
  - 5. Disconnect switches, time switches, contactors, relays and other miscellaneous equipment enclosures.
  - 6. Light switches for which the control functions are not evident.
  - 7. Provide labeling on receptacles and light switches which describe the source panel and circuit number. Use clear adhesive label with typed text. Example, "EH-3", that is panel "EH" circuit 3.
- B. Describe item, control function of sequence or operation on each nameplate, as applicable.

### 1.21 TESTS AND REPORTS

- A. The Contractor shall prepare and perform Acceptance Tests and visual and mechanical inspections and electrical tests on all affected electrical systems and equipment to prove they perform satisfactorily in all modes of operation. This is in addition to any other testing required by other specifications. Prepare Acceptance Test Procedures for all systems and submit to the Owner for review and approval. Submit at least two weeks before the planned testing.
- B. Perform routine insulation-resistance, continuity, equipment settings and rotation tests for all affected distribution and utilization equipment prior to and in addition to tests performed by the testing firm specified herein. Prepare inspection and test reports for all equipment as specified herein and submit to the Owner for review and approval. Submit at least two weeks before the planned testing. Perform these inspections and test prior to or as part of system Acceptance Testing. Examples include:
  - 1. Grounding systems, for resistance to earth. Provide additional grounding electrodes if main service or separately derived system ground resistance exceed 5 ohms.
  - 2. Motor circuits with motor disconnected, for resistance to ground.
  - 3. Control circuits for resistance to ground.
  - 4. Lighting circuits, for resistance to ground.
  - 5. Power feeders, for resistance to ground.
  - 6. Switchboards, Motor Control Centers for resistance to ground.:
  - 7. Main bus, power and control circuits, for resistance to ground.
    - a. Check connection; tighten if necessary.
    - b. Operation of each device.
    - c. Set relays and trip settings in accord with the reviewer's directions.
    - d. Check thermal overload heaters for size and reset operation.
  - 8. Prior to energization of equipment, check the insulation resistance of listed circuits, with a 500-volt "Megger".
  - 9. Set circuit protective devices to provide proper long-time, short-time and ground-fault tripping coordination
  - 10. Coordinate phase rotation of all motors with installer to ensure proper direction of rotation. List motor data:
    - a. Item of equipment.
    - b. Nameplate data.
    - c. Overload heater catalog number and rating.

### 1.22 DEMONSTRATIONS

- A. After testing and final inspection, demonstrate operation of all affected systems and equipment to Owner.
- B. Arrange date of test with Owner.
- C. Advise the manufacturers' representative to be present when required.
- D. Instruct Owner's personnel in operation, adjustment and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

### 1.23 GUARANTEE

- A. Guarantee the electrical work against defects in work or materials for one year after filing of Notice of Completion.
- B. Undertake repairs within 24 hours after notice from the Owner.
- C. If the operation of the electrical system fails to conform to Division 26 requirements, approved submittals, or operation and maintenance manuals, the Owner may operate the electrical system without liability to Owner. Repair or replace defective or unsatisfactory equipment or systems.

## 1.24 QUALITY ASSURANCE

- A. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- B. Operational Test:
  - 1. Perform an operational test to assure that the electrical equipment installation complies with all requirements of the Specifications. Test shall be made in the presence of the Owner.
  - 2. If any part of the system fails the test, it must be corrected and the test repeated until it satisfactorily passes the test.
- C. Training:
  - 1. Provide manufacturer's system training necessary for the Owner's personnel. The scope of training should include training sequences available at the job site.
  - 2. The number of persons attending the system training courses shall be determined by the Owner's Representative. The training at the job site shall be provided prior to system approval by the Owner's Representative.
  - 3. System operating training shall be given by an experienced and competent manufacturer's representative competent with the electrical system.
  - 4. Provide training per manufactures instruction.
  - 5. Provide a minimum amount of training:
    - a. Lighting and lighting controls; 4 hours
    - b. Generator and ATS; 4 hours
    - c. UPS and bypass; 2 hours
    - d. Public address system; 4 hours
    - e. Fire detection and Alarm; 4 hours
    - f. EV charging equipment; 2 hours
    - g. Circuit breaker and multipoint metering; 2 hours

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.01 EQUIPMENT MOUNTING SEISMIC CRITERIA

- A. Brace or anchor all electrical equipment to resist a horizontal force acting in any direction using the criteria of Section 1613 and 1615, California Building Code, Title 24, Part 2.
- B. Simultaneous vertical force - use 1/3 by horizontal force.
- C. Where anchorage details are not shown on the drawings, the field installation shall be subject to the approval of the Architect.

**END OF SECTION**

## SECTION 26 05 19

### LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. The work required under this section of the specifications consists of furnishing, installing and connecting the building wiring system, 600 volts and below. Exterior branch circuit wiring and feeder conductors extended beyond the building are included. Wiring systems for communication and alarm systems are not included in this section unless specified to be included, by reference, in the respective specification sections for alarm and communication systems.

##### 1.02 DESCRIPTION

- A. This section describes requirements for wire and cable.

##### 1.03 RELATED WORK

- A. Section 26 01 00: General Requirements for Electrical Work.

##### 1.04 REFERENCE STANDARDS

- A. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association; 2009.

##### 1.05 SUBMITTALS

- A. Procedure: Submit under provisions of Section 01 30 00 - Administrative Requirements and Section 01 60 00 - Product Requirements.
- B. Provide submittals for items listed documenting compliance with specification requirements.
- C. Product Data:
  - 1. Electrical Materials: Manufacturer's current published catalog sheets.

#### PART 2 PRODUCTS

##### 2.01 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of California Electrical Code.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Provide conductors and cables with lead content less than 300 parts per million.
- D. Provide new conductors and cables manufactured not more than one year prior to installation.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- F. Comply with NEMA WC 70.
- G. Comply with FS A-A-59544 where applicable.
- H. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- I. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- J. Conductors for Grounding and Bonding: Also comply with Section 26 05 26.
- K. Conductors and Cables Installed in Cable Tray: Listed and labeled as suitable for cable tray use.
- L. Conductors and Cables Installed Where Exposed to Direct Rays of Sun: Listed and labeled as sunlight resistant.
- M. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum rated, listed and labeled as suitable for use in return air plenums.

N. Conductor Material:

1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
2. Provide copper conductors except where aluminum conductors are specifically indicated. Substitution of aluminum conductors for copper is not permitted. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.
3. Provide copper conductors except where aluminum conductors are specifically indicated or permitted for substitution. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.
  - a. Where aluminum conductors are substituted for copper, comply with the following:
    - 1) Size aluminum conductors to provide, when compared to copper sizes indicated, equivalent or greater ampacity and equivalent or less voltage drop.
    - 2) Increase size of raceways, boxes, wiring gutters, enclosures, etc. as required to accommodate aluminum conductors.
4. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
5. Tinned Copper Conductors: Comply with ASTM B33.
6. Aluminum Conductors (only where specifically indicated or permitted for substitution): AA-8000 series aluminum alloy conductors recognized by ASTM B800 and compact stranded in accordance with ASTM B801 unless otherwise indicated.

O. Conductor Color Coding:

1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
3. Color Code:
  - a. Equipment Ground, All Systems: Green.

**2.02 NONMETALLIC-SHEATHED CABLE**

A. Manufacturers:

1. Cerro Wire LLC: [www.cerrowire.com/#sle](http://www.cerrowire.com/#sle).
2. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
3. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Description: NFPA 70, Type NM multiple-conductor cable listed and labeled as complying with UL 719, Type NM-B.

C. Conductor Stranding:

1. Size 10 AWG and Smaller: Solid.
2. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

**2.03 SERVICE ENTRANCE CABLE**

A. Manufacturers:

1. Copper Service Entrance Cable:
  - a. Cerro Wire LLC: [www.cerrowire.com/#sle](http://www.cerrowire.com/#sle).
  - b. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - c. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
2. Aluminum Service Entrance Cable:
  - a. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - b. General Cable Technologies Corporation: [www.generalcable.com/#sle](http://www.generalcable.com/#sle).
  - c. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).

- d. Stabiloy, a brand of General Cable Technologies Corporation:  
[www.stabiloy.com/#sle](http://www.stabiloy.com/#sle).
- B. Service Entrance Cable for Above-Ground Use: NFPA 70, Type SE multiple-conductor cable listed and labeled as complying with UL 854, Style R.
- C. Service Entrance Cable for Underground Use: NFPA 70, Type USE single-conductor cable listed and labeled as complying with UL 854, Type USE-2, and with UL 44, Type RHH/RHW-2.
- D. Conductor Stranding: Stranded.
- E. Insulation Voltage Rating: 600 V.
- F. Diesel locomotive cable: 1000V.

#### **2.04 ARMORED CABLE**

- A. Manufacturers:
  - 1. AFC Cable Systems Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - 3. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
- B. Description: NFPA 70, Type AC cable listed and labeled as complying with UL 4, and listed for use in classified firestop systems to be used.
- C. Conductor Stranding:
  - 1. Size 10 AWG and Smaller: Solid.
  - 2. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation: Type THHN.
- F. Grounding: Combination of interlocking armor and integral bonding wire.
- G. Armor: Steel, interlocked tape.

#### **2.05 METAL-CLAD CABLE**

- A. Manufacturers:
  - 1. AFC Cable Systems Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - 3. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
- B. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- C. Conductor Stranding:
  - 1. Size 10 AWG and Smaller: Stranded.
  - 2. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- F. Grounding: Full-size integral equipment grounding conductor.
- G. Armor: Steel, interlocked tape.

#### **2.06 POWER AND CONTROL TRAY CABLE**

- A. Manufacturers:
  - 1. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - 2. General Cable Technologies Corporation: [www.generalcable.com/#sle](http://www.generalcable.com/#sle).
  - 3. Okonite: [www.okonite.com/#sle](http://www.okonite.com/#sle).
  - 4. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
- B. Description: NFPA 70, Type TC cable listed and labeled as complying with UL 1277.
- C. Conductor Stranding: Stranded.
- D. Insulation Voltage Rating: 600 V.

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- E. Insulation: Type XHHW or XHHW-2.
- F. Grounding: Full-size integral equipment grounding conductor.
- G. Jacket: PVC or Chlorinated Polyethylene (CPE).

**2.07 WIRE AND CABLE**

- A. Conductor: Insulated copper, individual conductors, 98 percent conductivity, stranded.
  - 1. Power conductors, #12 AWG, minimum to 750 MCM, stranded.
- B. Insulation:
  - 1. Rated 600 volts as follows:
  - 2. 90 DEG. Celcius

Item	Size (AWG)	Insulation Type
Branch Circuits (dry and damp locations)	#12 to #4/0	THHN
Branch Circuits (wet)	#12 to #4/0	THWN-2 (Okonite for #12-10, or equal)
Fixture Taps (dry & damp)	#12	THHN
Feeders (dry & damp)	#12 to #750 MCM	THHN
Feeders (wet)	#12 to #750 MCM	RHW-2, USE-2, THWN-2 XHHW-2
Controls (dry & damp)	#14 to #10	THHN
Controls (wet)	#14 to #10	THWN-2 (Okonite or equal)

- 3. Rated 1000 volts as follows:
- 4. 90 DEG. Celsius

Item	Size (AWG)	Insulation Type
Feeders (wet)	#12 to #777.7 MCM	RHH/RHW-2

**2.08 WIRE CONNECTIONS**

- A. Connect wire to binding post screw, stud, bolt or bus as follows:
  - 1. #10 AWG and smaller conductors, compression type, nylon, self-insulated grip spade lugs, T & B "Sta-Kon", Buchanan "Termend", Panduit "Pan-Term", or equal.
  - 2. #8 AWG to #750 MCM copper conductors, solderless lug type mechanical copper connectors, with hex-head or allen type compression set screws with configuration to suit application, Burndy "QA", or equal.
  - 3. #8 AWG to #777.7 MCM copper conductors, compression. Burndy YA-L, YA-L-TC series or equal
- B. Conductor Taps:
  - 1. #12 through #750 copper conductors, mechanical type for stranded copper wire. Burndy: KS, KS3, KVS, KVSW, QPX, or equal.
  - 2. #12- #4/0 copper conductors, compression C type, Burndy YC-C series or equal.
  - 3. #4- #777.7 MCM cooper conductors, compression T type, Burndy YST or equal
- C. Splice wire as follows:
  - 1. #10 AWG and smaller conductors, twist-on solder-less, insulated spring connectors, 3M "Scotchloks", T & B "Piggys" or equal.
  - 2. #8 AWG to #777.7 MCM copper conductors, two-way connectors. Burndy: AMS or equal.

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3. #8 AWG to #777.7 MCM copper conductors, compression connectors: Burndy: YS-L,YS,YS-T series or equal
  4. Underground applications-Splice in underground pull box. Apply cast resin splice kit. 3M:85 Series or equal.
- D. Size, install and tighten wire terminal and splice connectors in accordance with manufacturer's instructions using only the manufacturer's recommended tooling. Copper connectors shall be used for copper conductors. Aluminum connectors shall be used for aluminum conductors.

## 2.09 TAPE

- A. Wire Splices: Vinyl plastic electrical tape, 8.5-mil and 4.0-mil, Scotch 33.
- B. Conduit Wrapping: 10-mil vinyl wrapping tape, Manville, Minnesota Mining and Manufacturing Company.

## 2.10 WIRING ACCESSORIES

- A. Identify conductors with self-adhesive vinyl cloth markers, sized to fit the conductor insulation, with machine printed black marking, W.H. Brady, Thomas and Betts, or equal.

## PART 3 EXECUTION

### 3.01 INSULATED CONDUCTORS AND CABLE

- A. Install all wiring in raceway system, except where conductors are indicated or specified not to be installed in raceway. Any conductors found to be damaged or defective, including insulation damaged during installation, shall be removed and replaced at no expense to the Owner.
  1. Pull conductors into raceway simultaneously where more than one is being installed in the same raceway.
  2. Use UL listed pulling compound or lubricant where necessary to reduce cable pulling tension below the manufacturer's recommended levels. Compound used shall not deteriorate conductor or insulation.
  3. Use pulling means, including fish tape, cable rope, or basket-weave wire/cable grips that will not damage cable or raceway.
- B. Connect all conductors. Torque each terminal connection to the manufacturers recommended torque value. A calibrated torquing tool shall be used to insure proper torque application
- C. Conductors shall be tested to be continuous and free of short circuits and grounds.
- D. Maintain phase rotation established at service equipment throughout entire project
- E. Group and tie with cable ties (T & B "Ty-Rap", or equal) all conductors within all enclosures, i.e., panels, motor controllers, equipment cabinets, switchboards, etc.
- F. Make splices in conductors only within junction boxes, wiring troughs and other enclosures as permitted by the California Electrical Code. Do not splice conductors in pull boxes, panel boards, safety switches, switchboard, switchgear, motor control center, or motor control enclosures.
- G. Support conductors installed in vertical raceways at intervals not exceeding those distances indicated in the California Electrical Code. Support conductors in pull boxes with bakelite wedge type supports or "Kellem" grips or equal, provided for the size and number of conductors in the raceway. Do not splice conductors in pull boxes used for vertical cable supports unless written permission for splicing is obtained.
- H. Make connections between fixture junction box and fixture with fixture wire.
- I. Control, communications or signal conductors shall be installed in separate raceway systems from branch circuit or feeder raceway, unless indicated otherwise on the drawings.
- J. Conductor lengths for parallel circuits shall be equal. Do not configure isolated phasing in separate conduits for parallel conductors.
- K. Install a minimum of 12" (300 mm) of slack conductor at each outlet.
- L. Thoroughly clean conductors prior to installing lugs and connectors.

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- M. Secure portable cables in accordance with the CEC. Install strain relief devices to prevent tension on terminations if cable is pulled. Install cable grips on drops and connect to outlet box or structure. Leave slack cable loop at drop point.
- N. Color code conductors by phase sequence A-B-C when looking into the front of the equipment from left-to-right, top-to-bottom or front-to-back. Provide conductors with the appropriate phase color or mark conductors with a minimum of 6 inches of phase tape on ends connected to terminals. Phase code conductors as listed:

Voltage	Phase A	Phase B	Phase C	Neutral	Ground
120/208	Black	Red	Blue	White	Green
277/480	Brown	Orange	Yellow	Grey	Green
120/240	Black	Orange	Blue	White	Green

- O. Identify all conductors with their respective circuit numbers at all boxes and terminals.
- P. Connections:
  - 1. Use twist-on solder-less connectors for splicing receptacle and lighting circuits #10 AWG wire size and smaller.
  - 2. Splice #12 and #10 AWG stranded conductors with compression connectors.
  - 3. Terminate conductors at motors with bolted connections, insulated with plastic tape.
  - 4. For conductor taps #8 through #777.7 MCM, provide mechanical copper connectors.
  - 5. For splices larger than #10 AWG, insulate and smooth the splice with insulation putty, tape with one half-lapped layer of 8.5-mil vinyl plastic electrical tape and two half-lapped layers of 7.0-mil vinyl plastic electrical tape.
  - 6. Use cast resin epoxy splices for splices in underground pullboxes.
  - 7. Wrap all wire and cable operating at 480 volts AC or more with electric arc and fireproofing tape where wires are installed with other wires or cables.

**END OF SECTION**

**SECTION 26 05 26**  
**GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
  - 1. Includes oxide inhibiting compound.
- B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

**1.02 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.
- B. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; 2007.
- C. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

**1.03 SUMMARY**

- A. This section describes requirements for grounding of the power and communications systems.

**1.04 DESCRIPTION**

- A. Provide all equipment and materials for a complete grounding system.
  - 1. Power System Grounding.
  - 2. Communications System Grounding.
  - 3. Electrical Equipment and Raceway Grounding and bonding.

**1.05 RELATED REQUIREMENTS**

- A. Section 26 01 00: General Requirements for Electrical Work.

**1.06 REFERENCE STANDARDS**

- A. National Electrical Manufacturers Association (NEMA).
- B. American National Standards Institute (ANSI).

**PART 2 PRODUCTS**

**2.01 GROUNDING AND BONDING REQUIREMENTS**

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

**2.02 GROUNDING AND BONDING COMPONENTS**

- A. General Requirements:
  - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:

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1. Use insulated copper conductors unless otherwise indicated.
  - a. Exceptions:
    - 1) Use bare copper conductors where installed underground in direct contact with earth.
    - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
  1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
  3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
- D. Ground Bars:
  1. Description: Copper rectangular ground bars with mounting brackets and insulators.
  2. Size: As indicated.
  3. Holes for Connections: As indicated or as required for connections to be made.
- E. Ground Rod Electrodes:
  1. Comply with NEMA GR 1.
  2. Material: Copper-bonded (copper-clad) steel.
  3. Size: 3/4 inch (19 mm) diameter by 10 feet (3.0 m) length, unless otherwise indicated.
- F. Pre-Fabricated Signal Reference Grids:
  1. Description: Factory pre-fabricated grid manufactured from 2 inch wide (50 mm wide), 26 gage, flat copper strips spaced on 24 inch (610 mm) centers, factory-welded at each crossover.
  2. Low Impedance Risers: Factory fabricated 2 inch wide (50 mm wide), 26 gage, flat copper strips designed for connecting equipment enclosures to pre-fabricated signal reference grid.
- G. Oxide Inhibiting Compound: Comply with Section 26 05 19.

### **2.03 ACCEPTABLE MANUFACTURERS**

- A. Thomas and Betts Appleton, Raco, Oz Gedney, Blackburn, or approved equal.

### **2.04 MATERIALS**

- A. Ground Clamp: Water pipe connection, bronze two piece with serrated jaws, lug sized for grounding electrode conductor.
- B. Connectors, Compression Type: Bronze or Copper, pretreated with conductive paste, sized for conductor to which applied.
- C. Connectors, Exothermic Weld Type: Powder actuated weld. Bond made through exothermic reaction producing molten copper from premixed copper oxide and aluminum powder. Form bond in mold or crucible.

### **2.05 SECONDARY GROUNDING SYSTEM**

- A. The main grounding system shall consist of bare copper ground wires connected to a UFER ground placed below the bottom of the structural slab. The grounding system shall include, but is not limited to ground cables, fittings, connectors and all other devices and material as required to render the system complete and meet the requirements of California Electrical Code (CEC) Article 250. Connect grounding system to all building columns.
- B. Except where specifically indicated otherwise, all exposed non-current carrying metallic parts of electrical equipment, metallic raceways systems, grounding conductor in nonmetallic raceways and neutral conductor of the wiring system shall be grounded. The ground connection shall be made at the main service equipment of each service and shall be extended to all required components of CEC Article 250.

## 2.06 COMMUNICATIONS GROUNDING SYSTEM

- A. All intermediate distribution frame (IDF) and main distribution frame (MDF) rooms shall have a Telecommunication Ground Bus Bar installed. Refer to drawings for specific size and assembly.
- B. The telecommunication service entrance MDF, shall have a minimum of a #2 AWG conductor with green outer sheath installed to the Telecommunication Ground Bus Bar located in the room.
- C. Except where specifically indicated otherwise, all facility MDFs shall have a minimum of a #4 AWG conductor with green outer sheath installed to the Telecommunication Ground Bus Bar located in each room.
- D. Except where specifically indicated otherwise, all facility IDFs shall have a minimum of a #6 AWG conductor with green outer sheath installed to the Telecommunication Ground Bus Bar located in each room.

## 2.07 GENERAL BRANCH CIRCUITS GROUNDING

- A. All grounding conductor wire shall be insulated green copper conductors.
- B. All conduit bushings shall be grounding type.
- C. All grounding connections shall be made with solderless lugs and nonferrous hardware.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or provide ground plates.
  - 1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches (150 mm) below finished grade.
  - 2. Indoor Installations: Unless otherwise indicated, install with 4 inches (100 mm) of top of rod exposed.
- D. Make grounding and bonding connections using specified connectors.
  - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
  - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
  - 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
  - 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  - 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 26 05 53.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.13.
- D. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- E. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.
- F. Submit detailed reports indicating inspection and testing results and corrective actions taken.

### **3.04 INSTALLATION OF THE MAIN SERVICE ENTRANCE GROUND**

- A. Provide a main service entrance grounding system with cables, connections, and ground buses as shown on the drawings and specified. Provide all necessary materials and testing of the grounding system.
- B. Where available the incoming water service, sprinkler system piping, building steel, UFER ground mat, footing electrode ground rod, and grounding ring encircling the building shall all be bonded together to form a grounding electrode system per CEC Section 250.
- C. Install the grounding system to obtain a ground resistance of the grounding grid not to exceed 5 ohms. Provide testing of the ground grid to obtain a ground resistance rating. If the resistance exceeds 5 ohms, contact the Owner's representative for review of installation and additional procedures.

### **3.05 UFER GROUND SYSTEM**

- A. UFER Ground System shall consist of a bare service ground copper ground conductor connected to a UFER ground placed below the bottom of the structural slab in contact with the earth.
- B. UFER Ground Mat: Form a continuous conductor mat by serpentine No. 500 MCM bare copper conductor of minimum length 60 feet in the bottom of the structure foundation footing. The maximum resistance of the ground mat shall not exceed 5 ohms under normally dry conditions. If this ground resistance cannot be obtained with the 60 feet of mat conductor, additional mat shall be installed in contact with the earth in the bottom of the structural foundation.

### **3.06 TELECOMMUNICATION GROUND SYSTEM**

- A. Provide a separate grounding schematic diagram in accordance with Telecommunications Industry Association (TIA)/ Electronic Industries Alliance (EIA)-606 Administration Standard guidelines for telecommunication system.

### **3.07 GENERAL BRANCH CIRCUITS AND FEEDERS**

- A. All conduit systems, equipment housings, material housings, junction boxes, cabinets, motors, ducts, wireways, cable trays, light fixtures, portable equipment and all other conductive surfaces shall be solidly grounded in accordance with the California Electrical Code to form a continuous, permanent and effective grounding system.
- B. Install a separate green grounding conductor in all conduits, including feeder, branch circuit, and flexible; both metallic and non-metallic. The conduit systems shall not be used as the system equipment grounds. Size all grounding conductors per CEC Article 250 unless a larger ground is indicated on the drawings.
- C. All panelboards, junction boxes, pullboxes, wireways and equipment enclosures shall be bonded to the conduit systems.
- D. All building expansion joints shall be bonded.
- E. Isolated ground receptacles shall have both an isolated ground conductor and a separate equipment grounding conductor.

### **3.08 MOTOR CIRCUITS**

- A. All motor circuits shall have a ground wire pulled with the phase conductors. The ground wire shall be extended from the panel ground bus and shall be bonded at all junction boxes, pullboxes, disconnect switches, controllers, motor connection boxes, and motor frames. Each motor with a Variable Frequency Drive (VFD) controller shall have a dedicated grounding conductor. Ground these motors back through the VFD controller as recommended by the drive manufacturer to eliminate radio frequency interference. Also, the wiring between the VFD controller and the motor shall be in a dedicated conduit.

### **3.09 SEPARATELY DERIVED SOURCES**

- A. All secondary neutrals for the 120/208-volt wye services of dry type transformers shall be grounded to building steel. Connection shall be made with cable sized according to Table 250-94(a) of the California Electrical Code. Extend separately derived insulated ground to the transformer in rigid steel conduit.

### **3.10 EQUIPMENT ROOM GROUND TERMINAL BAR**

- A. Mount bar by anchors and bolts using 1-1/2-inch-long segments of 1/2 inch rigid conduit as spacer between bar and wall. Use a minimum of two supports, 18 inches on center. Connect all grounding electrode system conductors, system enclosure ground bus, and other indicated electrode systems to the terminal bar. Each telecom/his room shall have a ground bar with a minimum of six lugs or screws. Interconnect telecom/his ground bars to building steel with No. 6 AWG insulated copper conductor.

### **3.11 FLEXIBLE RACEWAY GROUNDING**

- A. Install a ground conductor inside all flexible raceways (e.g. flexible steel, liquid tight). Bond the conductor to the enclosure or ground bus in the nearest box or access on either side of the flexible section. Size conductor as specified, indicated or required by code, whichever is larger.

### **3.12 GENERAL GROUNDING REQUIREMENTS**

- A. All ground connectors shall be bronze of the clamp type. All clamp accessories such as bolts, nuts, and washers shall also bronze to assure a permanent corrosion-resistant assembly. Connector shall be as manufactured by Burndy Engineering Company, IlSCO Corporation, or equal. Make connections easily accessible for inspection, underground or concealed in floors or walls.
- B. All ground cable splices, joints, and connections to ground rods shall be made with an exothermic welding process which shall provide a weld with current-carrying capacity not less than that of the conductors welded. Soldered connections shall not be used.
- C. All ground wire shall be insulated, unless otherwise indicated on the Drawings, extra flexible stranded copper cables. Grounding cables installed in earth shall be laid slack.
- D. Neutrals throughout the system shall be solidly grounded.
- E. Lighting and power panelboards shall be grounded by connecting a grounding conductor to the grounding stud and to the incoming and outgoing feeder conduits grounding bushings. Each grounding-type bushing shall have the maximum ground wire accommodation available in standard manufacturer for the particular conduit size. Connection to the bushing shall be with wire of this maximum size.
- F. The equipment for the fire protection alarm system shall have its grounding terminal connected to the ground lug on the panelboard serving the system by means of a #6 green coded insulated conductor, run in 3/4-inch steel conduit, utilizing a ground clamp.

**END OF SECTION**

**SECTION 26 05 34**  
**CONDUIT FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This section describes requirements for conduit raceways.

**1.02 RELATED WORK**

- A. Section 26 01 00: General Requirements for Electrical Work.
- B. Section 26 05 26: Grounding and Bonding.
- C. Section 26 05 29: Hangers and Supports for Electrical Systems
- D. Section 27 10 05: Structured Cabling for Voice and Data

**1.03 REFERENCE STANDARDS**

- A. American National Standards Institute (ANSI):
  - 1. C80.1 Specification for Rigid Steel Conduit, Zinc Coated
  - 2. C80.3 Specification for Electrical Metallic Tubing, Zinc Coated
- B. National Electrical Manufacturers Association (NEMA):
  - 1. TC 2 Electrical Plastic Tubing (EPT), Conduit (EPC-40 and EPC-80) and Fittings
- C. Underwriters Laboratories, Inc. (UL):
  - 1. 1242 Intermediate Metal Conduit
- D. Federal Specifications:
  - 1. WW-C-581E Conduit, Metal Electrical Conduit. Steel, Zinc Coated

**1.04 SUBMITTALS**

- A. Provide submittals for items listed documenting compliance with specification requirements.
  - 1. Product Data.
  - 2. Electrical Materials: Manufacturer's current published catalog sheets.

**PART 2 PRODUCTS**

**2.01 RACEWAYS**

- A. Rigid Steel Conduit:
  - 1. ANSI C80.1, minimum size 3/4 inch.
  - 2. Threaded fittings, galvanized.
  - 3. Locknuts, 3/4 inch to 1-1/2-inch, heavy nut steel.
  - 4. Locknuts, 1-1/2 inch and larger, malleable iron.
  - 5. Insulated bushings, malleable iron, plastic or nylon insert, OZ "IBC" series, Efcor "56" series, Appleton "GIB" series or equal.
  - 6. Three-piece conduit couplings, malleable iron, T & B "Erickson", Appleton "EC" series, OZ "4" series, or equal.
- B. Intermediate Metal Conduit (IMC):
  - 1. Conform to UL 1242 and Federal Specification WW-C-581E, minimum size 3/4 inch.
  - 2. Fittings: As specified for rigid steel conduit.
- C. Electrical Metallic Tubing (EMT):
  - 1. Galvanized rolled steel ANSI C80.3.
  - 2. Fittings to 2-inch, rain-tight compression gland, steel, plated with zinc or cadmium, for wet locations and setscrew steel for dry locations.
  - 3. Couplings, to 2-inch:
    - a. Compression type: OZ "6050S" series, T & B "5120" series, Efcor "760" series, or equal.
    - b. Setscrew type: OZ "5050S" series, Steel City "TK121" series, Efcor "730" series, or equal.

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4. Connectors, insulated throat:
    - a. Compression type: OZ "7050 ST" series, T & B "5123" series, Efcor "750B" Series, or equal.
    - b. Setscrew type: OZ "4050 ST" series, Steel City "TC721" series, Efcor "720B" Series, or equal.
  5. Couplings, 2-1/2 inch to 4-inch, set-screw, four screw, steel plated with zinc or cadmium, OZ "5250S" series, T & B "5042" series, Efcor "736" series, or equal.
  6. Connectors, 2-1/2 inch to 4-inch, insulated throat, set-screw, two screw, plated with zinc or cadmium, Appleton "TW250 SI" series, Efcor "726B" series, or equal.
  7. Adapter, EMT to rigid steel, zinc or cadmium plated malleable iron, OZ, T & B, Efcor, or equal.
  8. Maximum size, 2 inch, except for Telephone, 4 inch.
- D. Flexible Metal Conduit:
1. Fabricate from galvanized steel strip, minimum size 1/2 inch.
  2. Connectors, T & B "Tite Bite", with insulated throat, or equal.
  3. Length, no greater than 6 feet. Allow slack for movement of connected equipment.
- E. Liquid-tight Flexible Metal Conduit:
1. Fabricate from galvanized steel strip, jacketed with PVC, minimum size 1/2 inch.
  2. Straight connectors, cadmium plated steel or malleable iron, insulated throat and neoprene sealing ring, OZ "4Q-IT" series, T & B "5330" series, Efcor "11-B" series, or equal.
  3. Angle connectors, cadmium plated steel or malleable iron, insulated throat and neoprene sealing ring, OZ, T & B, Efcor, or equal, comparable to straight connectors.
  4. Hardware, cadmium plated steel.
  5. Length, no greater than 6 feet. Allow slack for movement of connected equipment.
- F. PVC Conduit:
1. Schedule 40, NEMA TC2, Type II underground installation.
    - a. Minimum size, 1 inch.
    - b. Elbows, Schedule 40, encased in concrete for sizes 2-inch and larger.
    - c. Extensions above grade, rigid steel (exposed), EMT (concealed indoors).
    - d. Adapters, PVC to rigid steel, threaded plastic.
  2. Schedule 80, NEMA TC2, Type II underground installations for emergency circuits.
    - a. Minimum size, 1 inch.
    - b. Extensions above grade, rigid steel (exposed), EMT (concealed indoors).
    - c. Adapters, PVC to rigid steel, threaded plastic.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in a neat and workmanlike manner in accordance with NECA 1.
- C. Conduit Support:
  1. Secure and support conduits in accordance with CEC and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
  2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Connections and Terminations:
  1. Use suitable adapters where required to transition from one type of conduit to another.
  2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
  3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- E. Penetrations:

1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  4. Conceal bends for conduit risers emerging above ground.
  5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
  6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
  7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
  8. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.
- F. Conduit Movement Provisions: Where conduits are subject to thermal expansion, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. Where conduits are subject to seismic movement, provide 6 feet max. flex conduit with grounding fittings on each end bonded with #6 green wire. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection (seismic expansion joint).
- G. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
1. Where conduits pass from outdoors into conditioned interior spaces.
  2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- H. Provide grounding and bonding in accordance with Section 26 05 26.
- I. Hazardous (Classified) Locations: Where conduits cross boundaries of hazardous (classified) locations, provide sealing fittings located as indicated or in accordance with CEC.

### **3.02 ABOVE GROUND RACEWAY SYSTEMS**

- A. Install all wiring in raceways. Install raceway systems, including conduits, hangers and support channels parallel or perpendicular to structural members in accordance with Section 26 05 29 Hangers and 260502 Support. Coordinate location of raceway systems with other Divisions prior to commencing installation.
- B. Rigid Steel Conduit: Suitable for use in all locations.
- C. Intermediate Metal Conduit: As specified for rigid steel.
- D. Electrical Metallic Tubing: Suitable for use in concealed dry locations, not in concrete, masonry, or underground, and suitable exposed, minimum 8 feet above finished floor.
- E. Flexible Metal Conduit: Suitable for connection of recessed lighting fixtures, motors or other devices requiring flexible connections in dry locations.
- F. Liquid-Tight Flexible Metal Conduit: Suitable for connection of motors and equipment in damp or wet locations.
- G. Patient Care Areas In Healthcare Facilities:
  1. All branch circuits serving patient care areas shall be provided with a ground path for fault current by installation in a metal raceway system, or a cable having a metallic armor or sheath assembly.

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2. The metal raceway system, metallic cable armor, or sheath assembly shall itself qualify as an equipment grounding return path. This equipment grounding return path is in addition to the equipment ground wire specified in Section 26 05 26, Grounding and Bonding.
- H. Conduit Supports:
1. Support all conduits at intervals per Chapter 3 of the CEC for the selected raceway type (not to exceed 10-feet).
  2. Support individual conduits with conduit hangers or clamp back and nest back, if required for entrance into the equipment.
  3. Support multiple conduits, 2 or more in parallel, with framing channel and pipe clamps.
  4. Spring steel fasteners may be used to fasten electrical metallic tubing to individual hanger wires, minimum #12 AWG, specifically used for hanging conduit, nothing else.
- I. Conduit Bends:
1. Provide no more than (3) 90-degree conduit bends or the equivalent number of smaller radius bends in any conduit run between boxes or equipment.
  2. Length of run: 400-feet maximum less 100-feet for each equivalent 90-degree bend.
  3. Fabricate bends and offsets with a hickey or conduit bender designed specifically for use with the type of conduit to be bent, or use factory made bend.
  4. Radius of Bends: Conduits 2" inside diameter or less the inside bend radius shall be at least 6 times the diameter. Conduits greater than 2" diameter the inside bend radius shall be at least 10 times the conduit diameter.
- J. Cap conduits during construction to prevent entrance of foreign material.
- K. Provide conduit-sealing bushings at conduit penetrations through exterior walls to seal against fluid and gas pressure around the conduit.
- L. Fit all conduits that enter the enclosure of a switchboard, distribution panel, or motor control center with an insulated grounding bushing.
- M. Install pull ropes in all empty conduits, #12 AWG in conduits 1 inch and smaller and 3/16-inch polypropylene rope in conduits 1-1/4 inch and larger.

### 3.03 UNDERGROUND RACEWAY SYSTEMS

- A. Install all wiring in raceways. Coordinate location of raceway systems with other Divisions prior to commencing installation. Provide excavation, clearances from other utilities, encasing, trenching, boring, backfill, compaction, patching, per Division 31 Site Preparation. Provide conduits per drawings.
- B. EXCAVATING AND BACKFILLING
1. Excavate and backfill as required for installation of electrical work. Maintain all warning signs, barricades, flares and lanterns as required by the Safety Orders and local ordinances.
  2. Excavation: Dig trenches straight and true to line and grade, with bottom clear of any rock points. Support conduit for entire length on undisturbed original earth. Backfill: All backfill material shall be local material free of rubble, rubbish or vegetation. Trenches shall be backfilled and compacted to 90% of maximum dry density at optimum moisture content in layers not to exceed 6" when compacted.
  3. Minimum Coverage (depth) - Per CEC Table 300.5
  4. Area of Influence- Do not install conduits parallel to building footings in the area of influence. See structural drawings and specifications for the area of influence and the methods that conduits can cross a footing.
  5. Drain Slope- Underground conduit shall be installed such that a .125" per foot min. slope exists at all points of the run to allow drainage and prevent the accumulation of water. Provide a drain slope of greater than .125" per foot when extending conduit away from a building.
  6. Provide underground warning tape along entire conduit length.
- C. CUTTING AND PATCHING

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1. Provide necessary cutting and patching required to accomplish the work of Division underground 26. Restore all surfaces, roadways, sod, walks, curbs, walls, existing underground installation, etc., cut by installations to original condition in an acceptable manner.
- D. Conduit Bends:
1. Provide no more than (3) 90-degree conduit bends or the equivalent number of smaller radius bends in any conduit run between boxes or equipment.
  2. Length of run: 400-feet maximum less 100-feet for each equivalent 90-degree bend.
  3. Fabricate bends and offsets with a hickey or conduit bender designed specifically for use with the type of conduit to be bent, or use factory made bend.
  4. Radius of Bends: Conduits 2" inside diameter or less the inside bend radius shall be at least 6 times the diameter. Conduits greater than 2" diameter the inside bend radius shall be at least 10 times the conduit diameter.
- E. CONCRETE DUCT BANK CONSTRUCTION
1. Provide plastic spacers at maximum 5'-0" centers to maintain 3" spacing between conduits.
  2. Drive two reinforcing bars to anchor the conduits at 10'-0" centers to prevent floating during concrete pour.
  3. Provide 3" wide yellow "Electric Line", T& B, Westline or equal plastic warning tape 18" above duct bank.
  4. Provide one warning tape for each 12" width of concrete duct bank or fraction thereof. Minimum ground
  5. Cover for concrete duct bank shall be 2'-6".
- F. Rigid Steel Conduit: Suitable for use in all locations. Where used underground, wrap with no less than 2 layers of half-lapped 10 mil vinyl pipe wrapping tape, Manville, Minnesota Mining
- G. PVC Conduit: Suitable for use underground, with a minimum of 18 inches of cover. Also suitable for use in concrete slabs (for healthcare facilities, use Schedule 80 PVC ). Fabricate field bends with an approved thermal bender and jig. Maintain separation between conduits using plastic spacers specifically designed for the purpose.
- H. Provide conduit-sealing bushings at conduit penetrations through exterior walls to seal against fluid and gas pressure around the conduit. Ducts shall be sealed to resist liquid and gas infiltration at all maintenance holes and building entrances.
- I. Install pull ropes in all empty conduits, #12 AWG in conduits 1 inch and smaller and 3/16-inch polypropylene rope in conduits 1-1/4 inch and larger.
- J. Fit PVC conduits that enter pullboxes and junction boxes with belled ends.

**END OF SECTION**

**SECTION 26 05 37**  
**BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Provide electrical materials, installation and testing for the project improvements.

**1.02 DESCRIPTION**

- A. This section describes requirements for outlet boxes.

**1.03 RELATED WORK**

- A. Section 26 01 00: General Requirements for Electrical Work.

**1.04 REFERENCE STANDARDS**

- A. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association; 2007.
- B. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; National Electrical Manufacturers Association; 2008.
- C. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports; National Electrical Manufacturers Association; 2008.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.

**1.05 SUBMITTALS**

- A. Provide submittals for items listed documenting compliance with specification requirements.
- B. Product Data:
  - 1. Electrical Materials: Manufacturer's current published catalog sheets.

**PART 2 PRODUCTS**

**2.01 BOXES**

- A. General Requirements:
  - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
  - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
  - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches (1,650 cu cm), Including Those Used as Junction and Pull Boxes:
  - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
  - 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
  - 3. Use suitable concrete type boxes where flush-mounted in concrete.
  - 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
  - 5. Use raised covers suitable for the type of wall construction and device configuration where required.
  - 6. Use shallow boxes where required by the type of wall construction.
  - 7. Do not use "through-wall" boxes designed for access from both sides of wall.
  - 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.

9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
  10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
  11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
  12. Wall Plates: Comply with Section 26 27 26.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
  2. NEMA 250 Environment Type, Unless Otherwise Indicated:
  3. Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
    - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
- D. Cast Boxes: NEMA FB 1, Type FD, cast ferrous alloy. Provide gasketed cover by box manufacturer. Provide threaded hubs.

## **2.02 OUTLET BOXES**

- A. Construction: Deep drawn or fabricated interlocked flat pieces with welded tabs, electro-galvanized sheet steel with electro-galvanized hardware. Do not use sectional boxes.
- B. Size: To accommodate the required number and sizes of conduits, wires, splices and devices but not smaller than the size indicated or specified.
- C. Plaster Ring: Provide flush with wall or ceiling finish, except where otherwise indicated or specified.
- D. Device Boxes: For single switches and receptacles, provide boxes not less than 4 inches square by 1-1/2 inches deep. For 2 devices, provide boxes not less than 4-11/16 inches square by 1-1/2 inches deep.
- E. Telecommunications Boxes: No less than 4-11/16 inches square by 2 inches deep.
- F. Special Mounting: In cabinets, tile, concrete block, brick, stone, wood or similar material, provide rectangular boxes with square corners and straight sides. For single devices, provide boxes 4 inches high by 2-1/2 inches wide by 3-3/8 inches deep. For 2 or more devices, provide multi-gang, non-sectional box with tile or masonry ring.
- G. Lighting Fixtures: 4-inch octagon by 2-1/8-inch-deep, minimum. Fit boxes for surface or pendant mounted fixtures with 3/8-inch malleable iron fixture stud.
- H. Attach device boxes with adjustable bar type hangers screw fastened to two stud/ceiling joists on both sides of box.

## **2.03 PULL AND JUNCTION BOXES**

- A. General: For all pull and junction boxes over 300 cubic inches, provide code gauge, sheet steel boxes which meet NEMA 1 standards for panelboard and terminal cabinet box construction, with screw type covers.
- B. Ground Lug: Weld, before finish is applied, a grounding pad drilled for two bolted grounding lugs or two ground studs on the box interior.
- C. Finish: Apply rust inhibiting prime coat and 2 coats of baked enamel, standard factory gray.
- D. Hardware: Cadmium plated steel screws.

## **2.04 PRECAST CONCRETE BOXES**

- A. Provide high-density reinforced concrete pull and junction boxes with end and side knockouts as manufactured by Christy, Forni, Brooks, or approved equal. Fabricated boxes with non-settling shoulders to facilitate maintaining grade during backfilling. Unless noted otherwise, provide galvanized steel checker plate covers with hold-down bolts, identified as follows:

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1. System Identification
2. Power - 600 volts or less Electrical
3. Power - 2300 volts Electrical (Provide high voltage warning sign per Title 8)

**PART 3 EXECUTION**

**3.01 BOXES AND CABINETS**

- A. Place outlet boxes in a location as close to that shown on the plans as possible. Coordinate location of boxes with other Divisions.
- B. Install wall mounted outlet boxes so that the distance from the centerline of the box to finished floor is as listed or indicated:
  1. Receptacles, + 1 foot-6 inches
  2. Telephone, + 1 foot-6 inches
  3. Data, + 1 foot-6 inches
  4. Switches, + 4 feet-0 inches
- C. Install junction boxes with covers in concealed areas accessible after installation. Do not install junction boxes flush with finish walls or ceilings unless specifically approved by the Engineer.
- D. Attach surface boxes with:
  1. Steel or malleable iron expansion anchors in concrete or solid masonry.
  2. Wood screws in wood.
  3. Toggle bolts in hollow walls or masonry.
  4. Machine screws, bolts or welded studs in steel.
- E. Attach flush boxes with adjustable bar type hangers screw fastened to studs on both sides of the box.

**END OF SECTION**

**SECTION 26 05 53**  
**IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Extent of electrical identification work is as outlined by this specification.
- B. Types of electrical identification work specified in this section include the following:
  - 1. Buried cable warnings.
  - 2. Electrical power, control and communication conductors.
  - 3. Operational instructions and warnings.
  - 4. Danger signs.
  - 5. Equipment/system identification signs.
- C. Submit complete schedule with the shop drawings listing all nameplates and information contained thereon.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 01 00: General Requirements for Electrical Work.

**1.03 QUALITY ASSURANCE**

- A. California Electrical Code (CEC) Compliance: Comply with CEC as applicable to installation of identifying labels and markers for wiring and equipment.
- B. Underwriters Laboratories, Inc. (UL) Compliance: Comply with applicable requirements of UL Standard 969, "Marking and Labeling Systems", pertaining to electrical identification systems.
- C. American National Standards Institute (ANSI) Compliance: Comply with applicable requirements of ANSI Standard A13.1, "Scheme for the Identification of Piping Systems".
- D. National Electrical Manufacturer's Association (NEMA) Compliance: Comply with applicable requirements of NEMA Standard No's WC-1 and WC-2 pertaining to identification of power and control conductors.

**1.04 SUBMITTALS**

- A. Product Data: Submit manufacturer's data on electrical identification materials and products.
- B. Samples: Submit samples of each color, lettering style and other graphic representation required for each identification material or system.

**PART 2 PRODUCTS**

**2.01 IDENTIFICATION REQUIREMENTS**

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
  - 2. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70, including but not limited to the following.
    - a. Service equipment.
    - b. Industrial control panels.
    - c. Motor control centers.
    - d. Elevator control panels.
    - e. Industrial machinery.
- B. Identification for Conductors and Cables:
  - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
  - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.

## 2.02 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
  - 1. Materials:
  - 2. Minimum Size: 7 by 10 inches (178 by 254 mm) unless otherwise indicated.
- C. Warning Labels:
  - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
  - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
  - 3. Minimum Size: 2 by 4 inches (51 mm by 102 mm) unless otherwise indicated.

## 2.03 ACCEPTABLE MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide electrical identification products of one of the following (for each type marker):
  - 1. Almetek,
  - 2. Brady, W.H. Company,
  - 3. Calipico Inc.,
  - 4. Cole-Flex Corporation,
  - 5. Direct Safety Company,
  - 6. George-Ingraham Corporation,
  - 7. Griffolyn Company,
  - 8. Ideal Industries, Inc.,
  - 9. LEM Products, Inc.,
  - 10. Markal Company,
  - 11. National Band and Tag Company,
  - 12. Panduit Corporation,
  - 13. Seton Name Plate Company,
  - 14. Tesa Corporation,
  - 15. Or equal.

## 2.04 ELECTRICAL IDENTIFICATION MATERIALS

- A. Except as otherwise indicated, provide manufacturer's standard products of categories and types required for each application. Where more than single type is specified for an application, provide single selection for each application.
- B. Color-Coded Plastic Tape:
  - 1. Provide manufacturer's standard self-adhesive vinyl tape not less than 3 mils thick by 1-1/2 inches wide.
    - a. Colors: Unless otherwise indicated or required by governing regulations, provide orange tape.
- C. Underground-Type Plastic Line Marker:
  - 1. Manufacturer's standard permanent, bright-colored, continuous-printed plastic tape, intended for direct-burial service; not less than 6 inches wide x 4 mils thick. Provide tape with printing which most accurately indicates type of service of buried cable.
- D. Cable/Conductor Identification Bands:
  - 1. Provide manufacturer's standard vinyl-cloth self-adhesive cable/conductor markers of wrap-around type, either pre-numbered plastic coated type, or write-on type with clear plastic self-adhesive cover flap; numbered to show circuit identification.
- E. Plasticized Tags:
  - 1. Manufacturer's standard pre-printed or partially pre-printed accident-prevention and operational tags, of plasticized card stock with matte finish suitable for writing, approximately 3-1/4 x 5-5/8 inches, with brass grommets and wire fasteners, and with

appropriate pre-printed wording including large-size primary wording, e.g., DANGER, CAUTION, DO NOT OPERATE.

- F. Self-Adhesive Plastic Signs:
  - 1. Provide manufacturer's standard, self-adhesive or pressure-sensitive, pre-printed, flexible vinyl signs for operational instructions or warnings; of sizes suitable for application areas and adequate for visibility, with proper wording for each application, e.g., 208V, EXHAUST FAN, RECTIFIER.
- G. Colors: Unless otherwise indicated, or required by governing regulations, provide white signs with black lettering.
- H. Baked Enamel Danger Signs:
  - 1. General: Provide manufacturer's standard DANGER signs of baked enamel finish on 20-gauge steel; of standard red, black and white graphics; 14 x 10 inches size except where 10 x 7 inches is the largest size which can be applied where needed, and except where larger size is needed for adequate vision; with recognized standard explanation wording, e.g., HIGH VOLTAGE, KEEP AWAY, BURIED CABLE, DO NOT TOUCH SWITCH.
- I. Engraved Plastic-Laminate Signs:
  - 1. Provide engraving stock melamine plastic laminate, complying with FS L-P-387, in sizes and thicknesses indicated, engraved with engraver's standard letter style of sizes and wording indicated, black face and white core plies (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.
  - 2. Thickness: 1/8 inch, except as otherwise indicated.
  - 3. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate substrate.

## 2.05 LETTERING AND GRAPHICS

- A. General: Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturer or as required for proper identification and operation/maintenance of electrical systems and equipment. Comply with ANSI A13.1 pertaining to minimum sizes for letters and numbers.

## PART 3 EXECUTION

### 3.01 APPLICATION AND INSTALLATION

- A. General Installation Requirements:
  - 1. Install electrical identification products as indicated, in accordance with manufacturer's written instructions, and requirements of CEC and OSHA.
  - 2. Coordination: Where identification is to be applied to surfaces which require finish, install identification after completion of painting.
  - 3. Regulations: Comply with governing regulations and requests of governing authorities for identification of electrical work.
- B. Conduit Identification:
  - 1. Where electrical conduit is exposed in spaces with exposed mechanical piping, which is identified by color-coded method, apply color-coded identification on electrical conduit in manner similar to piping identification. Except as otherwise indicated use white as coded color for conduit.
- C. Box Identification:
  - 1. After completion, using an indelible wide tip marker, indicate on the cover of each junction and pull box the designation of the circuits contained therein, i.e., A-1, 3, 5. Use a black marker for normal power circuits a red marker for critical circuits, an orange marker for life safety circuits, and a green marker for equipment circuits.

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2. All junction and pull boxes for wiring systems above 600V shall be identified with high voltage warning labels installed every 20 linear feet in accordance with OSHA standards. All boxes shall also be painted red, see Section 09900 of the specifications.
  3. All junction and pull boxes for the fire alarm system shall be painted red. All raceway for the fire alarm system shall be labeled "Fire Alarm" in red letters on intervals not to exceed ten feet.
- D. Underground Cable Identification:
1. During back-filling/top-soiling of each exterior underground electrical, signal or communication conduits, install continuous underground-type plastic line marker, located directly over buried line at 6 to 8 inches below finished grade. Where multiple small lines are buried in a common trench and do not exceed an overall width of 16 inches, install a single line marker.
  2. Install line marker for every buried conduit.
- E. Cable/Conductor Identification:
1. Apply cable/conductor identification, including voltage, phase and feeder number, on each cable/conductor in each box/enclosure/cabinet where wires of more than one circuit or communication/signal system are present, except where another form of identification (such as color-coded conductors) is provided. Match identification with marking system used in panelboards, shop drawings, contract documents, and similar previously established identification for project's electrical work. Refer to Section 16100 - Basic Materials and Methods of these specifications for color coding requirements.
- F. Operational Identification and Warnings:
1. Wherever required by OSHA or directed by the Owner's Representative, to ensure safe and efficient operation and maintenance of electrical systems, including prevention of misuse of electrical facilities equipment by unauthorized personnel, install self-adhesive plastic signs or similar equivalent identification, instruction or warnings on switches, outlets and other controls, devices and covers of electrical enclosures. Where detailed instructions or explanations are needed, provide plasticized tags with clearly written messages adequate for intended purposed. Request a meeting with the Owner's Representative prior to substantial completion to coordinate warning requirements.
- G. Danger Signs:
1. In addition to installation of danger signs required by governing regulations and authorities, install appropriate danger signs at locations identified by the Owner's Representative as constituting similar dangers for persons in or about project. Request a meeting with the Owner's Representative prior to substantial completion to coordinate danger sign requirements.
    - a. High Voltage: Install danger signs wherever it is possible, under any circumstances, for persons to come into contact with electrical power of voltages higher than 110-120 volts.
    - b. Critical Switches/Controls: Install danger signs on switches and similar controls, regardless of whether concealed or locked up, where untimely or inadvertent operation (by anyone) could result in significant danger to persons, or damage to or loss of property.
- H. Equipment/System Identification:
1. Install engraved plastic-laminate sign on each major unit of electrical equipment in building; including central or master unit of each electrical system including communication/control/signal systems, unless unit is specified with its own self-explanatory identification or signal system. Except as otherwise indicated, provide single line of text, 1/2-inch-high lettering, on 1-1/2 inch high sign (2 inch high where 2 lines are required), white lettering in black field. Provide text matching terminology and numbering of the contract documents and shop drawings. Provide signs for each unit of the following categories of electrical work:
    - a. Electrical cabinets and enclosures.
    - b. Access panel/doors to electrical facilities.

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- c. Transformers.
- d. Fire alarm control panel, battery cabinets, voice alarm system cabinets, and transponders.
- e. Automatic transfer switches.
2. Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate. Identification of flush mounted cabinets and panelboards shall be on the inside of the device.
3. Panelboards, individually mounted circuit breakers, and each breaker in the switchboards, secondary unit substations, and distribution panels shall be identified with an engraved plastic laminate sign. Plastic nameplates shall be multicolored laminated plastic with faceplate and core as scheduled. Lettering shall be engraved minimum 1/4 inch high letters.
  - a. 480/277 volt normal power equipment shall be identified with white faceplate with green core.
  - b. 480/277 volt critical branch power equipment shall be identified with white faceplate with yellow core.
  - c. 480/277 volt life safety branch power equipment shall be identified with white faceplate with red core.
  - d. 480/277 volt equipment branch power equipment shall be identified with white faceplate with blue core.
  - e. 208/120 volt normal power equipment shall be identified with green faceplate with white core.
  - f. 208/120 volt critical branch power equipment shall be identified with yellow faceplate with white core.
  - g. 208/120 volt life safety branch power equipment shall be identified with red faceplate with white core.
  - h. 208/120 volt equipment branch power equipment shall be identified with blue faceplate with white core.
  - i. Equipment identification is to indicate the following:
    - 1) Equipment ID abbreviation.
    - 2) Voltage, phase, wires and frequency.
    - 3) Emergency or other system.
    - 4) Power source origination.
    - 5) Example:
      - (a) Panel GLSH1
      - (b) 480/277V, 3 phase, 4 wire
      - (c) Life Safety System
      - (d) Fed by GLSD1

**END OF SECTION**

**SECTION 26 05 74**  
**ARC FLASH STUDY**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. The purpose of this study is to provide a complete arc flash program to protect individuals working on its premises from electrical arc flash hazards. These individuals may include any workers who inspect, maintain, or operate energized electrical equipment.

**1.02 SCOPE**

- A. Engage and pay for the services of a recognized independent Testing laboratory/Firm for the purpose of performing inspections and tests as herein specified.
- B. The Firm should be currently involved in high- and low-voltage power system evaluation. The study must be performed, stamped and signed by a registered professional engineer. Credentials of the individual(s) performing the study and background of the Firm must be submitted to the Engineer for approval prior to start of the work. A minimum of five (5) years' experience in power system analysis is required for the individual in charge of the project.
- C. The Firm performing the study should demonstrate capability and experience to provide assistance during start up as required.
- D. The Firm must provide all material, equipment, labor and technical supervision to perform such tests and inspections.
- E. It is the intent of these tests to assure that all electrical equipment, both Contractor and Owner-supplied, is operational within industry and manufacturer's tolerances and is installed in accordance with design specifications.

**1.03 RELATED REQUIREMENTS**

- A. Section 26 0100: General Requirements for Electrical Work.

**1.04 SAFETY AND PROCEDURAL REQUIREMENTS**

- A. The Firm must provide proof (written documentation) that its employees working on the premises have been properly trained in the use and application of personal protective equipment (PPE) and the hazards of working on or near energized equipment.
- B. Safety practices that must be followed include, but are not limited to, the following:
  - 1. Occupational Safety and Health Act
  - 2. Accident Prevention Manual for Industrial Operations, National Safety Council
  - 3. Applicable state and local safety operating procedures
  - 4. Owner's safety practices
- C. Perform all work in accordance with the applicable codes and standards of the following agencies except as provided otherwise herein:
  - 1. InterNational Electrical Testing Association – NETA ATS latest Edition: Acceptance Testing Specifications, and/or NETA MTS latest Edition: Maintenance Testing Specifications.
  - 2. National Fire Protection Association – NFPA
    - a. ANSI/NFPA 70: National Electrical Code (NEC)
    - b. ANSI/NFPA 70B: Recommended Practice for Electrical Equipment Maintenance
    - c. NFPA 70E: Electrical Safety Requirements for Employee Workplaces

**1.05 DATA COLLECTION FOR THE STUDY**

- A. The Contractor must provide the required data for preparation of the studies. The Firm performing the system studies must furnish the Contractor with a listing of the required data immediately after award of the contract.
- B. The Firm must provide an up to date electrical system single-line diagram as required by NFPA 70E, 2009 Edition, "Standard for Electrical Safety in the Workplace", as referenced in OSHA 29

CFR 1910 Subpart S, Appendix A. This information must include nameplate data for electrical components (e.g. transformers, medium voltage switchgear, panelboards, switchboards, motor control centers, etc.) for all portions of the electrical system from the utility intertie through the lowest rated panel.

- C. Utilize up to date Cable sizes, types and lengths between electrical equipment components and utility source data for an accurate single-line representation of the electrical system. Utilize unique characteristics of the equipment installation which may impact the magnitude of the potential hazard (e.g. open space versus enclosure). Verify over-current device settings.
- D. Data collection may require removal of barriers, opening of front panels, etc. while equipment is energized. The Firm must provide its own PPE protection with a minimum arc thermal performance rating (ATPV) of 40 calories/cm<sup>2</sup>.

## **PART 2 PRODUCTS (NOT USED)**

## **PART 3 EXECUTION**

### **3.01 SYSTEM ANALYSIS**

- A. Perform a comprehensive analysis of the facility's electrical system for all equipment 480 volt and higher and 240 volt served by a 125kVA or larger transformer based on the up to date single-line diagram provided from Part 1. Include the following:
  - 1. Short Circuit Study – Perform a short circuit analysis in accordance with ANSI standard C37 and IEEE standard 141-1993 (Red Book) for each electrical component as defined in "Section A. "
  - 2. Coordination Study – Perform a coordination study in accordance with IEEE 242-2001 "Buff" to determine the proper over-current device settings that will balance system reliability through selective coordination while minimizing the magnitude of an electrical arc flash hazard incident.
  - 3. Incident Energy Study – Perform an incident energy study in accordance with the IEEE 1584-2004a, "IEEE Guide for Performing Arc Flash Hazard Calculations" as referenced in NFPA 70E, "Standard for Electrical Safety in the Workplace", 2009 Revision, in order to quantify the hazard for selection of personal protective equipment (PPE). Tables that assume fault current levels and clearing time for proper PPE selection are not acceptable. Assist the Owner in selecting appropriate combinations of PPE prior to the final analysis and preparation of equipment labels.

### **3.02 DESIGN REVIEW**

- A. Assist the Owner with system design adjustments to optimize the results of the study as it relates to safety and reliable electrical system operation (e.g. overcurrent device settings, working distances, current limiting devices). This includes mitigation, where possible, of incident energy levels that exceed 40 calories/cm<sup>2</sup>. A qualified engineer with power systems design experience must provide this assistance.

### **3.03 STUDY REPORT**

- A. Provide a comprehensive report that includes:
  - 1. Report summary with analysis methodology, findings and recommendations
  - 2. Summary of input data for utility source, equipment and cables
  - 3. Available fault current at each equipment location with comparison to equipment rating
  - 4. Overcurrent device settings (e.g. pick-up, time delay, curve), "as found" and "as recommended"
  - 5. Incident energy level (calories/cm<sup>2</sup>) for each equipment location and recommended PPE
  - 6. Overcurrent device coordination curves including related section of the single-line diagram
  - 7. Complete system single-line diagram for the system analyzed
- B. Labels
  - 1. Based on the results of the incident energy study, provide and install a warning label (orange <40 cal/cm<sup>2</sup>) or danger label (red > 40 cal/cm<sup>2</sup>) for each piece of equipment as specified in "Section A" in accordance with ANSI Z535.4-2002. The label must be

readable in both indoor and outdoor environments for at least 3 years and contain the following information:

2. Arc hazard boundary (inches)
  3. Working distance (inches)
    - a. Arc flash incident energy at the working distance (calories/ cm<sup>2</sup>)
      - 1) PPE category and description including the glove rating
        - (a) Voltage rating of the equipment
        - (b) Limited approach distance (inches)
        - (c) Restricted approach distance (inches)
        - (d) Prohibited approach distance (inches)
        - (e) Equipment/bus name
        - (f) Date prepared
        - (g) Supplier name and address
- C. Equipment Verification/Operation
1. The validity of the arc flash study and incident energy readings is in part based on proper setting of over-current device trip times and the proper operation of the over-current devices and breakers themselves. Verify proper operation of over-current devices and breakers at the request of the Owner using InterNational Electrical Testing Association (NETA) qualified technicians.
  2. The Firm must be capable of adjustment, maintenance, repair or replacement of over-current devices or breakers as required to support the performance of the electrical system in line with the expectations of the system study.
- D. Safety Training
1. Provide the Owner with one day of arc flash safety training that contains the requirements referenced in OSHA 1910.269, OSHA 1910 Subpart S and NFPA 70E including:
    - a. Proper use of the system analysis data
    - b. Interpretation of hazard labels
    - c. Selection and utilization of personal protective equipment
    - d. Safe work practices and procedures
  2. Provide the Owner an outline of the one-day training course including training materials at time of quotation. The Owner at its discretion may require additional training customized to its specific needs. The Firm must be capable of developing and presenting customized training for approval as required.
  3. Provide a training certificate to record satisfactory completion by the Owner's employees for continuing education credits and re-licensing requirements. Satisfactory completion is defined as the student obtaining a minimum of 70% on the post training examination and the ability to work safely if a hands-on performance evaluation is provided.

### **3.04 SAFETY DOCUMENTATION/POLICY**

- A. At the request of the Owner, integrate the results of the system study and design review into the safety manual in compliance with OSHA CFR 29 1910.333. Assist the Owner at its request to develop a safety policy with corresponding documentation and procedures including information gained in the system analysis. This includes electrical safety, procedures for mitigation of arc hazards, PPE selection based on specific equipment of the Owner, task and training requirements.

**END OF SECTION**

**SECTION 26 09 23**  
**LIGHTING CONTROL**

**PART 1 – GENERAL**

**1.01 SUMMARY**

- A. Provide electrical materials, installation and testing for the project defined in Section 26 01 00.

**1.02 DEFINITIONS**

- A. LED: Light-emitting diode.
- B. PIR: Passive infrared.

**1.03 RELATED DOCUMENTS**

- A. Wiring Devices

**1.04 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show installation details for occupancy and light-level sensors.
  - 1. Lighting plan showing location, orientation, and coverage area of each sensor.
  - 2. Interconnection diagrams showing field-installed wiring.
- C. Field quality-control test reports.
- D. Operation and maintenance data.

**1.05 QUALITY ASSURANCE**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70/California Electric Code (CEC), Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

**PART 2 – PRODUCTS**

**2.01 GENERAL LIGHTING CONTROL DEVICE REQUIREMENTS**

- A. Line-Voltage Surge Protection: An integral part of the devices for 277-V solid-state equipment. For devices without integral line-voltage surge protection, field-mounting surge protection shall comply with IEEE C62.41 and with UL 1449.
- B. Time Switches
  - 1. Digital Time Switches: Electronic, solid-state programmable units with alphanumeric display complying with UL 917.
    - a. Contact Configuration: SPST.
    - b. Contact Rating: 30-A inductive or resistive, 277-V ac.
    - c. Program: Single channel, 8 on-off set points on a 24-hour schedule.
    - d. Circuitry: Allow connection of a photoelectric relay as substitute for on and off function of a program on select channels.
    - e. Astronomical Time: All channels.
    - f. Battery Backup: For schedules and time clock.

C. Outdoor Photoelectric Switches

1. Description: Solid state, with SPST dry contacts rated for 1800-VA tungsten or 1000-VA inductive, to operate connected relay, contactor coils, microprocessor input, and complying with UL 773A.
  - a. Light-Level Monitoring Range: 1.5 to 10 fc with an adjustment for turn-on and turn-off levels within that range, and a directional lens in front of photocell to prevent fixed light sources from causing turn-off.
  - b. Time Delay: 15-second minimum, to prevent false operation.
  - c. Surge Protection: Metal-oxide varistor type, complying with IEEE C62.41 for Category A1 locations.
  - d. Mounting: Twist lock complying with IEEE C136.10, with base-and-stem mounting or stem-and-swivel mounting accessories as required to direct sensor to the North sky exposure.

**PART 3 – EXECUTION**

**3.01 SENSOR INSTALLATION**

- A. Install and aim sensors in locations to achieve at least 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

**3.02 WIRING INSTALLATION**

- A. Wiring Method: Comply with Division 26 Sections "LV Electrical Power Conductors and Cables" and "Conduit". Minimum conduit size shall be 3/4 inch.
- B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.
- C. Install field-mounting transient voltage suppressors for lighting control devices in Category A locations that do not have integral line-voltage surge protection.
- D. Size conductors according to lighting control device manufacturer's written instructions, unless otherwise indicated.
- E. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

**3.03 IDENTIFICATION**

- A. Identify components and power and control wiring according to Section 26 05 53 for identification for Electrical Systems.
- B. Label time switches and contactors with unique designation.

**3.04 IDENTIFICATION**

- A. Perform the following field tests and inspections and prepare test reports:
  1. After installing time switches and sensors, and after electrical circuitry has been energized, adjust and test for compliance with requirements.
  2. Operational Test: Verify actuation of each sensor and adjust time delays.
- B. Remove and replace lighting control devices where test results indicate that they do not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

**END OF SECTION**

**SECTION 26 22 00**  
**LOW-VOLTAGE TRANSFORMERS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Provide electrical materials, installation and testing for the project defined in Section 26 01 00.

**1.02 REQUIREMENTS INCLUDED**

- A. This section describes requirements for dry type transformer.

**1.03 RELATED WORK**

- A. General Requirements for Electrical Work.

**1.04 REFERENCE STANDARDS**

- A. The Underwriters Laboratory, Inc. (UL).  
B. National Electrical Manufacturers Association (NEMA).

**1.05 QUALIFICATIONS**

- A. The equipment manufacturer shall be ISO 9000, 9001 or 9002 certified.  
B. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.  
C. The transformers shall be suitable for and certified to meet all applicable seismic requirements of the International Building Code (IBC) for zone 4 application. Guidelines for the installation consistent with these requirements shall be provided by the transformer manufacturer and be based upon testing of representative equipment.  
D. The test response spectrum shall be based upon a 5 percent minimum damping factor, IBC: a peak of 0.75g, and a ZPA (zero period acceleration) of 0.38g. The tests shall fully envelope this response spectrum for all equipment natural frequencies up to at least 35Hz.

**1.06 SUBMITTALS**

- A. Manufacturers Data:  
1. Dimension drawing and weight.  
2. Technical certification sheet.  
3. Conduit entry/exit locations.  
4. Transformer ratings including:  
a. Primary and secondary kVA.  
b. Voltage.  
c. Taps.  
d. Primary and secondary continuous current.  
e. Basic Impulse level for equipment over 600-volts.  
f. Impedance.  
g. Insulation class and temperature rise.  
h. Sound level.
- B. Shop Drawings: Wiring and connection diagrams.
- C. Output Settings Reports: Record of tap adjustments specified herein.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Temporary Heating: Apply temporary heat according to manufacturer's written instructions within the enclosure of each ventilated-type unit, throughout periods during which equipment is not energized and when transformer is not in a space that is continuously under normal control of temperature and humidity.

**PART 2 PRODUCTS**

**2.01 ALL TRANSFORMERS**

- A. Description: Factory-assembled, dry type transformers for 60 Hz operation designed and manufactured in accordance with NEMA ST 20 and listed and labeled by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- B. Unless noted otherwise, transformer ratings indicated are for continuous loading according to IEEE C57.96 under the following service conditions:
  - 1. Altitude: Less than 3,300 feet.
  - 2. Ambient Temperature: Not exceeding 86 degrees F average or 104 degrees F maximum measured during any 24 hour period.
- C. Core: High grade, non-aging silicon steel with high magnetic permeability and low hysteresis and eddy current losses. Keep magnetic flux densities substantially below saturation point, even at 10 percent primary overvoltage. Tightly clamp core laminations to prevent plate movement and maintain consistent pressure throughout core length.
- D. Impregnate core and coil assembly with non-hygroscopic thermo-setting varnish to effectively seal out moisture and other contaminants.
- E. Basic Impulse Level: 10 kV.
- F. Ground core and coil assembly to enclosure by means of a visible flexible copper grounding strap.
- G. Isolate core and coil from enclosure using vibration-absorbing mounts.
- H. Nameplate: Include transformer connection data, ratings, wiring diagrams, and overload capacity based on rated winding temperature rise.

**2.02 DRY TYPE POWER TRANSFORMERS**

- A. General: Provide dry type power transformers, for lighting and general power applications, rated as indicated.
- B. Transformers shall be designed for continuous operation at rated kVA, for 24 hours a day, yearly operation, with normal life expectancy as defined in American National Standards Institute (ANSI) C57.96.
- C. Shipping: Provide lifting holes, accessible without removal of any of the enclosure components.
- D. Insulation, as listed:

<u>Insulation Size</u>	<u>Temperature Class</u>	<u>Rating</u>	<u>Hot Spot Allowance</u>
2kVA & below	NEMA B or better	80 degrees C rise	30 degrees C
3kVA thru 15 kVA	NEMA F or better	115 degrees C rise	30 degrees C
15kVA and above	NEMA H	150 degrees C rise	30 degrees C

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- E. Base temperature rating and hot spot allowances in the above table on a 40 degrees C maximum ambient temperature and 30 degrees C average ambient temperature.
- F. Overload Capacity: 10 percent above full load rating continuously in an ambient not exceeding 40 degrees C.
- G. Case Temperature: Maintain no more than a 35 degrees C rise above a 40 degrees C ambient.
- H. Taps, as listed:

<u>Transformer Rating</u>	<u>Phase</u>	<u>Taps</u>
I. Through 10kVA	Single	None
J. 15kVA thru 2kVA	Single	(2) 5 percent FCBN
K. 6kVA thru 15 kVA	Three	(2) 5 percent FCBN
L. 30kVA and larger	Single and Three	(2) 2-1/2 percent FCAN and (4) 2-1/2 percent FCBN where FCBN - Full Capacity Below Normal.

- M. Sound levels, not to exceed listed values, as determined by NEMA standards:

<u>Size</u>	<u>Sound Level in dB</u>
Through 9kVA	40
10 through 50kVA	45
51 through 150kVA	50
151 through 300kVA	55
301 through 500kVA	60
501 through 700kVA	62
701 through 1000kVA	64

- N. Provide vibration isolating mounts to isolate the enclosure from the core and coil assembly.
- O. Mounting, suitable as listed:
  1. Single Phase Transformers: Wall
  2. Three Phase Transformers, through 15kVA: Wall.
  3. Three Phase Transformers, 15kVA and above: Floor or ceiling hung channel.
- P. Provide conduit knockouts for line and load conduit entrance.
- Q. Enclosure:
  1. Outdoor units rated 15kVA or above, provide suitable weather-shields over ventilation openings.
- R. Finish: Degrease, clean, phosphatize, prime and finish all interior and exterior surfaces with baked enamel, color ANSI 61 or standard factory grey.
- S. Connect a grounding strap from the secondary neutral to a grounding lug on the enclosure.
- T. Terminals: As specified in Section 26 01 00 - Basic Materials and Methods.
- U. Subject transformers 25kVA above to listed production test at factory:
  1. Applied potential: 4kVA.
  2. Induced potential: 2 times normal to 7200Hz.
  3. Voltage.
  4. Phase Relation.
  5. Continuity.

- V. Perform the listed standard tests on unit of identical design:
  - 1. No-load losses.
  - 2. Total losses.
  - 3. Sound levels.
  - 4. Temperature rise.
  - 5. Impulse.
  - 6. Impedance.
  - 7. Induced potential.
  - 8. Applied potential.
- W. Submit certified test reports for production and standard tests.
- X. Manufacture: Cutler Hammer, General Electric, Eaton.

### **PART 3 EXECUTION**

#### **3.01 DRY TYPE POWER TRANSFORMER**

- A. Transformer integral to switchboard.
- B. Provide one (1) vibration isolating mount, minimum 1 inch thick with 1 inch static deflection, for each mounting point on the transformer.
- C. Connect transformer with flexible metal conduit. Provide an insulated grounding bushing on conduit and bond to transformer case.

#### **3.02 CONNECTIONS**

- A. Ground equipment according to 26 05 26 Grounding & Bonding.
- B. Connect wiring according to 26 05 19 LV Electrical Power Conductors and Cables.

#### **3.03 ADJUSTING**

- A. Record transformer secondary voltage at each unit for at least 48 hours of typical occupancy period. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 5 percent. Submit recording and tap settings as test results.
- B. Adjust buck-boost transformers to provide nameplate voltage of equipment being served, plus or minus 5 percent, at secondary terminals.
- C. Output Settings Report: Prepare a written report recording output voltages and tap settings.

**END OF SECTION**

**SECTION 26 24 13**  
**SWITCHBOARDS**

**PART 1 GENERAL**

**1.01 REQUIREMENTS INCLUDED**

- A. The General Conditions, Supplementary General Conditions, Special Conditions and Division 1 General Requirements apply to the work of this section.
- B. This section describes requirements for switchboards equipment.

**1.02 RELATED WORK**

- A. Section 26 01 00: General Requirements for Electrical Work.

**1.03 REFERENCE STANDARDS**

- A. The Underwriters Laboratory, Inc. (UL).
- B. National Electrical Manufacturers Association (NEMA).

**1.04 SUBMITTALS**

- A. Manufacturers Data:
  - 1. Switchboard.
- B. Shop Drawings:
  - 1. Switchboard.

**PART 2 PRODUCTS**

**2.01 OVERCURRENT PROTECTIVE DEVICES**

**2.02 SWITCHBOARD**

- A. Construction:
  - 1. Enclosure: Rigid, dead-front, metal enclosed, free standing, bussed structures, bolted together. Provide removable, 12 gauge sheet steel, minimum, screw-on access plates at front, top and rear.
  - 2. Quality control: Provide each vertical section which is composed of UL listed devices with a UL Label. Provide switchboard which conforms to applicable NEMA standards. Test switchboard at factory before delivery.
- B. Bussing:
  - 1. Phase Bus: Silver-plated copper, rated 1,000 amperes per square inch cross sectional area maximum, braced for 50,000 RMS amperes minimum.
  - 2. Neutral Bus: Full-size, aluminum, copper, with lugs for connection of neutral conductors, in accordance with Section 16100 - Basic Materials and Methods.
  - 3. Ground Bus: Half-size, copper, with lugs for connection of ground conductors, in accordance with Section 16100 - Basic Materials and Methods.
  - 4. Spacing: Maintain code separation between phases and between phase and ground.
- C. Shipping:
  - 1. Provide lifting eyes for handling switchboard.
  - 2. Provide shipping splits, if required and main bus-splice plates for reconnection at job site.
- D. Finish: Degrease, clean, phosphatize, prime, and finish all interior, and exterior surfaces with baked enamel, color American National Standards Institute (ANSI) 61, or standard factory grey.
- E. Nameplates: Provide nameplates for all circuit breakers and manufacturers' nameplate indicating voltage and current rating, switchboard type and shop order number.
- F. Padlocking Devices: Provide for all breakers and switches.
- G. Circuit Breakers: Provide circuit breakers in frame sizes 100 through 800 amperes with thermal-magnetic trip units. Provide circuit breakers in frame sizes 1200 through 2000 amperes with electronic trip units that are insensitive to changes in ambient temperature within

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the circuit breaker's normal operating temperature range. Provide facility in 400 through 800 ampere frame circuit breakers for either thermal-magnetic or electronic interchangeable trip units. Provide circuit breakers with toggle-type handles which are trip-free and trip-indicating. All poles of multi-pole device shall operate simultaneously during open, close and trip operations. Provide circuit breakers indicated with the following ratings:

Circuit Breaker Frame Size	Trip Rating Amperes	Voltage Rating)	(AC	Symmetrical AC Interrupting Capacity
100/2	15 - 100	240		10,000 Min
100/3	15 - 100	240		10,000 Min
225/3	70 - 225	240		65,000 Min
250/3	70 - 250	240		65,000 Min
400/3	250 - 400	240		65,000 Min
600/3	300 - 600	240		65,000 Min
800/3	500 - 800	240		65,000 Min
1200/3	800 - 1200	240		65,000 Min
1600/3	1200 - 1600	240		65,000 Min
2000/3	1800 - 2000	240		65,000 Min

Circuit Breaker Frame Size	Trip Rating Amperes	Voltage Rating)	(AC	Symmetrical AC Interrupting Capacity
100/2	15 - 100	480		18,000 Min
100/3	15 - 100	480		18,000 Min
225/3	70 - 225	480		35,000 Min
250/3	70 - 250	480		35,000 Min
400/3	250 - 400	480		35,000 Min
600/3	300 - 600	480		35,000 Min
800/3	500 - 800	480		50,000 Min
1200/3	800 - 1200	480		50,000 Min
1600/3	1200 - 1600	480		50,000 Min
2000/3	1800 - 2000	480		50,000 Min

H. Fusible Switches:

1. Enclosure: NEMA 1 general purpose suitable for switchboard mounting with pad-lockable doors.
2. Provide defeatable door interlocks that prevent the door from opening when the operating handle is "ON".
3. Fuse Provisions: Equip switches up to 600 amperes with Class R fuse rejection clips. Equip switches with tool Class L fuse clips.
4. Load Terminals: Equip switches with tool applied, compression type, tin plated aluminum connectors, tested to meet the requirements of UL 486B with wire barrels pre-filled with oxide inhibiting compound, and specifically designed as an equipment terminal, T & B "61122"series, Square D "Type VCEL".

I. Manufacturer: Cutler-Hammer "POW-R-LINE C", Square D "Power Style", General Electric "AV-Line".

**PART 3 EXECUTION**

**3.01 CLEANING**

- A. Clean dirt and debris from switchboard enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred surfaces to match original factory finish.

**3.02 PROTECTION**

- A. Protect installed switchboards from subsequent construction operations.

**3.03 SWITCHBOARDS**

- A. Protect switchboards from damage, abuse, dirt and debris during construction. Keep equipment free from dirt, scratches, nicks, blisters and other marks not part of the factory finish. Make touch-ups to the finish with factory enamel.
- B. Unless noted on drawing, anchor free standing panels to concrete slabs with 1/2 inch or larger anchor bolts fastened to malleable iron or steel expansion shields in the slab. Submit a detail indicating anchor method.
- C. Coordinate all required conduit openings, blockouts, stub-ups, and conduit entrance requirements.
- D. Identify conductors with circuit numbers and phase tape.
- E. Neatly arrange wiring within the equipment. Bundle and wrap conductors #8 AWG and smaller with plastic wire ties.
- F. Install an insulated grounding bushing on conduits which enter the equipment.

**END OF SECTION**

**SECTION 26 24 16**  
**PANELBOARDS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This section describes requirements for branch circuit panelboards.

**1.02 RELATED WORK**

- A. Section 26 01 00: General Requirements for Electrical Work.

**1.03 REFERENCE STANDARDS**

- A. The Underwriters Laboratory, Inc. (UL).
- B. National Electrical Manufacturers Association (NEMA).

**1.04 SUBMITTALS**

- A. Manufacturers Data:
  - 1. Panelboards.
- B. Shop Drawings.
  - 1. Panelboards.

**PART 2 PRODUCTS**

**2.01 PANELBOARDS - GENERAL REQUIREMENTS**

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
  - 1. Altitude: Less than 6,600 feet (2,000 m).
  - 2. Ambient Temperature:
    - a. Panelboards Containing Circuit Breakers: Between 23 degrees F (-5 degrees C) and 104 degrees F (40 degrees C).
    - b. Panelboards Containing Fusible Switches: Between -22 degrees F (-30 degrees C) and 104 degrees F (40 degrees C).
- C. Short Circuit Current Rating:
  - 1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
- D. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.
- E. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
- F. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- G. Bussing: Sized in accordance with UL 67 temperature rise requirements.
  - 1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
- H. Conductor Terminations: Suitable for use with the conductors to be installed.
- I. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
  - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    - a. Indoor Clean, Dry Locations: Type 1.
    - b. Outdoor Locations: Type 3R.
  - 2. Boxes: Galvanized steel unless otherwise indicated.
    - a. Provide wiring gutters sized to accommodate the conductors to be installed.
  - 3. Fronts:

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- a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
- b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
- c. Finish for Painted Steel Fronts: Manufacturer's standard grey unless otherwise indicated.
- 4. Lockable Doors: All locks keyed alike unless otherwise indicated.
- J. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

**2.02 BRANCH CIRCUIT PANELBOARDS**

- A. General: Provide bussed, circuit breaker or fusible switch type panelboards with main lugs or circuit breaker in flush or surface mounted enclosures as indicated.
- B. Construction:
  - 1. Cabinets: Code gauge steel cabinets, deadfront panels, and doors. Fasten deadfront panels to cabinets with concealed trim fasteners. Conceal front door hinges.
  - 2. Dimensions: 20 inches wide by 6 inches deep.
  - 3. Locks: Flush door locks, keyed alike for all panelboards.
  - 4. Access: Door-in-Door (Not EZ-Trim).
  - 5. Standards: Provide UL label where applicable and conform to No. 67 and 50 Underwriters Laboratories, Inc., and NEMA PB-1.
- C. Bussing:
  - 1. Phase Bus: Silver-plated copper, rated 1000 amperes per square inch cross sectional area maximum, braced for 100,000 rms amperes minimum.
  - 2. Neutral Bus: Copper with lugs for connection of neutral conductors.
  - 3. Ground Bus: Copper with terminals for equipment grounding conductors.
  - 4. Terminals: As specified in Section 26 05 19 - Building Wire and Cable.
- D. Finish: Degrease, clean, phosphatize, prime, and finish cabinets, deadfront panels, and doors with baked enamel, color ASA-61, or standard factory grey. Galvanized cabinets are acceptable for flush cabinets.
- E. Nameplates:
  - 1. Provide a nameplate identifying panelboard in accordance with 26 01 00 - General Requirements for Electrical Work.
  - 2. Provide a manufacturer's nameplate on the deadfront interior panel indicating panelboard type, voltage rating, current rating and manufacturer's name.
- F. Directory: Provide a directory card which fits into slots in the back of the panelboard. Protect directory with non-yellowing clear plastic.
- G. Manufacturer: Westinghouse (Pow-R-Line 2), General Electric, Square D.
- H. Circuit Breakers:
  - 1. Provide circuit breakers for miscellaneous branch circuits with frame sizes and ratings as shown on the plans.
  - 2. Bolt-on, thermal magnetic, molded case, with inverse time current overload, and instantaneous magnetic trips, trip-free and trip-indicating all poles of multi-pole device shall operate simultaneously during open, close and trip operations. Provide circuit breakers indicated with the following ratings:

Panel Type	Circuit Breaker Frame Size	Trip Rating (Amperes)	Voltage (Ac Rating)	Symmetrical AC Interrupting Capacity
1	100/1 pole	15-100	120	10,000 Min
	100/2 & 3 poles	15 – 100	240	10,000 Min
	150/2 & 3 poles	110 - 150	240	18,000 Min
	225/3 poles	125 - 225	240	22,000 Min

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Panel Type	Circuit Breaker Frame Size	Trip Rating (Amperes)	Voltage (Ac Rating)	Symmetrical AC Interrupting Capacity
2	100/1 pole	15-100	277	14,000 Min
	100/2 & 3 poles	15 – 100	480	14,000 Min
	150/2 & 3 poles	110 - 150	480	25,000 Min
	225/3 poles	125 - 225	480	25,000 Min

- I. Manufacturer: Eaton Cutler-Hammer (Pow-R-Line 2), General Electric, Square D.

**PART 3 EXECUTION**

**3.01 BRANCH CIRCUIT PANELBOARDS**

- A. Mount panelboard so that the top is 6 feet-6 inches above the finished floor.
- B. Neatly terminate conductors onto breaker, ground bus and neutral bus. Train conductors in an organized grouping with conductors fanning out at the circuit terminals, bundled in the wireways and laced with plastic ties.
- C. Identify all conductors with a circuit number and phase color.
- D. Type all panelboard directories.
- E. Provide a minimum of three (3) 3/4-inch empty conduits into accessible ceiling space.
- F. Provide insulated grounding bushings on all conduits which enter the cabinet and bond to ground bus.
- G. Install conduits in a vertical line, perpendicular to the cabinet.

**END OF SECTION**

**SECTION 26 26 53.1**

**ELECTRICAL VEHICLE CHARGING STATIONS - BUS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electric bus charging stations, including the following:
  - 1. Technical specifications for electric bus charger.
  - 2. Vehicle-to-charging system interface.
  - 3. User interfaces.
  - 4. Remote monitoring and communication.
  - 5. Service maintenance.

**1.02 RELATED SECTIONS**

- A. Section 01 00 General Requirements of Electrical Work.

**1.03 SUBMITTALS**

- A. Submit under provisions of Section 01 30 00 – Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Indicate area layout, equipment locations, details of assembly, and anchorage.
- D. Operation and Maintenance Data: For entire system.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: The charging system will become a vital component of the University transport system for the coming 10-20 years. Therefore, charging manufacturers should exhibit:
  - 1. Financial stability to ensure support during the lifetime of the product
  - 2. A proven track record in delivering and servicing large infrastructure products/ projects
  - 3. A strong capability to adapt to changes in the fast-emerging industry of electric vehicle charging
  - 4. A long-term commitment to electric vehicle charging on a global level. Global developments will have an impact on local projects and local installed base.
- B. Regulatory Requirements: Provide UL listed equipment and controls.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store products as recommended by manufacturer until installation.

**1.06 WARRANTY**

- A. Warranty: Provide manufacturer's standard warranty.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Manufacturer and Model: ABB HVC150C or equal.

## 2.02 TECHNICAL SPECIFICATIONS FOR ELECTRIC BUS CHARGER

- A. Charging station is an SAE J1772 CCS1 plug-in style system with capability for mounting on a pedestal, wall, or existing structure, 150 kW EVSE. The unit complies with all J1772 standards and is capable of providing up to 200 A DC to the vehicle. Grid connection should be 480 VAC, three phase, 60 Hz. LED status indicators for troubleshooting. The charger is capable of converting AC power to DC power for direct DC transmission to vehicle in accordance with SAE J1772 CCS1.
1. EVSE Units: ABB HVC150C
  2. Equipment: SAE J1772 CCS1 plug-in charger. Split system with power conversion equipment separate from near-vehicle depot box.
  3. Input Voltage: 480 VAC, three phase, 60 Hz power input per modular charger unit. Requires no more than single, dedicated, 250A breaker per charger unit.
    - a. AC Power Connection shall be 500 MCM or smaller
  4. Power Factor: > 0.94
  5. Efficiency: > 0.93
  6. Total Harmonic Distortion: Charging system shall be compliant with IEEE 519 specifications
  7. Output Voltage Range: 200 – 850 VDC without derating charging power
  8. Dimensions (footprint): Power conversion module (enclosure) shall be compact, less than 48" x 32" (W x D) per 150 kW modular block
  9. Mechanical Impact Resistance: IK10
  10. Safety Features:
    - a. Short Circuit Rating: Exceeds 60,000 amperes symmetrical
    - b. Surge Protection: In accordance with IEC 61643-1 and IEC 61643-11.
    - c. Ground Fault: Internal 20 mA CCID with auto re-closure (three attempts).
  11. Compliance:
    - a. Safety: UL2202, CSA C22.2 No. 107.1-16, UL2231-1, UL2231-2, NEC Article 625, SAE J1772.
    - b. EMC: FCC Part 15, Class B, Canadian ICES-003.
    - c. UL & CSA compliance completed by independent testing laboratory prior to shipment. UL & CSA certificates will be made available by manufacturer.
  12. Environmental:
    - a. Operating Temperature: -31 to 122 F (-35 C to 50 C) ambient.
    - b. Operating Humidity: Up to 95% non-condensing.
    - c. NEMA Rating: 3R.

## 2.3 TECHNICAL SPECIFICATIONS FOR DISPENSING UNIT

- A. Dispensing unit is a separate unit from the charger that utilizes an SAE J1772 CCS1 plug-in style cable. Unit shall be capable of mounting on a pedestal, wall, Unistrut rack or existing structure.
1. EVSE Unit: ABB HVC-C Depot Box, or equal.
  2. Cable: CCS1 type connector head, 200A DC maximum output, 1000V DC rated, 20 ft minimum length. Each dispensing unit shall have one cable.
  3. System Layout: It should be possible to install up to three dispensing units for connection to a single charging cabinet.
  4. Charging Style: The system shall be capable of sequential charging.
  5. Inputs from Charging Cabinet or Prior Depot Box:
    - a. DC+
    - b. DC-
    - c. Ground
    - d. Communications (fiber or ethernet)
    - e. Safety interlock
  6. Power Input: 120VAC, 20 A

7. Dimensions: Dispensing unit shall be compact, less than 32" x 24" x 9" (H x W x D)
8. Ingress Protection: Dispensing unit shall be rated to IP65
9. Mechanical Impact Protection: Dispensing unit shall be rated to IK10
10. Temperature Range: -35C to 45 C
11. Dispensing unit shall have an integrated LED status light with the option to install an additional external LED status light. It should be possible to mount this light up to 10 meters away from the dispensing unit.
12. Dispensing unit shall have an integrated emergency stop button with the option to install an additional external emergency stop button. It should be possible to mount this button up to 10 meters away from the dispensing unit.
13. Dispensing unit shall have an integrated non-emergency stop button with the option to install an additional external non-emergency stop button. It should be possible to mount this button up to 10 meters away from the dispensing unit.
14. Dispensing unit shall be installable up to 150 meters from the charging cabinet
15. Dispensing unit shall not include a screen
16. Dispensing unit shall not include a credit card or RFID reader

#### **2.4 VEHICLE-TO-CHARGING SYSTEM INTERFACE**

- A. Charging system shall be capable of wiring up to three depot box(es) for connection to up to three vehicles per system.
- B. Charging shall occur sequentially or via smart charging.
- C. Each depot box shall have one dedicated cable.
- D. Connection method between charger and vehicle shall be compliant and interoperable with internationally recognized standards and recommended practices.
- E. The mating interface shall be an SAE J1772 CCS1 plug-in style connector.
- F. The cable shall have a connector with DC+, DC-, ground, control pilot, and proximity pilot for mating to the vehicle plug inlet.
- G. The charger shall communicate with the vehicle over Power Line Communication via the control pilot line.
- H. CCS1 plug-in style charging systems are described in and shall be compliant with the following standards:
  1. SAE J1772 CCS1
  2. IEC 61851-23-1
  3. ISO/IEC 15118 Ed.2
- I. Charging system interoperability shall be demonstrable and confirmed before procurement. List reference projects with customer name, bus type and number of systems included.

#### **2.5 USER INTERFACE**

- A. The charging system user interface shall be designed so that it requires minimal interaction with the operator.
- B. User interface shall indicate charging system status via LED (ready to charge, performing handshake, charging, charging complete, error). Charging system will be capable of wiring an external LED beacon for flexibility in LED light placement
- C. User interface shall include an emergency stop button or the possibility to wire an external emergency stop button to the interface control module.

#### **2.6 REMOTE MONITORING AND COMMUNICATION**

- A. Charging system is capable of network connectivity via 3G or 4G modem and includes option for ethernet port for wired connection to external network switch
- B. Charging system is capable of remote monitoring for remote troubleshooting, charger fleet management, over-the-air software updates and data monitoring.

- C. Charging system communication in accordance with OCPP 1.6J, including Core & Smart Charging Profiles for advanced charger scheduling and management

## **2.7 SERVICE AND MAINTENANCE**

- A. The charging manufacturer should provide service options including remote and onsite interventions by trained and certified technicians. Manufacturer should also have a proven, capable international service organization in place to provide 2<sup>nd</sup> or 3<sup>rd</sup> line support to local service organization.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for EV charging equipment electrical conduit to verify actual locations of conduit connections before equipment installation.
- C. Examine walls, floors, and pavement for suitable conditions where EV charging equipment will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.02 INSTALLATION**

- A. Comply with NECA 1 and NECA 413.
- B. Concrete Base Mounting:
  - 1. Install EV charging equipment on existing concrete base.
    - a. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    - b. Install anchor bolts to elevations required for proper attachment to supported equipment.
    - c. Secure EV charging equipment to concrete base according to manufacturer's written instructions.
- C. Comply with mounting and anchoring requirements specified by University Representative.
- D. Wiring Method: Install cables in existing raceways.
  - 1. Comply with requirements for raceways and boxes specified in Section 26 05 34 "Conduit for Electrical Systems" and Section 26 05 37 "Boxes for Electrical Systems"
- E. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- F. Secure covers to enclosure.

### **3.03 CONNECTIONS**

- A. Connect wiring according to Section 26 05 19 "Low-Voltage Electrical Power Conductors and Cables."
- B. Comply with grounding requirements in Section 26 05 26 "Grounding and Bonding for Electrical Systems."
- C. Comply with requirements for installation of conduit in Section 26 05 34 "Conduit for Electrical Systems." Drawings indicate general arrangement of conduit, fittings, and specialties.
- D. Tighten electrical connectors and terminals according to manufacturer's published torque tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

### **3.04 IDENTIFICATION**

- A. Identify system components, wiring, cabling, and terminals.

**3.05 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections with the assistance of a factory-authorized service representative.
- C. Tests and Inspections:
  - 1. For each unit of EV charging equipment, perform the following tests and inspections:
    - a. Unit self-test.
    - b. Operation test with EV.
    - c. Network communications test.
- D. EV charging equipment will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

**3.06 STARTUP SERVICE**

- A. Engage a factory-authorized service representative to perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.

**3.07 ONGOING MANAGEMENT SERVICES**

- A. Engage a station manufacturer that offers a service to manage the administration and policies of the electric vehicle charging stations on an ongoing basis.

**3.08 SOFTWARE AGREEMENT SERVICE**

- A. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for the duration of an active Network Service Plan.
- B. Upgrade Service: At Substantial Completion, remotely update software to latest version. Install and program software upgrades that become available while an active Network Service Plan is maintained. Upgrading software shall include operating system and new or revised licenses for using software.

**3.09 DEMONSTRATION**

- A. Train Owner's maintenance personnel to adjust, operate, and maintain EV charging equipment.

**END OF SECTION**

**SECTION 26 26 53.2**  
**ELECTRICAL VEHICLE CHARGING EQUIPMENT - FLEET**

**GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.02 SUMMARY**

- A. Section includes Electrical Vehicle (EV) charging equipment that provides Level 2 EV charging.

**1.03 DEFINITION**

- A. EV: Electric vehicle.
- B. EV Cable: The off-board cable containing the conductor(s) to connect the EV power controller to the EV that provides both power and communications during energy transfer.
- C. EV Charger or EV Charging Equipment: See "EVSE".
- D. EV Connector: A conductive device that, when electrically coupled to an EV inlet, establishes an electrical connection to the EV for the purpose of power transfer and information exchange. This device is part of the EV coupler.
- E. EV Coupler: A mating EV inlet and connector set.
- F. EV Inlet: The device in the vehicle into which the EV connector is inserted, and a conductive connection is made for the transfer of power and communication. This device is part of the EV coupler.
- G. EVSE: Electric Vehicle Supply Equipment. It includes the EV charging equipment and conductors, including the ungrounded, grounded, and equipment grounding conductors and EV cables, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for transferring energy between the premise wiring and the EV.

**1.04 SUBMITTALS**

- A. Submit product data under provisions of Section 01 30 00.
- B. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for EV charging equipment.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- C. Shop Drawings: For EV charging equipment.
  - 1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 2. Detail fabrication and assembly of mounting assemblies for EV charging equipment.
  - 3. Include diagrams for power, signal, and control wiring.
- D. Manufacturer's Warranty.
- E. Operation and Maintenance Data: For EV charging equipment to include in operation and maintenance manuals.
- F. Software and Firmware Operational Documentation
  - 1. Online training and help documentation
  - 2. Station activation sticker

### 1.05 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- C. Comply with UL 2231-1, UL 2231-2, UL 2594, and NEC Article 625.
- D. Comply with SAE J1772.
- E. Comply with FCC Part 15 Class A.

### 1.06 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components of EV charging units that fail(s) in materials or workmanship within specified warranty period.

## PRODUCTS

### 2.01 MATERIALS

- A. Basis-of-Design Product: Provide ChargePoint; CT4000 family of electric vehicle charging stations or approved equal.
- B. Source Limitations: Obtain EV charging equipment from single manufacturer.
- C. EV Charging Equipment
  - 1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
  - 2. Comply with NFPA 70.
  - 3. ADA compliant.
  - 4. Metering: +/- 2 percent from 2 percent to full scale of output (30 A).
  - 5. EV Charging Equipment Mounting: Surface
  - 6. Enclosures: Rated for environmental conditions at installed location.
    - a. Outdoor Locations: NEMA 250, Type 3R.
    - b. Aluminum and UV-resistant plastic.
    - c. Paint and Anodized.
    - d. Charging components protected by security screws.
    - e. Charging connectors in locking holsters.
    - f. Meter, modem, and CPU, tamper resistant.
  - 7. EV Cable and Connectors:
    - a. SAE J1772 connector.
    - b. Connectors with locking holster as shown on plans.
    - c. 23-foot cable with cable management system.
  - 8. Status Indicators
    - a. LEDs to indicate power, charging, charging complete, system status, faults, and service.
  - 9. Display Screen
    - a. VGA-resolution, daylight-viewable LCD screen with UV protection. Daylight readable and fingerprint resistant.
    - b. Displays power, charging, charging complete, remote control, system status, faults, payment and pricing details, and service.
  - 10. Networking
    - a. WAN Communications: Cellular GSM/GPRS and CDMA.
    - b. LAN Communications: 2.4 GHz Wi-Fi 802.11b/g/n.
    - c. Capable of remote configuration and reporting.

11. Payment
    - a. RFID (ISO 15693, ISO 14443), NFC, Contactless credit card reader.
    - b. PCI (Payment Card Industry) compliant.
    - c. Capable of remote control and authorization including mobile phone application or toll free phone
  12. Charging Network: compatible with ChargePoint EV charging network.
    - a. Multiple units shall independently connect to charging network.
    - b. Individual units shall be capable of indicating station status and availability providing or connecting
- D. Performance Requirements
1. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
  2. Surge Withstand: 6 kV at 3000 A.
  3. Integral GFCI.
  4. Auto-GFCI fault retry.
  5. Input Power:
    - a. 40 A, 208/240-V ac, 60 Hz, single phase per charger.
    - b. Dual circuits do not need to be interlocked.
- E. EV Charging Levels:
1. Single vehicle, AC Level 2 at up to 7.2 kW per vehicle.
  2. Dual vehicles, AC Level 2 at up to 7.2 kW per vehicle.

## 2.02 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## EXECUTION

### 3.01 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for EV charging equipment electrical conduit to verify actual locations of conduit connections before equipment installation.
- C. Examine walls, floors, and pavement for suitable conditions where EV charging equipment will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. Comply with NECA 1 and NECA 413.
- B. Concrete Base Mounting:
  1. Install EV charging equipment on 24-inch nominal-diameter and 24-inch concrete base per Section 32 16 01 - Concrete Improvements.
    - a. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    - b. Install anchor bolts to elevations required for proper attachment to supported equipment.

- c. Secure EV charging equipment to concrete base according to manufacturer's written instructions.
- C. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- D. Wiring Method: Install cables in raceways. Conceal raceway and cables except in unfinished spaces.
  - 1. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
  - 2. Comply with requirements for underground raceways and enclosures specified in Section 260543 "Underground Ducts and Raceways for Electrical Systems."
- E. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- F. Circuit Breakers: Comply with Section 262816 "Enclosed Switches and Circuit Breakers."
- G. Secure covers to enclosure.

### **3.03 CONNECTIONS**

- A. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Comply with grounding requirements in Section 260526 "Grounding and Bonding for Electrical Systems."
- C. Comply with requirements for installation of conduit in Section 260533 "Raceways and Boxes for Electrical Systems." Drawings indicate general arrangement of conduit, fittings, and specialties.
- D. Tighten electrical connectors and terminals according to manufacturer's published torque tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

### **3.04 IDENTIFICATION**

- A. Identify system components, wiring, cabling, and terminals.

### **3.05 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections with the assistance of a factory-authorized service representative.
- C. Tests and Inspections:
  - 1. For each unit of EV charging equipment, perform the following tests and inspections:
    - a. Unit self-test.
    - b. Operation test with EV.
    - c. Network communications test.
- D. EV charging equipment will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

### **3.05 STARTUP SERVICE**

- A. Engage a factory-authorized service representative to perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.

**3.05 ONGOING MANAGEMENT SERVICES**

- A. Engage a station manufacturer that offers a service to manage the administration and policies of the electric vehicle charging stations on an ongoing basis.

**3.05 SOFTWARE AGREEMENT SERVICE**

- A. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for the duration of an active ChargePoint Network Service Plan.
- B. Upgrade Service: At Substantial Completion, remotely update software to latest version. Install and program software upgrades that become available while an active ChargePoint Network Service Plan is maintained. Upgrading software shall include operating system and new or revised licenses for using software.

**3.09 DEMONSTRATION**

- A. Utilize ChargePoint Station Management Services, ChargePoint Assure Services, and Train Owner's maintenance personnel to adjust, operate, and maintain EV charging equipment.

**END OF SECTION**

**SECTION 26 27 26**  
**WIRING DEVICES**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Provide electrical materials, installation and testing for the project improvements.

**1.02 DESCRIPTION**

- A. This section describes requirements for wiring devices and connections.

**1.03 RELATED WORK**

- A. Section 26 01 00: General Requirements for Electrical Work.
- B. Section 26 05 26: Grounding.
- C. Basis of design cubicle whip connections and floor box plates.

**1.04 REFERENCE STANDARDS**

- A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2000.
- B. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2005).
- C. NEMA WD 6 - Wiring Device -- Dimensional Requirements; National Electrical Manufacturers Association; 2002.
- D. NFPA 70 - National Electrical Code; National Fire Protection Association; 2005.

**1.05 SUBMITTALS**

- A. Submit manufacturers' data and shop drawings in accordance with Section 01 3000 - Administrative Requirements and Section 01 6000 - Product Requirements for items listed.
- B. Provide submittals for items listed documenting compliance with specification requirements.
- C. Product Data:
  - 1. Electrical Materials: Manufacturer's current published catalog sheets.

**PART 2 PRODUCTS**

**2.01 ALL WIRING DEVICES**

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

**2.02 WIRING DEVICES**

- A. Provide UL listed wiring devices, white or color selected by Engineer, with voltage and current ratings specified and wire terminations designed to contain stranded conductors. Provide grounding type receptacles. Provide RED color for all wiring devices connected to the emergency power system.
- B. Provide 120 volt single and duplex receptacles which meet Federal Specification W-C-596 as listed:

1. SPECIFICATION GRADE - COMMERCIAL (DESIGNER)

	HUBBELL	PASS & SEYMOUR	LEVITON
NEMA 5-20R single	#2161	#26342	#16351
NEMA 5-20R duplex	#2162	#26342	#16352

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2. SPECIFICATION GRADE - COMMERCIAL

	HUBBELL	PASS & SEYMOUR	LEVITON
NEMA 5-20R single	#5361	#5361	#5361
NEMA 5-20R duplex	#5362	#5362	#5362
NEMA 5-20R duplex with isolated ground	#IG-5362	#IG-6300	#5362-IG
NEMA 5-20R duplex with GFCI	#GF-5362	#2091-S	#6599

3. STANDARD GRADE - COMMERCIAL

	HUBBELL	PASS & SEYMOUR	LEVITON
NEMA 5-20R single	#5351	#5358	#5351
NEMA 5-20R duplex	#5352	#3232	#5352

- C. Provide receptacles other than 120-volt single and duplex as indicated on drawings.
- D. Provide 20-amp AC quiet type switches which meet federal specification W-C596 with voltage ratings to suit branch circuit requirements indicated and as listed:

	HUBBELL	PASS & SEYMOUR	LEVITON
Single Pole	1221	20AC	1221
Double Pole	1222	5952	1222
Three Way	1223	20AC3	1223
Four Way	1224	5954	1224
SPST Momentary	1557	5935	1257

- E. Listed manufacturers establish a standard of quality. Substitutions will be considered in accordance with Section 26 01 00, General Requirements for Electrical Work.
- F. Key Switches: Equivalent to listed switches, activated with removable key.
- G. Switch with Pilot Light: Leviton #5226, Bryant #6405, G.E. #7945, or equal.
- H. Wall Plates: Type 302 stainless steel, satin finish, minimum 0.040-inch-thick, single or multiple gang.

**PART 3 EXECUTION**

**3.01 WIRING DEVICES**

- A. Connect wiring devices to circuits indicated using side or back wiring terminals, designed to contain stranded wire.
- B. Connect green grounding pigtail from receptacles to outlet box with screw.

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- C. Install wiring devices flush with the device plate fronts.
- D. Align plates plumb with wall, and cover opening, without use of "jumbo" plates.

**END OF SECTION**

**SECTION 26 56 00**  
**EXTERIOR LIGHTING**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Exterior luminaires with lamps and drivers.
  - 2. Luminaire supports.
  - 3. Luminaire-mounted photoelectric relays.
- B. Related Documents & Sections:
  - 1. Drawings and general provisions of the Contract apply to the work of this Section.
  - 2. Division 26 General Requirements of Electrical Work sections apply to work in this Section.
- C. Coordination Requirements:
  - 1. Coordinate the installation of all light fixtures with the work of other trades. This includes but is not limited to placement of fixtures in conjunction with civil work such as sidewalks, roadways, parking lots, landscaping, and building exteriors.
  - 2. Coordinate the installation of all light fixtures with mounting surfaces fixtures that light will be mounted within, onto, or through. Coordinate placement of fixture supports, anchors and mounts.

**1.02 SUBMITTALS**

- A. Product Data: For each type of light fixture, arranged in order of fixture designation. Include data on features, accessories, and finishes.
  - 1. Submit manufacturer's product datasheet on each and every light fixture.
  - 2. Furnish shop drawing portfolios (collated & bound sets) containing the following information:
    - a. Name of manufacturer, make, and model of each particular fixture in the project.
    - b. Product listing information (UL, ETL, DLC, Dark Sky, etc...)
    - c. Descriptive cut sheets. Indicate fixture catalog number selections, highlight, or make obvious which part numbers are used to build the complete fixture catalog number.
    - d. Complete photometric information and coefficient utilization tables.
    - e. Fixture voltage, match to project specifics.
    - f. Wiring diagrams for power, control, and signal wiring.
    - g. Photoelectric relays and how they interconnect into the system schematically.
    - h. The number, type, and wattage of the fixture lamps. Include lamp rated life, color temperature, color rendering index (CRI), initial & mean lumen output.
    - i. The wattage and illumination information for LED fixtures. Include rated life, color temperature, CRI, initial & mean lumen output of LED fixtures.
    - j. Lens information including type, pattern, thickness, material type, special features.
    - k. Fixture options, mounting details and ceiling compatibility information.
    - l. Construction of fixture housing and door, door type, access hole information.
    - m. Fixture ballast and driver manufacturer and type information.
    - n. Means of attaching luminaries to supports and indication that the attachment is suitable for components involved.
  - 3. Submit all lighting fixtures required to be used on this project in one single submittal so that all fixtures can be reviewed one at a time. Those fixtures not receiving a shop drawing action of "No exception taken" or "Furnish as corrected" on the first submittal will be resubmitted for review. A light fixture receiving a shop drawing action of "Revise as noted and resubmit" or "Submit specified item" after the third review for any reason, must be furnished as originally specified.

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4. Create the portfolios from standard manufacturer's specification sheets. Identify each fixture by the letter or number indicated on the fixture schedule or project plan sheets as applicable. The combining of more than one fixture type of fixture on a single shell is unacceptable.
- B. Shop Drawings for nonstandard or custom lighting fixtures: Show details indicating dimensions, weights, methods of field assembly, components, features, and accessories. Product Certificates: For each type of ballast and driver, dimmer-controlled fixtures, provided by manufacturer.
- C. Product Schedule: For all luminaires and lamps, using the same designations as on the Project Drawings.
- D. Qualification Data: For testing laboratory providing photometric data for luminaires.
- E. Product Certificates: For each luminaire type and for each photoelectric relay type.
- F. Product Test Reports: For each luminaire, for tests performed by a qualified testing agency. Provide all applicable source quality-control reports.
- G. Operation and Maintenance Data: Instructions for each product including information on replacement parts.
- H. Provide all applicable field quality-control reports.
- I. Project Record Documents: Record actual connections and locations of luminaires and any associated remote mounted components. Provide this information along with project 'as-builts' per the contract documents plans and specifications.
- J. Warranty: Provide a copy of the sample warranty prior to commencement of work. Include a copy of the final approved warranty in the project close out documentation.

### 1.03 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in CEC/NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with IEEE C2, "National Electrical Safety Code."
- C. Comply with CEC/NFPA 70.
- D. Manufacturers: Firms regularly engaged in the manufacturer of interior and exterior light fixtures of types and ratings required, whose products have been in satisfactory use in similar service for not less than three (3) years.
- E. Installer: Qualified with at least three (3) years of successful installation experience on projects with interior and exterior lighting fixture work similar to that required for this project.
- F. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturers' laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- G. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products and complying with applicable IES test standards.
- H. Provide luminaires from a single manufacturer for each luminaire type.
- I. Mockups: As required on a project-by-project basis (typically not required) for exterior luminaires, complete with power and control connections.
  1. Obtain Owner's approval of luminaires in mockups before starting installations.
  2. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed work.

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3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.04 REFERENCES

- A. California Electrical Code (CEC) Compliance: Comply with the CEC (NFPA 70) as applicable to the installation and construction of lighting fixtures.
- B. NEMA Compliance: Comply with applicable requirements of NEMA Standard Pub. Nos. LE-1 and LE-2 pertaining to lighting equipment.
- C. ANSI/UL Compliance: Comply with ANSI/UL Standards pertaining to interior and exterior lighting fixtures for hazardous locations. ANSI C82.11 – American National Standard for Lamp Ballasts – High Frequency Fluorescent Lamp Ballasts – Supplements.
- D. IEEE C62.41.2 – Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits.
- E. IESNA LM-79 – Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; Illuminating Engineering Society.
- F. IESNA LM-80 – Approved Method: Measuring Lumen Maintenance of LED Light Sources.
- G. NECA 1 – Good Workmanship in Electrical Construction, latest edition.
- H. NECA/IESNA 501 – Standard for Installing Exterior Lighting Systems, latest edition.
- I. Underwriter's Laboratories (UL) Listings. Provide fixtures that have been UL Listed and labeled to any or all of the following standards as applicable to the project:
  1. UL 844 – Luminaires for Use in Hazardous (Classified) Locations.
  2. UL 924 – Emergency Lighting and Power Equipment.
  3. UL 1598 – Luminaires.
  4. UL 8750 – Light Emitting Diode (LED) Equipment for Use in Lighting Products.

#### 1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Received, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 501 (exterior lighting), NECA/IESNA 502 (industrial lighting), and all manufacturer's written instructions.
- B. Keep fixtures in original product packaging until ready for installation. Do not leave unpackaged fixtures unattended or where they are subject to dirt, debris, or damage.
- C. Keep all fixtures warm, dry, safe, and secure. Adhere to manufacturer storage requirements.
- D. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering prior to shipping.

#### 1.06 WARRANTY

- A. Provide a five (5) year manufacturer warranty for all exterior fixtures, LED drivers, and LED light boards (light engines) from date of substantial completion of the project. This warranty to cover all product defects, performance criteria, and parts.
- B. Manufacturer and installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
  1. Failures include, but are not limited to, the following:
    - a. Structural failures, including luminaire support components.
    - b. Faulty operation of luminaires and accessories.
    - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

## **PART 2 PRODUCTS**

### **2.01 FIXTURES, GENERAL**

- A. Provide all fixtures with UL or other qualified third party listed for the environment where they will be installed including: damp, wet, extreme temperature, or hazardous locations.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Luminaires must comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
- D. Metal Parts: Free of burrs and sharp corners and edges.
- E. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.
- F. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- G. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Provide removable doors for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- H. Exposed Hardware Material: Stainless steel.
- I. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- J. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area of field.
- K. Provide reflecting surfaces with minimum reflectance as follows unless otherwise indicated:
  - 1. White Surfaces: 85 percent.
  - 2. Specular Surfaces: 85 percent.
  - 3. Diffusing Specular Surfaces: 75 percent.
- L. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- M. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where, indicated, match finish process and color of pole or support materials.
- N. Variations in Luminaire Finishes: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.
- O. Diffusers and Globes:
  - 1. Acrylic Diffusers: 100 percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
  - 2. Glass: Annealed crystal glass unless otherwise indicated.
  - 3. Lens Thickness: At least 0.125 (3.175 mm) minimum unless otherwise indicated.

- P. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
  - 1. Provide label with the following lamp and ballast characteristics:
    - a. "USES ONLY" and include specific lamp type.
    - b. Lamp diameter, shape, size, wattage and coating.
    - c. CCT and CRI for all luminaires.
- Q. Seismic Performance: Label luminaires and lamps as vibration and shock resistant to withstand common vibrations encountered at installation site.
  - 1. The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to the seismic forces specified and the luminaire will be fully operational during and after the seismic event."

## **2.02 MANUFACTURERS**

- A. Manufacturers: As noted on the drawings by notes and/or by the light fixture schedule on drawings.

## **2.03 LUMINAIRE SUPPORT COMPONENTS**

- A. Comply with all manufacturer written instructions for the physical characteristics and installation procedures.

## **2.04 LED LIGHTING FIXTURES**

- A. Provide complete LED lighting fixtures for general illumination that have been tested by IES LM-79 and LM-80 requirements.
- B. Provide LED light fixtures that are fabricated, assembled, and manufactured as a complete fixture unit, including housing, mounting hardware, driver, light boards (light engines), and lens.
- C. Provide LED lighting fixtures that allow for separate replacement of the light boards and driver. In other words, "throw away" fixtures with non-replaceable components are not permitted.
- D. Provide LED lighting fixtures capable of continuous dimming as a standard offering. Dimming range to be from 100% to at least 20% of rated lumen output. Provide dimming control of 0-10VDC.
- E. Provide all LED fixture control devices compatible with the type of drivers and dimming requirements of the particular project and coordinated with the light fixture submittals prior to ordering.
- F. Provide universal input voltage (120-277 VAC) drivers for all LED applications.

## **2.05 LED DRIVERS**

- A. Provide drivers that operate from a 60Hz input AC voltage from 120V-277V. Provide unit with an input voltage tolerance range of at least +/- 10%.
- B. The Total Harmonic Distortion (THD) of the driver input current must be no more than 20% when operating at nominal input voltage.
- C. Provide drivers with a minimum Power Factor (PF) of 0.90.
- D. Provide drivers that comply with ANSI C62.41 Category A for transient voltage protection.
- E. Drivers must comply with requirements of the FCC rules and regulations, Title 47 CFR Part 18, Non-consumer (Class A) for EMI and EMF (conducted and radiated) interference.

## **2.06 LED BOARDS**

- A. Rated minimum life of 60,000 hours minimum per IES LM-70 testing requirements.

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- B. Provide a TM21 report on LED boards to be used which tests LED life and lumen maintenance per the IES LM-80 standard, and LED light output and efficacy per the IES LM-70 standard.
- C. Provide a correlated color temperature (CCT) of the LEDs of 4000K unless noted otherwise. Provide uniform CCT for all LED modules within like luminaire types and luminaires within a given project.
- D. Provide LED boards such that any individual LED failure on a section of LED board within the fixture will not result in significant output loss of the overall fixture.

## **2.07 LUMINAIRE-MOUNTED PHOTOELECTRIC RELAYS**

- A. Comply with UL 773 or UL 773A.
- B. Contact Relays: Factory mounted, single throw, designed to fail in the on position, and factory set to turn light unit on at 1.5 to 3 fc (16 to 32 lx) and off at 4.5 to 10 fc (48 to 108 lx) with 15-second minimum time delay. Provide relay with directional lens in front of photocell to prevent artificial light sources from causing false turnoff.
  - 1. Relay with locking-type receptacle must comply with ANSI C136.10.
  - 2. Adjustable window slide for adjusting on-off set points.

## **2.08 POLES**

- A. Manufacturers: As indicated in the luminaire schedule.
- B. All Poles:
  - 1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire electrical conduit to verify actual locations of conduit connections before luminaire installation.
- C. Examine walls, roofs, canopy ceilings, and overhang ceilings for suitable conditions where luminaires will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.02 LUMINAIRE INSTALLATION**

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports. Additional support requirements include:
  - 1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.
  - 2. Sized and rated for luminaire weight. Able to maintain luminaire position after cleaning and relamping.
  - 3. Support luminaires without causing deflection of finished surface.
  - 4. Luminaire-mounting devices must be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.
- C. Wall-Mounted Luminaire Support:
  - 1. Attach to structural members in walls.
- D. Wiring Method: Install cables in raceways. Conceal raceways and cables.
- E. Install luminaires level, plumb, and square with finished grade unless otherwise indicated. Install luminaires at height and aiming angle as indicated on Drawings.

- F. Coordinate layout and installation of luminaires with other construction.
- G. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation.
- H. Comply with requirements in Sections "LV Electrical Power Conductors and Cables 600V," "Conduit" and "Grounding & Bonding for Electrical Systems" for wiring connections and wiring methods.

### **3.03 CORROSION PREVENTION**

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Section "Conduit." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

### **3.04 IDENTIFICATION**

- A. Identify system components, wiring, cabling, and terminals per Section "Identification for Electrical Systems."

### **3.05 FIELD QUALITY CONTROL**

- A. Inspect each installed luminaire for damage. Replace damaged luminaires and components.
- B. Perform the following tests and inspections:
  - 1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
  - 2. Verify operation of photoelectric controls.
- C. Illumination Tests:
  - 1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IES testing guide(s):
    - a. IES LM-5
    - b. IES LM-50
    - c. IES LM-52
    - d. IES LM-64
    - e. IES LM-72
  - 2. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
- D. Luminaire will be considered defective if it does not pass tests and inspections.
- E. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

### **3.06 DEMONSTRATION**

- A. Train Owner's maintenance personnel to adjust, operate, and maintain luminaires and photocell relays.

### **3.07 ADJUSTING**

- A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting the direction of aim of luminaires to suit occupied conditions. Make up to two visits to Project during other-than-normal hours for this purpose. Some of this work may be required during hours of darkness.
  - 1. During adjustment visits, inspect all luminaires. Replace lamps or luminaires that are defective.
  - 2. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
  - 3. Adjust the aim of luminaires in the presence of the Owner.

**END OF SECTION**

**SECTION 27 10 05**  
**STRUCTURED CABLING FOR DATA**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Communications system design requirements.
- B. This section describes requirements for the installation of the communication cabling system and telecommunication outlets:
  - 1. Cabling and pathways connecting Electric Vehicle Power Charging Station (EVPCS) and Electric Vehicle Dispensers (EVD).

**1.2 RELATED REQUIREMENTS**

- A. Section 26 01 00: General Requirements for Electrical Work.
- B. Section 26 05 19: Low-voltage Electrical Power Conductors and Cables
- C. Section 26 05 34: Conduit
- D. Section 26 05 37: Boxes
- E. Section 26 27 26: Wiring Devices

**1.3 CODES AND STANDARDS**

- A. Comply with the current applicable standards of the listed agencies for the telecommunication cabling system installation.
- B. American National Standards Institute (ANSI)/ Telecommunications Industry Association (TIA)/ Electronic Industries Alliance Standards:
  - 1. ANSI/TIA/EIA-526-14 Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant (latest).
  - 2. NSI/TIA/EIA-568-C: Commercial Building Telecommunications Wiring (latest).
  - 3. ANSI/TIA/EIA-569: Commercial Building Standard for Telecommunications Pathways and Spaces (latest).
  - 4. ANSI/TIA/EIA-598-C: Optical Fiber Cable Color Coding (latest).
  - 5. ANSI/TIA/EIA-606-B (latest): Administrations Infrastructure of Commercial Buildings
  - 6. ANSI/TIA/EIA-607: Commercial Building Grounding and Bonding Requirements for Telecommunications (latest).
  - 7. ANSI/TIA/EIA-758: Customer Owned Outside Plant Telecommunication Infrastructure Standard (latest).
- C. Building Industry Consulting Services International (BICSI) Telecommunications Distribution Methods Manual (latest).
- D. Americans with Disabilities Act (ADA)
- E. FCC Part 58.500.
- F. California Title 24 codes, including the California electrical Code (CEC), all federal, state, and local codes, regulations and standards
- G. Underwriters Laboratories (UL): Applicable listings and ratings.
- H. UC Davis Communications Cabling Standards ( latest edition)
- I. As-Built record drawings

**1.4 SUBMITTALS**

- A. Procedure: Submit under provisions of Section 01 33 23 - Administrative Requirements and Section 01 60 00 - Product Requirements.

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- B. Product Data: Include data on features, ratings, and performance for each component specified. Catalog cut sheets shall be provided for the following:
  - 1. Wire, cable, cords and optical fiber
  - 2. Accessories
- C. Shop Drawings: Submit within 30 days of award of contract for the University review and approval. For this purpose, request from the University's Representative the AutoCAD backgrounds and electrical drawings. Provide 1 full size hardcopy drawing set and PDF soft copy.
- D. Testing Report
- E. All documentation required per TIA 606 B (latest)
- F. Product Certificates: For each type of cable, connector, and terminal equipment, signed by product manufacturer.
- G. As-Built Record Documentation.
- H. Manufacturer Seismic Qualification Certification
- I. Operation and Maintenance Data: For data communication cabling to include in emergency, operation, and maintenance manuals.
- J. Qualification Data: For Installer and testing agency. Certificates
  - 1. Contractor Certification: Installer must have C-7 California Contractor License. Submit evidence that the Contractor is certified by the manufacturers of the proposed communications cables. If different manufacturers will be used, provide certification for all manufacturers. Provide evidence of a minimum of 5 years of cabling installation type work.
  - 2. Foreman and Installer Certification: Submit evidence that the foreman overseeing the job and all cable installers working on the installation of the communications cabling are certified to install these cables by all of the manufacturers of the communications cables used.
  - 3. The lead onsite technician must have a BICSI Installer Certification and be a Certified Ortronics installer. Provide certification.
  - 4. The Project Manager must have a BICSI RCDD Certification.

**1.5 COORDINATION**

- A. Coordinate layout and installation of data communication cabling with Electric Vehicle Charger Vendor.

**1.6 SCOPE OF WORK**

- A. The work shall consist of the furnishing, installation, termination, testing and documentation of a complete and fully functional low-voltage cabling system for Electric Vehicle Chargers and Dispensers. The work shall be compliant with the above listed ANSI/TIA/EIA standards.
  - 1. Data Communications horizontal cabling distribution systems.
  - 2. Performance testing of all cables.
  - 3. Provide labeling
  - 4. Coordinate with the Electric Vehicle Charging Vendor and University's Representative.

**1.7 COLOR CODING**

- A. All communication cabling shall be color coded per the University Standards. Verify colors with the University's Representative prior to purchase.
  - 1. Data.
  - 2. Fiber Optic- per TIA 598C.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Outside Plant UTP Copper Cable
  - 1. Filled core (waterproofing compound) cable shall be used for underground cable installations.

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- a. PE-39 refers to filled cable with solid polyolefin insulation and is suitable for conduit and direct buried applications. Cable shall meet ANSI ICEA 7CFR-1755-039 and 390 specifications.
  - b. PE-89 refers to filled cable with formed polyolefin insulation and is suitable for conduit and direct-buried applications. Cable shall meet ANSI ICEA 7CFR-1755-089 and 890 specifications.
  - 2. All outside plant cable shall be Plastic Insulated Conductors (PIC) and the cable jacket shall be marked with cable length, cable code, date and manufacturer.
  - 3. The minimum bend radius during installation is 10 times the outside diameter of the cable and 8 times the outside diameter after installation. Minimum bend radius shall be maintained during and after the installation phase.
  - 4. OPS copper shall have a loop left in each Manhole/pull box.
- B. Outside Plant Fiber Optic Cable
- 1. Loose Tube dry cable with water blocking technology cable by use of a water-swellable tape shall be used for underground installations. For outside plant applications, provide Corning Freedom® Loose tube fiber optic cable Single-mode (OS2) SMF-28® Ultra Fiber, or equal. Equipment shall be installed in accordance with the manufacturer's instructions.
  - 2. Minimum bend radius shall be maintained during and after the installation phase. The minimum bend radius during installation is 15 times the outside diameter of the cable and 10 times the outside diameter after installation.
  - 3. Buffer tube fan out kits shall be used per manufacturer's requirements.
  - 4. OPS fiber shall have a 50-foot service loop left in each Manhole and pull box. This slack shall be properly stored and lashed to the Manhole racks and shall not interfere with existing cables and splice closures.

Single-mode Cable Specifications	
Single-mode Fiber Optic Cable Description	Specification
Maximum Attenuation: (dB/km)	0.4 @ 1310nm 0.3 @ 1550nm
Gigabit Ethernet Distance Guarantee: (meter)	5000 @ 1310nm
Temperatures: (Operation)	-40 to +70°C (-40 TO +158°F) All Dielectric -40 to +70°C (-40 TO +167°F) Armored
Maximum Tensile Load: Short Term	2700N (600 lbf)
Maximum Tensile Load: Long Term	890N (200 lbf) ALTOS® 810N (180 lbf) FREEDM®
Approvals and Listings	RUS 7 CFR 1755.900
Design and Test Criteria	ANSI/ICEA S-87-640 (ALTOS®), ANSI/ICEA S-104-696 (FREEDM®)
NEC Listing	Article 770
Manufacturer:	Corning Cable Systems® ALTOS®, FREEDM®, or equal.

- C. Labeling: Wrap-around self-laminating cable labels of various sizes for labeling cables.

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. Install, document and test per applicable TIA standards
- B. Perform all installation work in a neat, high quality manner using qualified craftspeople.
- C. General: Coordinate the features of materials and equipment so they form an integrated system. Match components and interconnections for optimum future performance.

- D. Place cables with sufficient bending radius so as not to kink, shear, or damage jackets, binder or cables, including where cables are coiled for future use or slack. Do not exceed manufacturers' specified bending radii. Do not wrap cables around the feet of systems furniture.
- E. Do not pull tie wraps so tight as to kink or crimp the cable jackets.
- F. In no event shall any cables be spliced.
- G. Perform daily clean-up following all installations and terminations.

### 3.2 INSTALLATION

#### A. Labeling Scheme:

- 1. Provide machine labels on cables on both ends of the cables.
- 2. Label using an electronic label such as a Brother P-Touch.

#### B. Fiber Optics distribution:

##### 1. Fiber Optic Cables

- a. Fiber Cable to be fusion spliced and pre-terminated with ultra-polished SC Single-mode fiber pigtails.
- b. Fiber to be tested bi-directionally with power meter and Optical Time Domain Reflectometer (OTDR). Test all horizontal single-mode FTTH cables for full compliance with TIA/EIA 568-C.1 and C.3 (including addenda).
- c. Field-testing instruments for single-mode fiber optic cabling shall meet the requirements of ANSI/TIA/EIA-526-7 using testing Method A and B. Reference TIA/EIA-568-C.3 for additional test requirements.

##### d. Link Attenuation testing (power meter):

- 1) All horizontal single-mode fiber optic cables shall be tested for link attenuation (i.e. power insertion loss) as referenced in TIA/EIA-568-C.1, Section 11.3 and/or per Table 12, which is ever more stringent. See Table 12 for proper fiber testing measures.
- 2) All strands shall be tested in a bi-directional method at both wavelengths with a Power Source and Meter capable of recording and plotting data.
- 3) TIA/EIA 568-C.1 and TIA/EIA 526-7 outlines the steps required to test single-mode fiber optic cable.
- 4) Ensure that all connectors (on both sides of the mating sleeve) are clean prior to testing. Do not use canned air to clean the connectors or mating sleeves.

##### e. Optical Time Domain Reflectometer (OTDR):

- 1) Horizontal cables shall be tested bi-directional and at both wave lengths for dB loss and end-to-end total installed distance with an OTDR. Each trace shall indicate the cable length and 2-Point dB loss between the A and B test trace cursors. Test using a manufactured and terminated Corning MM/SM or equal, as appropriate, glass launch cable. OTDR traces shall use the Medium Smooth setting and readings taken in feet.
- 2) Cables to be tested at the appropriate pulse width to accommodate short cable lengths (MM cable at maximum 5 ns/6.6 ft and SM maximum 20 ns/6.6 ft).

##### f. Maximum Loss Measurements for Installed Fiber Optic Cables

Mated Connector Loss:	0.5 dB per mated pair
Connector Loss:	0.5 dB per connector
Splice Loss: Fusion Multimode.	0.15 dB
Fusion Single-mode	0.06 dB
Mechanical	0.3 dB
Fiber loss: Multimode	3.5 dB/km @ 850 nm
	1.0 dB/km @ 1300 nm
Fiber loss: Single-mode	1.0 dB/km @ 1310 nm (Inside Plant Cable)
	0.75 dB/km @ 1550 nm (Inside Plant Cable)

- g. Adhere to all manufacturer installation guidelines and for cable allowable radiuses for pulling (20 times the diameter) and at rest (10 times the Diameter).
- h. Pulling tensions shall not exceed 600 lbs and/or those recommended by the fiber optic cable manufacturer.
- i. Manufacturer's minimum specified bend radius shall not be exceeded.
- j. In the event that cabling is totally dielectric (nonmetallic) and installed in a nonmetallic duct, a #14 copper wire shall be placed in the conduit with the cable to be used as tracer for cable locating purposes.

### 3.3 TESTING

- A. Test Result Documentation:
- B. Power meter fiber optic test results shall be provided by tester-generated documentation in hard copy (paper copy) and soft copy (CD electronic copy). Provide in manufacturer software format.
- C. OTDR fiber optic traces shall be provided in hard copy (paper copy) and soft copy (CD electronic copy) that is readable by Corning Cable Systems, GN Net Test or Fluke LinkWare software, or equal. Test results shall be organized by NAM# and closet in an orderly fashion.
- D. CD electronic copy shall have the latest version of software burned on it for viewing test results and a copy of the transmittal letter explaining any issues regarding the test results (skipped #'s, cause of failures, etc.).
- E. CD shall have a computer generated label with:
  - 1. Contractor's Name
  - 2. Date
  - 3. UC Davis Bldg name, CAAN and project number
  - 4. Contents (Fiber/copper Test Results, etc.)
- F. Test all horizontal cables and terminations to demonstrate that all cables meet or exceed all performance specifications designated by TIA/EIA 568-C Annex E. Tests must demonstrate full compliance with Category 6a specifications.
- G. Provide test results for all conductor pairs of all cables on a CD in an MS Excel worksheet format.
- H. Complete testing and labeling, with test results presented to the University's Representative no later than 3 weeks prior to completion.
- I. Test the basic link as defined by ANSI/TIA/EIA T568-A, and including the horizontal cable by performing end-to-end tests using a Level III certified tester to attain minimum limits for attenuation and NEXT accuracy of 1.0 and 1.6dB, respectively.
- J. Test horizontal cable to meet the following performance standards:

Parameter	Category 6A
Frequency Range	1-100 MHz
Attenuation	24.0 dB
NEXT	40.4 dB
Power Sum Next	38.4 dB
ACR	11.8 dB/100m
Power sum ACR	9.8 dB/100m
ELFEXT	17.4 dB
Power Sum ELFEXT	14.4dB
Return Loss	17.3 dB
Propagation Delay	536.3 MHz
Delay Skew	45 ns/100m
Insertion Loss	31 dB/100m
Return Loss	17.3dB
PSACRF	20.8 dB/100m
ACRF	23.8 dB/100m

- K. Remove and replace all cables failing to meet above indicated standards, with cables that prove, by testing, to meet the standards. The installation will not be accepted until testing indicates that all pairs in all cables meet the appropriate standards.
- L. Testing requirements for copper and fiber optic horizontal cables:
  - 1. Test and document each horizontal cable segment separately.
  - 2. Test each end-to-end cable link.
  - 3. Perform testing on all installed cabling systems.
  - 4. Provide all documented test results to the University's Representative for review and approval by Communication Resources.
  - 5. Prior to testing, all cables shall be installed, terminated, labeled and inspected.
  - 6. Notify the University's Representative 48 hours in advance and provide a testing schedule. The University's Representative has the right to verify the set-up and procedures of testing instruments and be present during cable certification.
  - 7. Provide calibration certifications for testing equipment to be used, prior to commencement of testing. All testers are to have been calibrated within the last year of testing.
  - 8. All tests conducted before approval shall not be accepted.
- M. Permanent link test all UTP horizontal station cables with a Level III or layer tester for full compliance with TIA/EIA 568-C.2, Category 6A specifications. Test using Cat 6A test cords, by same manufacturer as test equipment and save all graphs when testing. Contractor to test patch panels. Test results shall be provided for all conductors of each cable and shall meet University's design standards. Test reports to be provided in the tester manufacturer software format. CD electronic copy shall have the latest version of software burned on it for viewing test results and a copy of the transmittal letter explaining any issues regarding the test results (skipped numbers, cause of failures, etc.).

### 3.4 DOCUMENTATION

- A. Cable Records: Provide a database of cable records, both hard copy and on USB drive, using the University approved format for input to the University's facilities management package.
  - 1. Project Documentation: Submit the following documentation immediately upon completion of testing and labeling of the system. They will be used by the University's Representative for making data equipment connections to the system:
    - a. Reproducible as-built drawings showing location, cable location numbers, conduit.
    - b. Test results.

### 3.5 CABLING

- A. All cabling shall be plenum CMP.
- B. All cabling shall be compliant with the latest ANSI/TIA/EIA 568 standard
- C. All cabling shall be color coded.
- D. All cabling (except fiber) shall be rated for power over Ethernet PoE.
- E. Splices are not permitted for horizontal cabling.
- F. Maximum lengths:
  - 1. Horizontal copper cabling- 295 feet.
  - 2. Fiber optic cable max supportable length varies depending on media and base. Max supportable lengths shall be per EIA/TIA 568 latest (e.g. TIA 568 C.0, Table 7)
- G. Minimum Bend Radius
  - 1. Copper: Per TIA 568-C.0 (latest), 4x diameter (no load)
  - 2. Fiber: Per Table 2 TIA 568-C.0 (latest) typically 10x diameter
- H. Conduit fill shall be not greater than 40%. The following are examples:
  - 1. 1-1/4" EMT: 7 Cat 6 cables maximum (Cat 6, 4pr, CMP, .236" OD)

City of Roseville Corporation Yard  
Zero Emission Bus Depot Project

2. 1-1/4" EMT: 4 Cat 6a cables maximum (Cat 6a, 4pr, CMP,.300" OD)

**END OF SECTION**

TEXT OF AB 626

**Assembly Bill No. 626**

**CHAPTER 810**

***An act to add and repeal Section 9204 of the Public Contract Code, relating to public contracts.***

[Approved by Governor September 29, 2016. Filed with Secretary of State September 29, 2016.]

**LEGISLATIVE COUNSEL'S DIGEST**

AB 626, Chiu. Public contracts: claim resolution.

Existing law prescribes various requirements regarding the formation, content, and enforcement of state and local public contracts. Existing law applicable to state public contracts generally requires that the resolution of claims related to those contracts be subject to arbitration. Existing law applicable to local agency contracts prescribes a process for the resolution of claims related to those contracts of \$375,000 or less.

This bill would establish, for contracts entered into on or after January 1, 2017, a claim resolution process applicable to any claim by a contractor in connection with a public works project. The bill would define a claim as a separate demand by the contractor for one or more of the following: a time extension for relief from damages or penalties for delay, payment of money or damages arising from work done pursuant to the contract for a public work, or payment of an amount disputed by the public entity, as specified.

This bill would require a public entity, defined to exclude certain state entities, upon receipt of a claim sent by registered or certified mail, to review it and, within 45 days, provide a written statement identifying the disputed and undisputed portions of the claim. The bill would authorize the 45-day period to be extended by mutual agreement. The bill would require any payment due on an undisputed portion of the claim to be processed within 60 days, as specified. The bill would require that the claim be deemed rejected in its entirety if the public entity fails to issue the written statement.

This bill would authorize, if the claimant disputes the public entity's written response or if the public entity fails to respond to a claim within the time prescribed, the claimant to demand to meet and confer for settlement of the issues in dispute. The bill would require any disputed portion of the claim that remains in dispute after the meet and confer conference to be subject to nonbinding mediation, as specified. The bill would provide that unpaid claim amounts accrue interest at 7% per annum. The bill would prescribe a procedure by which a subcontractor or lower tier contractor may make a claim through the contractor.

This bill would require the text of these provisions, or a summary, to be set forth in the plans or specifications for any public work which may give rise to a claim. The bill would specify that a waiver of these rights is void and contrary to public policy, except as specified. The bill would also specify that it does not impose liability on a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

By increasing the duties of local agencies and officials, this bill would impose a state-mandated local program.

This bill would, on January 1, 2020, repeal the provision establishing the claim resolution process.

This bill would specify that these provisions constitute a matter of statewide concern.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that, if the Commission on State Mandates determines that the bill contains costs mandated by the state, reimbursement for those costs shall be made pursuant to these statutory provisions.

The people of the State of California do enact as follows:

**SECTION 1.** Section 9204 is added to the Public Contract Code, to read:

**9204. (a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.**

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

(c) For purposes of this section:

(1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3) (A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) "Public entity" shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.

(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.

(v) The Military Department as to any project under the jurisdiction of that department.

(vi) The Department of General Services as to all other projects.

(vii) The High-Speed Rail Authority.

(4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.

(5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

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

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

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

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

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

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

party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

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

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

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

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

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

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

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

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

(g) This section applies to contracts entered into on or after January 1, 2017.

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

(i) This section shall remain in effect only until January 1, 2020, and as of that date is

repealed, unless a later enacted statute, that is enacted before January 1, 2020, deletes or extends that date.

**SECTION 2.**

The Legislature finds and declares that it is of statewide concern to require a charter city, charter county, or charter city and county to follow a prescribed claims resolution process to ensure there are uniform and equitable procurement practices.

**SECTION 3.**

If the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

**APPENDIX A -  
PROGRESS  
PAY FORMS**



Department of Public Works  
 311 Vernon Street  
 Roseville, CA 95678

## MONTHLY PROJECT PAYMENT ESTIMATE SUMMARY

Payment Estimate No: \_\_\_\_\_

Work Performed Through: \_\_\_\_\_

Contractor: \_\_\_\_\_

Project: \_\_\_\_\_

Address: \_\_\_\_\_  
 \_\_\_\_\_

Acct.No: \_\_\_\_\_

Contract Summary	
Original Contract Amount:	(1) _____
Approved Change Orders through #: _____	(2) _____
Quantity Changes (Requires Project Engineer/Inspector verification):	(3) _____
Total Contract Amount to Date:	(4) _____

Payment Summary	CURRENT PAY PERIOD AMOUNT	PREVIOUS AMOUNT	TO DATE AMOUNT
Contract Payments (Payment through PP# _____)			
Change Order Payments (CCO# _____ through _____)			
Total Earnings			
Less: Retention: (5%) In escrow account Yes <input type="checkbox"/> No <input type="checkbox"/>			
Less: Administrative Deductions (Deducted from PP# _____)			
Payment Due to Contractor			

The undersigned Contractor or Contractor's Authorized Representative certifies that to the best of his knowledge, information, and belief, the work covered in this application for payment has been completed in accordance with the contract documents and the costs shown are true and correct.

Resident Engineer: \_\_\_\_\_

Senior Engineer: \_\_\_\_\_

Contractor: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_





Department of Public Works  
 311 Vernon Street  
 Roseville, CA 95678

Project: \_\_\_\_\_  
 Acct.No: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 \_\_\_\_\_

**QUANTITY ADJUSTMENT FORM**

Payment Estimate No: \_\_\_\_\_

Work Performed Through: \_\_\_\_\_

**INSTRUCTIONS**

This form is to accompany Progress Payments or the Final Payment where there are quantity changes (variations in quantities) authorized by the Department of Public Works that adjust the Total Contract Amount.

**Quantity Changes in the amount of:**  
**Accompanying Progress Payment # (or Final Payment) \_\_\_\_\_ have been reviewed and the actual quantities verified.**

Item No.	Item Description	Unit	Unit Cost	Contract Quantity Adjustments								
				This Estimate			Previous Estimates			To-Date Totals		
				Quantity	Increase (Decrease)	Amount	Quantity	Increase (Decrease)	Amount	Quantity	Increase (Decrease)	Amount
						\$ -			\$ -	0		\$ -
						\$ -			\$ -	0		\$ -
						\$ -			\$ -	0		\$ -
						\$ -			\$ -	0		\$ -
						\$ -			\$ -	0		\$ -
						\$ -			\$ -	0		\$ -
						\$ -			\$ -	0		\$ -
Totals						\$ -			\$ -			\$ -

Contractor Signature \_\_\_\_\_ Date \_\_\_\_\_

Resident Engineer Signature \_\_\_\_\_ Date \_\_\_\_\_



**CONDITIONAL WAIVER AND  
RELEASE ON FINAL PAYMENT**

**NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND  
PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY  
ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.**

From: \_\_\_\_\_  
Name of Contractor/Claimant  
\_\_\_\_\_  
\_\_\_\_\_  
Address

Date: \_\_\_\_\_  
Payment Request No: \_\_\_\_\_  
Acct.No: \_\_\_\_\_

Project Name:  
\_\_\_\_\_  
\_\_\_\_\_

To/Owner: CITY OF ROSEVILLE  
Department of Public Works  
Engineering Division  
311 Vernon Street  
Roseville, CA 95678

**Conditional Waiver and Release**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: \_\_\_\_\_  
Amount of Check: \_\_\_\_\_  
Check Payable To: \_\_\_\_\_

**Exceptions**

**Signature**

\_\_\_\_\_  
Claimant Signature

\_\_\_\_\_  
Print Name:

\_\_\_\_\_  
Claimant Title

\_\_\_\_\_  
Date: